APPENDICES

Appendix 2A
Stream Crossing Analysis

Stream Crossing Analysis
Simplot's Proposed Mining at Panels F & G
Technical Memo

1.0 Introduction

Ecological connectivity refers to the capacity of a landscape to support the movement of organisms, materials, and energy (Peck 1998 *as cited in* Porior 2003). In terms of stream crossing design, connectivity is the linkage of organisms and processes between upstream and downstream channel reaches. The health of aquatic populations ultimately depends on the health of their ecosystem, which in large part depends on such connections. Biotic linkage within an aquatic system includes the upstream-downstream movement of fishes, amphibians, insects, debris, sediment, and migration of channel patterns (Porior 2003). Stream crossings, when designed correctly, can provide good passage for aquatic species and debris. Stream crossing structures can be divided into four general types: bridge, circular culvert, pipe arch culvert, and open bottom structures. Descriptions of each crossing type are provided in the following sections.

Ecological functions such as biotic linkage may be blocked by undersized or improperly designed stream crossings. In terms of fish passage, the most common reasons for crossing structure ineffectiveness involve alterations to stream flow, such as insufficient water depths, increased water velocities, and vertical drops (Zwirn 2002). For each structure type, specific features can be designed to accommodate characteristics of the site as well as passage goals of the structure. Goals may include the passage of all fish species and size classes at any time of the year, passage of adult fishes during the spawning period, passage of all fish and other aquatic species, etc. The primary goal for stream crossings associated with Simplot's proposed Panels F&G Mine Expansion Project is to allow for passage of spawning cutthroat trout and to maintain up- and down-stream channel stability by maintaining the ability to accommodate 100-year flood events. The stream crossings associated with the Project would be temporary (approximately 16 years) and designed to support loaded haul trucks (approximately 1200 tons).

2.0 Crossing Types

2.1 Bridge

Description

Bridges are structures erected over a depression or obstruction (such as a stream) that have a floor for carrying traffic and other loads (WCT 2002). Bridges crossing streams are generally designed to have abutments and/or piers located outside the stream, so that the stream flows unobstructed below (Porior 2003). Large bridges needing to support loads such as haul trucks typically require bank armoring (Bates 2003) and other additional structural measures to ensure strength.

Pros

- high level of channel retention and stability (Bates 2003, QDPIF 2005)
- minimal impact on fish passage (BCMF 2002)

- no inherent dimensional limitations (Bates 2003)
- minimal debris problems (Porior 2003)

Cons

- may be most expensive option available (ODFW 2005, Baggett et al. 2001, Salmon Nation 1999, Gibson et al. 2005)
- elaborate design requirements needed to support heavy loads (Blair 2005)
- requires civil engineering or geotechnical expertise (Salmon Nation 1999)

2.2 Circular Culvert

Description

A culvert is a conduit or passageway under a road, trail, or other obstruction, which is generally used to divert a stream or rainfall runoff to prevent erosion or flooding of the obstruction (WCT 2002). A circular culvert is the traditional culvert shape, consisting of a simple rounded pipe either smooth or corrugated (White 2003), unbroken (entire) in cross-section, and made of metal, concrete, plastic, or clay (WCT 2002). Circular culverts are typically covered with embankment around their entire perimeter, and the lower portion may or may not be buried in stream substrate. For this Project, it is assumed that circular culverts would be designed, using the best available technology and information, to simulate a natural stream bottom and to pass fish.

Pros

- low risk of foundation failure (Porior 2003)
- may be least expensive option (Porior 2003, Gibson et al. 2005)
- easiest assembly, installation, and removal (Porior 2003)
- materials widely available (Zwirn 2002)
- strongest of any pipe material (Gibson et al. 2005)

Cons

- can't be built on rock foundations (Porior 2003)
- "stream simulation" requires extra designing effort (Porior 2003)
- may constrict stream flow if not properly designed (Baggett et al. 2001)
- flows inside tend to accelerate if not properly designed; turbulence common (Warren and Pardew 1998, Baggett et al. 2001)
- baffles may not be as effective on rounded bottoms (Zwirn 2002)

2.3 Pipe Arch Culvert

Description

Pipe arch culverts are pipes that have been factory deformed from a circular shape, such that the width (span) is larger than the rise. Pipe arch culverts have a continuous circumference and take the shape of a rounded triangle, the lower portion of which may or may not be buried (WCT 2002). Like circular culverts, pipe arch culverts are typically covered in embankment around their entire perimeter. The wider bottom of a pipe arch allows the culvert to better fit the lower portion of the stream cross-section, allocating more water through the culvert without creating a substantial change in hydraulics (Zwirn 2002).

Pros

- low risk of foundation failure (Porior 2003)
- slightly better “stream simulation” potential than circular culverts (Porior 2003)
- doesn’t need to be embedded as deeply as circular culverts (Porior 2003)
- flat bottom retains backwater influence and reduces water velocity (Zwirn 2002)
- lower profile advantageous for low-clearance situations or where upstream water stage must be minimized (Zwirn 2002)
- may require less road fill than circular culvert (Comfort 2001)

Cons

- can’t be built on rock foundations (Porior 2003)
- more difficult to install than circular culvert (NLDEL 1992)
- may require concrete footings (Gibson et al. 2005)
- more expensive than circular culvert (Gibson et al. 2005)
- eight percent less capacity than equivalent circular culvert (Comfort 2001)
- must be deformed at 30-foot intervals, so long culverts must be assembled on-site, ideally the sections match each other, but in practice, it seldom happens (Porior 2003)
- limited in high traffic loads, relative to circular culvert, due to non-concentric shape (QDPIF 2005, Gibson et al. 2005)

2.4 Open Bottom Culvert

Description

Unlike circular or pipe-arch culverts, open-bottom culverts are discontinuous in profile. Like bridges, open-bottom culverts span the stream channel with supports and allow natural stream features to be retained (Zwirn 2002, Baggett et al. 2001). Like closed culverts, fill must be placed over and around the structure (BCMF 2002). The widths of open-bottom culvert footings increase as load bearing needs increase; the stability of footings is essential to the effectiveness of the structure and is the primary cause of failure (Salmon Nation 1999). Profiles of open-bottom culverts may be square, rectangular, or arched; made of corrugated metal pipe, metal plate, pre-cast concrete, cast-in-place concrete, wood, or clay (WCT 2002).

Pros

- retains natural streambed substrate and channel conditions (Lang et al. 2004, Zwirn 2002)
- minimal impact on fish passage (Zwirn 2002)
- practical for steeper sites or when bedrock is near the surface (Porior 2003, Baggett et al. 2001)

Cons

- high risk of foundation failure if not built on rock or concrete (Salmon Nation 1999, Porior 2003)
- foundations need to be erosion-resistant; sensitive to scour damage (Porior 2003).
- relatively expensive (Salmon Nation 1999, Porior 2003, Gibson et al. 2005).
- requires substantial initial disturbance for culvert footings excavation (Zwirn 2002)

- relatively difficult installation (Salmon Nation 1999)
- requires civil engineering or geotechnical expertise (Salmon Nation 1999)

3.0 Summary of the Analysis for the Existing Sage Creek Haul Road Crossing

The following information can be found in the Mine and Reclamation Plan for Panel E (BLM and USFS 1997), located approximately two miles northeast of Proposed Panel F.

Four crossing designs were considered for the Sage Creek haul road: 1) steel plate arch, 2) bridge, 3) an elliptical culvert, and 4) a circular culvert. An engineering review concluded that the steel plate arch and elliptical culvert were impractical for a structure needing a 50-foot depth of fill to support haul trucks. The bridge option was rejected for similar reasons, in that a large amount of surface disturbance from construction equipment would be necessary to construct footings and a bridge span large enough to support 150-ton haul trucks. In addition, the cost of such a large bridge was estimated at $2.3 million, approximately 100 times more than an equivalent circular culvert.

The final fish passage structure chosen for the Sage Creek haul road crossing was selected from two circular culvert designs proposed by a BLM engineer. The first design proposed a 266-foot long corrugated metal pipe eight feet in diameter. The second design proposed a shorter culvert (200 feet) that included an embankment retaining structure. Both proposed culverts were designed to accommodate a 200-year flood event, and were modified by installing fish passage structures (24-inch high stainless steel weirs) to allow passage of all age classes of fish. In addition, a plunge pool at the outlets of each culvert were designed in order to dissipate the energy of the water flowing through the pipe, thus allowing fish to enter the culverts more easily from the downstream end. Both culverts were designed to function for a minimum of 20-30 years.

The shorter culvert design alternative was eventually rejected in favor of the longer culvert. Although the shorter design alternative involved fewer impacts to the streambed (66 fewer feet of stream channel disturbance) and riparian habitat (0.1 fewer acres of wetland disturbed), additional construction costs were required to build the retaining walls needed to stabilize the channel. It was determined that reducing the culvert length would have only slightly lessened the sediment impacts associated with the second crossing design. This degree of change in sediment impacts was deemed immeasurable between design alternatives in terms of water quality.

4.0 Case Studies

According to surveys in Oregon and California, thousands of existing culverts are total or partial barriers to fish migration (Mirati 1999, SCC 2004). Most are corrugated metal pipes (circular culverts). A 2002 survey of 47 culverts along 210 km of the Trans Labrador Highway (Labrador, Canada) found that 53% posed problems to fish passage (Gibson et al. 2005). All but two of the culverts surveyed were corrugated metal pipes.

Older, circular culverts are largely ineffective for fish passage (Furniss et al. 1991) because culverts were traditionally designed for passing water only (Porior 2003). Fish biologists frequently recommend open-bottom culverts or bridges for stream crossings because fish passage through open structures is generally guaranteed (e.g., Bates 2003, Porior 2003, ODFW 2005). Relative to closed culverts, however, bridges and

open-bottom structures are relatively expensive (ODFW 2005, Baggett et al. 2001) and involve complex installations (Salmon Nation 1999, Labrador Métis Nation 2002). Baggett et al. (2001) report that the Georgia Department of Transportation experienced many difficulties with the installation of the footings for an open bottom arch culvert. Browning's (1990) survey of culverts in Oregon reported that open-bottom culverts, more often than not, had serious undermining which threatened the stability of the fill around the structure (Browning 1990 *as cited in* Salmon Nation 1999). Bridges have a relatively low risk of failure, but in terms of materials and construction costs, bridges are typically the most expensive crossing structure type (Baggett et al. 2001).

The most frequent causes of impasse at circular culverts are a drop (perch) at the culvert inlet or outlet and excessive water velocity inside the culvert. The dynamic nature of stream channels (as well as erosion from culvert installation) has caused perched inlets or outlets to develop around closed culverts that prevent fish from entering (Lang et al. 2004). In addition, narrow inlets and smooth bottoms of many closed culverts causes an increase in water velocities. Several studies document these problems in terms of culvert design.

Lang et al. (2004) studied leaping performance of anadromous salmonids in four "perched" culverts, and found that although leaping ability was site-specific, it was generally proportional to drop height. Adult fish successfully entered culverts that were 2-3 feet high less than 15% of the time, and less than 1% of attempts were successful at a culvert 5 feet high. A widely-cited laboratory study by Stuart (1962) concluded that a pool depth of at least 1.25 times the leap height is needed to reach swim speeds fast enough to make a successful leap.

Warren and Pardew (1998) found fish passage through closed culvert types in Arkansas was an order of magnitude lower than through open bottom structures and natural reaches, and that the difference could be attributed to faster water velocities in closed culverts. Velocities in closed culverts ranged from 1-4 feet per second, whereas velocities in open structures and natural reaches were consistently below one foot per second. Belford and Gould (1996) tested six relatively long circular culverts (>140 feet) in Montana for trout passage effectiveness and concluded that velocity must be inversely proportional to culvert length for fish to successfully pass through. Anadromous salmonids can only sustain heightened swimming speeds, needed to pass some culverts, for limited periods (Furniss et al. 1991). Belford and Gould (1996) found cutthroat trout could pass through a 295-foot circular culvert as long as mean water velocity inside was less than 2.0 feet/second. The longest two culverts surveyed along the Trans Labrador Highway (132.5 and 133 feet) were both observed to successfully pass young trout (Gibson et al. 2005).

Consideration of fish passage during the planning and design of stream crossings can greatly reduce or eliminate the barrier affect that crossing structures can have (Furniss et al. 1991). Published design requirements for closed culverts that accommodate fish passage are now widespread (e.g., NMFS 2001, Porior 2003, ODFW 2005). Culvert design criteria documents prescribe ways to avoid the problems most commonly associated with improperly designed closed culverts. Most list minimum speeds for water velocities that decrease with culvert length (NMFS 2001, CDFG 2002, Bates 2003, Porior 2003, Scottish Executive Consultants 2005, ODFW 2005). The design of longer culverts (>200 feet), therefore, depends largely on controlling water velocity (Scottish Executive 2005), although adding illumination may also be necessary (ODFW 2005).

QDPIF (2005) concedes that fish may be affected by light conditions in culverts but that more research is needed; Scottish Executive (2005) claims light inside culverts is not an issue. Water volume, velocity, and depth are generally considered the most important elements of culvert design. To reduce water velocities, baffles and weirs are frequently installed to provide pools and resting areas for fish, particularly if the culvert is on a slope (Porior 2003). The practice of embedding culverts, a measure to prevent the development of hydraulic drops, increase water depth, and improve "stream simulation," is also a prescribed standard (BCMF 2002, Porior 2003).

Barnard (2003) found that stream simulation culverts, whether round, pipe arch, or bottomless, are reliable and create similar passage conditions compared to the adjoining channel. All culverts in his study with a width ratio of >1.3 (culvert bed width to channel width) and slope ratio of <1.3 (slope of culvert to channel slope) were not significantly different than natural reaches, regardless of culvert type, demonstrating the importance of site choice and design over culvert type per se. In some cases, conditions inside open and closed culverts may differ, but the differences do not necessarily affect fish passage. Another study by Wellman et al. (2000) compared bridges and (box) culverts in 41 Tennessee streams, and found that although sediment conditions differed between streams with culverts and streams with bridges, no differences in fish diversity, abundance, or richness were evident.

In 2004, NewFields (2005) conducted electrofish surveys in Sage Creek, above and below the circular culvert built in 1998, and recorded the presence of cutthroat trout both below and above the crossing. However, since resident cutthroat populations can exist upstream of barriers, these data alone do not answer the question, "does the crossing allow for passage of spawning cutthroat trout?" Thus, to better understand and document the effectiveness of this culvert, additional monitoring data will be collected during early 2005. These data will be included in this technical memo when available. This 266-foot culvert contains weirs to slow water velocity inside the channel, a surge basin at the outlet for fish to rest, and has been designed to accommodate a 200-year flood event (BLM and USFS 1997).

5.0 Summary

In terms of stream crossings associated with this Project, it has been determined that bridges are not feasible due to cost and extensive disturbance in the uplands during construction and removal. Pipe arch and open bottom culverts were determined to be impractical given the amount of fill and weight of haul trucks that the structure would need to support. It has been decided that circular culverts designed to simulate natural stream bottom and to allow for the passage of spawning cutthroat trout would be used at all fish-bearing stream crossings.

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Appendix 2B

EnvironmentalCommitments and BMPs for Haul/Access Roads

Haul and Access Roads

Environmental Commitments
and
Best Management Practices
to
Ensure that Water Quality and Fish Passage are Maintained

Along with standard engineering practices, additional design, construction, and maintenance commitments would be made to protect stream, soil, and aquatic resources. These commitments take the form of environmental protection measures and/or Best Management Practices (BMPs) that would be implemented where appropriate. They are based upon sound, tested techniques from established sources, including, but not limited to, U.S. Forest Service Road-Water Interaction publications (Furniss, 1997; Copstead, 1998; Flanagan, 1998; Johansen, 1997; Moll, 1999); the recent draft *Selenium Management Practices* publication (Agrium et al, 2004); Idaho Department of Lands (1992); Idaho Forest Practices Commission (2004); and the Caribou National Forest Plan (USFS 2003). While these measures will be taken into account during the final road design process, the permitting agencies will have the authority to approve or disapprove any specific aspect of the design.

DESIGN BMPS

Drainage Crossings

- Proper engineering design would ensure that the existing channel configurations immediately up- and downstream of culverts are maintained to the maximum extent possible. This would include maintaining cross sectional dimensions, width-depth ratio, stream gradient (longitudinal profile), velocity, floodplain accessibility and flow patterns. Removing existing riparian vegetation would be restricted to the minimum necessary for equipment maneuvering and the actual necessary permanent disturbed footprint. Where possible, stream bank and floodplain areas needed for working outside the permanent fill/dredge footprint would have approved mots or woven geotextile covered by a temporary fill pad (1-2' thick) to form a working surface.

- Channel crossing culverts would be designed to pass the peak flow associated with the 100-year flow event plus sediment and debris, without headwater above the top of the culvert. A minimum of 10% of the culvert diameter will be buried below the channel bed and the buried portion not counted for the purpose of estimating culvert capacity. Calculation of the 100 year flows will use the higher prediction of the regression methodologies specified in Quillian an Hadenberg (1982) and by Blakemore et al (1994). Culvert gradient shall mimic stream gradient. In general a distance of at least two full meaner lengths (but not less than 50') both upstream and downstream should be used.

- Culverted crossings of streams in which fish have been found and where perennial streams may occur would be designed to pass appropriate or expected species and life-stages during appropriate times of the years during both high and low flow conditions. The final designs would be submitted to BLM, IDEQ, Idaho Department of Water Resources and USFS fisheries biologists for approval. On Forestland, the guidance at the time of initial construction for aquatic organism passage would be followed. Flow depth, flow velocity, and grade would are some of the items the final design would take into consideration. Water velocity on fish-bearing streams would not exceed 2 feet-per-second, or mean stream velocity, whichever is greater.

- In the interest of passing sediment and debris, and facilitating maintenance, minimum culvert diameter would be 18 inches. Where a road footprint requires a long drainage crossing culvert (>40 ft), the specified culvert diameter would also take into account the need for a safe and efficient means to access and clean accumulated debris and sediments.

- In non-fishbearing crossings, culvert inverts would be placed several inches under the bed surface, along grade, whenever possible. This would allow a natural substrate to bed the culvert to provide aquatic benefits as well as reduce the potential for up- and downstream channel changes. Provide riprap or other grade control methods to prevent head and down-cutting

- Road fills at culvert inlets would be protected through the use of riprap up to the flow depths associated with the 100-year peak flow.

- Energy dissipating rock aprons would be used at culvert outlets to return flows to an acceptable velocity and depth as they exit the culvert. The distance downstream that the aprons would extend would be based upon site conditions.

- Unless specific conditions are prohibitive, culverted crossings would be placed perpendicular to the roadway, in other words with the road approaching the natural channel alignment at a 90 degree angle. However, where the road alignment cannot accommodate this, the channel would not be realigned, and thus the angle would not be perpendicular.

- The width of the road fill at the crossing would be limited to the minimum necessary for the crossing. For example, pull out lanes, wide shoulders, etc. would not occur in these areas unless required for safety.

- All requirements and conditions of the relevant Army Corps of Engineers Permit for Road Crossings will be followed at crossings for which the permit applies. However, more stringent requirements and conditions than Approved by the Army Corps of Engineers, may be required by the BLM USFS, and/or Idaho Department of Water Resources.

- Culverts would be installed and maintained to avoid inlet scouring and to prevent erosion of downstream banks. This includes such items as use of rock aprons, protected fills, installation along grade but slightly below bed elevation and other

items discussed in this section. Culverts will not be designed based on inlet control hydraulics.

- The bottom of the designed vertical curve should never be located above the culvert for the drainage crossing, so that water from the low spot in the road on the bridge does not drain directly above the culvert.

- Where beavers are present, if possible, the low spot of the crossing will be situated so that it is over the floodplain and not over the culvert and fill. Appropriately sized rock will cover the downstream slope of the crossing fill to minimize erosion of the fill should the culvert become plugged or overtopped.

- Drainage ditch lengths along roads that drain to stream crossings will be minimized by adding cross-drains or daylight culverts placed on the crossing approaches. The minimum sized culverts shall be 18 inches in diameter.

- For fish-bearing reached, culvert geometry will be appropriately chosen so as to maintain a suitable depth of flow in the culvert, i.e. “squash” shaped culverts will not be used where they result in very shallow flow depths in the culverts.

Road Drainage Network

- Ditch relief cutouts would be installed as needed at spacings adequate to manage runoff, and armored/lined for stability as needed. The cutouts will be located so that any drainage from them will be directed toward sediments ponds constructed for this purpose. The cutouts will be designed to minimize erosion or scouring of fill slopes. Down-drains may also be used. Settling ponds will be located and designed to manage runoff from all sources routed to the ponds.

- Rerouting or transferring up-gradient runoff water via roadside ditches to adjacent basins, even on a small sub-basin scale, which would result in a cross-basin diversions that could alter natural flow and sediment regimes, would be avoided.

- Runoff from road surfaces would be discharged in a manner so as to avoid directly converging with stream channels wherever possible, minimizing or eliminating hydrologic connectivity between the road drainage network and the stream channels. This would be done by: (1) properly locating ditch lines and ditch relief cutouts; (2) by grading slopes away from channel networks; and/or (3) by allowing sufficient distance for flows leaving ditch relief cutouts to re-infiltrate and deposit sediments away from stream channels and their floodplains. Where it is not possible to prevent a ditch or cross drain from draining more or less directly to a channel, the ditch would be armored until reaching the next upstream ditch relief.

- Where possible, cross drains and ditch turn outs would be located on gently sloping, stable terrain such as where rock or stable vegetation is found. Discharge areas would be located to release water on convex slopes where possible, so that water would be dispersed rather than channeled; concave slopes would be avoided wherever possible.

- As needed, ditch relief cutout outflow areas would be armored with riprap, turf reinforcement mat, gabions, or similar types of materials and configured to reduce velocity by providing dispersal and velocity reduction. This armoring would occur wherever needed due to grade and/or substrate characteristics.

- As needed, sediment traps would be used to treat road runoff where there is not sufficient buffering distance or dispersal between the outflow and a stream channel.

- With consideration given to safety concerns as well as drainage considerations, road surfaces will be designed as crowned, insloped, or outsloped as most appropriate for a given road segment.

- Sediments mucked out of drainage ditches and ponds would be placed pit-backfills used for seleniferous waste.

Channel Realignment or Roadfill/channel interactions

- Any in-channel work, whether related to stream bank realignment, crossing, or other purpose would result in reestablishment of original channel gradient, bank width, bank slope, re-compaction of disturbed banks, and width-depth ratio.

- Where channel realignment cannot be avoided, the natural channel's pattern and geometry would be mimicked where possible, including radius of curvature of meanders, stream gradient and width-depth ratio, bank slope and compaction, substrate diameter, habitat features. Runs and glides will be proportioned to the same ration to bank-full depth and slopes as in an identified reference reach.

- Realigned or reconstructed streams would be designed to carry bank full flows in-channel, with flood flows dispersed on floodplains.

- At the upstream and downstream ends of realigned reaches, appropriate transitions to the undisturbed channel reaches would be designed.

- Where appropriate, rather than using riprap, new channel banks would be treated with appropriate material to encourage and enhance both herbaceous and woody vegetation growth. This would occur where banks have non-rocky substrate that would allow such treatments to be effective and develop natural functioning banks.

- Any in-stream structures to be proposed shall be reviewed by the Forest Hydrologist.

Fill Slopes and Cut Slopes

- Where necessary, cut or fill slopes will be benched when feasible from an engineering standpoint in order to reduce runoff velocities, prevent erosion, maximize infiltration and facilitate revegetation.

- Where a fill slope toes out within 50 feet of a perennial stream, silt fences or similar sediment collection treatments, such as sediment traps, straw bales, coir wattles

would be used during construction and until sufficient vegetation exists to prevent erosion. Such devices would similarly be used where fill slopes come within 300 feet of a perennial stream when the toe of the slope is within 50 feet of a drainage directed toward that stream.

- Where original ground is steeper than a 2h:1v (50%), roads should be constructed by completely cutting into the hillside (100% cut), without using any fill.

- In areas where the original ground slope is greater than 2.5h:1v, (40%) a catch bench or toe bench will be cut to prevent fill material from running or rolling excessively down slope.

CONSTRUCTION BMPS

- Road construction materials and methods that would minimize the probability for selenium leaching would be used where appropriate as recommended in the *Selenium Management Practices* draft publication (Agrium, et al, 2004).

- Under no circumstances would center waste shale, or other highly seleniferous material be used for road construction fill material. Rex chert may be used for road construction if it can be demonstrated to the satisfaction of BLM and Forest Service that it will not release unacceptable amounts of selenium, i.e.: only “clean” chert or other material will be used. Seleniferous material which is cut from slopes to build roads will be placed in mine dumps with other seleniferous waste.

- Minimize the time of exposure of bare soils when feasible, before reseeding or other reclamations techniques are implemented.

- Erosion control measures will be in place prior to initiation of construction.

- When feasible, construction near or in drainages would be restricted to normal low flow seasons (late July through October) and would be temporarily halted during runoff events.

- Length of construction time in/near the stream channel would be minimized by segregating that work task to occur as rapidly as possible in a sequential manner; area of disturbance would also be minimized, by restricting equipment to a narrow construction corridor while maintaining a safe running surface.

- As construction near a stream channel is completed, loose material that remains within the flow path of flood events would be removed and placed away from flow paths and floodplains

- Riparian vegetation would remain undisturbed wherever possible, and its disturbance would be limited to that necessary in the actual footprint as well as the minimum

necessary for equipment work in the established construction corridor. This would also apply to large woody debris.

- Topsoil will be salvaged and stockpiled for later use in reclamation.

- If blasting is required, control methods will be utilized to minimize material that is deposited outside the disturbance boundaries.

- All the terms and requirements of Simplot's National Pollutant Discharge Elimination System (NPDES) Permit for Storm Water Discharges from Construction Activities would be followed. These are not reproduced here, but are incorporated by reference.

- Contractors responsible for constructing the road would be responsible for maintaining spill kits on site and would train their personnel on how to respond to an emergency spill.

- Fuel, oils, or other hazardous materials would not be stored or stockpiled within 200 feet of perennial streams.

- Live water shall be piped, pumped or otherwise routed around channel work. No excavation activities shall occur in live water.

RECLAMATION BMPS

Road Corridor and Cut/Fill Slopes

- Once reclamation treatments have occurred, they would be monitored and maintained until they are deemed successful.

- Larger stumps and slash that are by necessity removed during road clearing would be used as temporary sediment filter windrow barriers at the base of road fill slopes or below ditch relief culverts or other locations to provide sediment trapping and runoff velocity control. Stumps and slash would not be used as fill material in fill slopes. Stumps and slash will not be placed in stream channels.

- Cut-slope reclamation would be performed to the safe physical limitations of equipment for spreading topsoil, which is approximately 3h:1v. Figures illustrating where this will be necessary will be provided for analysis and review.

- Fill would be pulled back to the level of the original ground on slopes steeper that 3h:1v down to the point at which the fill width is 20 feet. Once that 20 foot width is reached, an additional pass with a backhoe another 20 feet down to pull fill back to original ground level. Figures illustrating where this will be necessary will be provided for analysis and review.

OPERATIONAL BMPS

Winter Deicing BMPs

- Sand with added salt or salt substitutes would be used when necessary to provide safe winter driving conditions.

- Winter maintenance shall avoid discharge of snow or road material into stream channels.

Miscellaneous

- Mine personnel would be trained to properly respond to and report spills of fuel, waste rock, ore, or other materials that threaten surface water.

- Inspection, maintenance and/or repairs to drainage crossings, slopes, road drainage network, etc. would occur in a timely manner to prevent continuing or extensive erosion/sedimentation problems.

- Inspection reports/logs will be available to regulatory agencies, including IDEQ. Inspections will occur on a daily basis (at a minimum) during runoff events.

Maintenance

- Conduct regular preventative maintenance inspections to ensure proper functioning of all drainage structures, culverts, etc. Inspections should occur AT LEAST every spring following snowmelt, following major summertime precipitation events and prior to winter snowfall. Maintenance and/or repairs to drainage crossings, slopes, road drainage network, etc. would occur in a timely manner to prevent continuing or extensive erosion/sedimentation problems.

- Hauling and other vehicular traffic should be minimized during wet road conditions to reduce impacts to road surfaces/subgrade and drainage structures.

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Appendix 2C
BMPs for Erosion, Sedimentation, and Selenium Control

Best Management Practices
for
Erosion, Sedimentation and Selenium Control
at the
Smoky Canyon Mine
Panels F and G

Various design and management practices have been recognized by regulatory agencies and the mining industry to be effective in controlling environmental impacts from mining operations. Some of these practices have wide applicability throughout the industry and have a significant history of proven effectiveness when properly implemented. These widely accepted and proven management practices are herein referred to as "Best Management Practices" (BMPs). BMPs that are potentially applicable to this project are found in published lists by government agencies including: *Best Management Practices for Mining in Idaho* (IDL 1992), *Catalog of Stormwater BMPs for Idaho Cities and Counties* (IDEQ 2005), *Forest Stewardship Guidelines for Water Quality* (IFPC 2005), and *BMP Fact Sheets from EPA* (EPA 2005). These BMPs are widely used and accepted for control of erosion and sedimentation.

The requirements for BMP implementation often defer to other industry resources with broad experience. Use of existing BMPs for control of selenium mobilization and migration from phosphate mines was reviewed by the Idaho Mining Association (IMA) and described in two publications: *Existing Best Management Practices at Operating Mines* (IMA 2000a), and *Best Management Practice Guidance Manual for Active and Future Mines* (IMA 2000b). These two IMA manuals also described adaptations of accepted BMPs for control of selenium and proposed some new management practices for selenium control that had not been previously published. The BMPs described in the IMA manuals are a mixture of proven management practices, such as those published by the IDL, and other management practices that may be widely practiced but their effectiveness has not yet been fully proven to the regulatory agencies. Because of the wide application and familiarity of the management practices described by IMA, these are still referred to herein as BMPs.

In March 2004, a cooperative document entitled *Selenium Management Practices (Draft)* was prepared by: Agrium Conda Phosphate Operations, Astaris LLC, Bureau of Land Management, Idaho Department of Lands, J.R. Simplot Company, Monsanto Company, and U.S. Forest Service (Agrium et al 2004). This document describes are variety of management practices that can reduce impacts from selenium and other contaminants of potential concern (COPCs) and which have been used already on phosphate mining properties in Southeastern Idaho.

The Smoky Canyon Mine has proposed site-specific BMPs for its operations at Panel B and C that have been previous reviewed and approved by the federal agencies (BLM 2002). Many of these same BMPs are also applicable to the proposed Panels F and G.

Mining activities associated with the Smoky Canyon Mine Panels F and G must also follow the direction of the Revised Forest Plan (RFP) for the Caribou National Forest (USFS 2003). Applicable standards and guidelines for the Project fall under the categories of General Mining (RFP page 3-12) and Drastically Disturbed Lands (RFP pages 3-13 to 3-14). With regard to selenium, standards associated with General Mining in the Revised Forest Plan dictate that,

"*BMPs shall continue to be developed, refined, and implemented to ensure that no release of hazardous substances into the environment exceeding established state and/or federal standards occurs*".

Due to the variability among physical mining environments, any one BMP cannot be universally implemented. Good engineering practices dictate that BMPs are selected and implemented "as applicable," with respect to site conditions. General descriptions of the BMPs in this document have been published either by the EPA, IDL, IMA, or USFS and are considered herein to likely be effective at the Smoky Canyon Mine Panels F and G.

Following is a list of BMPs and associated "effectiveness determinations" for the control of erosion, sedimentation, and selenium mobilization that would be implemented for mining activities at the Simplot Smoky Canyon Mine Panels F and G. A separate and complimentary set of BMPs would be followed for the haul/access roads related to Panels F and G.

Two types of effectiveness evaluations would be performed for BMPs. The first type consists of on-going evaluations of the BMPs to ensure that they are functioning as designed. The second type consists of an annual review of overall BMP effectiveness. Data used to evaluate the effectiveness of BMPs and any new management practices is collected through a number of existing Smoky Canyon Mine monitoring plans, which would be modified to include Panels F and G, as well as information provided by routine visual inspections. Responsibilities for BMP effectiveness evaluations have been assigned to specific department staffs at the mine including: Engineering, Production, and Environmental. Annual reviews of BMP effectiveness would also be conducted by the mine Storm Water Pollution Prevention (SWPPP) Plan team in accordance with the mine Storm Water Pollution Prevention Plan.

Overburden Fill Grading

Final grading should be completed as soon as possible following overburden disposal. During reclamation, the fill slopes should graded at a maximum 3h:1v (horizontal: vertical) slope to reduce surface water run-off velocity.

Effectiveness Determination: Production and Environmental staff shall inspect overburden fill areas for evidence of ponding. Ponding should not be evident 24-hours after the conclusion of a storm event. If ponding is observed, Production and Engineering staff will review surveyed profiles to mitigate the area of concern. Corrective action will be reported in the annual environmental report.

Haul Road Run-Off Controls

Grading and other controls on haul roads controls run-off and minimizes erosion and sedimentation. Haul roads should be graded away from fill slopes, or crowned, so that concentrated flow is not allowed to run along or across and erode the roads. Berms shall be maintained to prevent run-off. Other controls such as appropriately located rolling dips, water bars, and water deflectors could be used to reduce erosion of the road surface or road base.

Effectiveness Determination: Production and Environmental staff shall inspect roads for presence of collection and diversion ditches, dips, and water bars as needed. There should be minimal evidence of concentrated flow erosion of road surfaces or fills.

Construction of Fills for Roads and Facilities

Fills, road or parking areas should be constructed of chert or other non-seleniferous material and designed with stable slopes. Slopes with topsoil should have temporary vegetation.

Effectiveness Determination: Production staff shall document on shift reports inspections of fills for road and other facilities for construction material type and evidence of erosion. Slopes should be constructed of durable rock. This BMP only applies to roads and fills outside of disturbed pit limits.

Snow Removal

Man-made accumulations of additional snow on active external overburden areas should be avoided, to the extent practicable, by disposing of snow that is picked up for any purpose in designated areas where the snow and snow melt will not be incorporated into an active external overburden disposal facility. Snow disposal areas should be located where snow-melt would flow to sediment control ponds or open pits to prevent sediment being released outside run-off control areas.

Effectiveness Determination: Production and Environmental staff shall inspect for evidence that snow storage and disposal areas are uphill of control ponds or open pits. There should be minimal spring runoff from snowmelt within the mine disturbance area that is not routed through sediment control ponds or silt traps.

Concurrent Reclamation

Reclamation of disturbed areas that are no longer needed for active mining operations should be conducted concurrent with other mining operations.

Effectiveness Determination: Engineering staff shall review annual reports to determine if areas no longer needed for mining are being reclaimed. Production staff shall ensure that reclamation of such areas commence when they are no longer needed for active mining operations.

Soil Salvage and Reuse

Salvaging topsoil and vegetation growth medium from disturbed areas prior to mining is important for the long-term reclamation success of these areas. Topsoil should be removed and either is direct hauled to regraded surfaces ready to receive topsoil or is placed in topsoil stockpiles for temporary storage.

Effectiveness Determination: Production staff shall inspect areas being stripped of vegetation and topsoil to determine if all suitable topsoil is being removed to the extent reasonable. Engineering staff shall conduct an annual inspection of all topsoil storage piles to ensure that soil salvage quantity meets baseline objectives. There should be minimal erosion of topsoil

storage piles. Production staff shall ensure that temporary crops of vegetation are established on stockpiles to reduce soil loss.

Reuse of topsoil should follow the selenium guidelines published by the USFS. A layer of approximately one to three feet of topsoil should be placed over external and/or backfill overburden disposal areas at the time of final reclamation. Environmental staff shall inspect areas shortly after they are topsoiled to ensure coverage with topsoil thickness of at least 12 inches.

Soil Stabilization

Stable reclaimed areas are promoted through the use of stabilization techniques such as: placement of soil on slopes that are 3h:1v or less; scarifying soil surfaces to reduce run-off; seedbed preparation to enhance the germination rate of seeds; incorporation of fertilizer and other methods to enhance successful growth of vegetation and/or direct run-on/run-off.

Effectiveness Determination: Production and Engineering staff shall review regrading surveys to determine that all final slopes are 3h:1v or less. The Production, Engineering, and Environmental staff shall conduct a late spring or early summer inspection of all reclaimed areas to ensure they are topsoiled and reseeded and that a significant portion of each is protected with applicable soil stabilization methods and is not susceptible to excessive erosion. There should be minimal evidence of erosion and off-site transport of sediment from reclaimed areas.

Capping Seleniferous Overburden

Seleniferous overburden can contribute selenium in runoff and contribute to bioaccumulation in vegetation. Reclamation techniques seek to cover seleniferous overburden with a minimum of four feet of low-seleniferous chert on Panels F and G. Topsoil would then be spread on top of the chert layer to complete the cap.

Effectiveness Determination: Production staff shall inspect capped areas after they are constructed to ensure 100% of seleniferous shale overburden is covered with chert cap. Engineering will obtain and review survey information indicating chert cap is at least 4-feet thick over each capped area on Panels F and G, check areas of topsoil cover to ensure 100% of all capped areas are covered with topsoil, and check topsoil cover to ensure 95% of each area is covered with at least 12-inches of topsoil.

Pit Backfilling

Pit backfilling and subsequent revegetation helps restore these areas to stable and productive post-mining uses. Pit backfilling in the F and G Panels would allow these areas to be revegetated and support the post-mining land use.

Effectiveness Determination: Engineering staff shall review annual reports to ensure compliance with approved backfilling plans.

Riprap and Gabions

Chert riprap can be placed in areas subject to erosion, such as below culverts, drainage outlets and ditches thereby reducing erosion and sedimentation. Gabion walls made of chert could also be selectively used to protect road fills from erosion by flowing water.

Effectiveness Determination: The SWPPP team will annually inspect all culvert and drainage outlets to ensure they are protected as needed with riprap or comparable erosion control methods. Gabion walls will be inspected at least once during construction by engineering staff to ensure they are built with non-seleniferous, durable rock.

Run-on Collection/Runoff Control (Control of Surface Water)

Drainage and diversion channels are constructed as necessary to divert run-on water around disturbance areas and collect runoff from disturbed area to route it to settling ponds and other sediment control features. Ditches are excavated with a berm placed on the downhill side of the ditch and should pass the 100-year, 24-hour storm event without damage or erosion.

Effectiveness Determination: After their construction, engineering staff shall inspect the run-on diversion ditches for compliance with design dimensions, grade, and erosion protection. The SWPPP team will inspect other run-on and runoff collection and diversion ditches annually to ensure they are functioning properly and are stable from excessive erosion.

Sediment Controls

Construction of sediment traps, silt fences, catch basins and sediment settling ponds reduce the velocity of flowing water and allow sediment in water to settle out in a controlled manner. To the extent possible, these features are located off areas of seleniferous overburden. Sediment ponds are designed to contain the runoff and sediment from the 100-year, 24-hour storm event. Maintenance of the ponds would be done to provide the design capacity for sediment and water at all times. Management of these controls includes periodic repairs and cleaning to remove sediment and restore capacity or functionality.

Effectiveness Determination: Environmental staff shall inspect all ponds as conditions allow on a monthly basis. The SWPPP team shall annually inspect the entire perimeter of active and reclaimed mining areas to ensure that runoff from disturbed areas is directed to sediment ponds or silt traps. These inspections are documented in the SWPPP records. An annual storm water evaluation report will be prepared by Simplot Corporate personnel.

Seeding and Revegetation (Reclamation and Revegetation)

Revegetation of disturbed slopes reduces run-off quantity and velocity that would otherwise contribute to runoff volumes. As soon as practicable, disturbed areas would be graded, topsoiled and reseeded with techniques and seed mix that are acceptable to the USFS. Infiltration is also reduced as plants consume water, which leads to transpiration.

Effectiveness Determination: Engineering staff shall obtain the proper seed mix according to USFS recommendations. Production staff will inspect reclaimed areas to ensure appropriate seeding coverage and that seed drilling techniques were used.

Range Management

Livestock grazing in reclaimed areas should be controlled until the reclaimed areas have become stabilized and are deemed ready for grazing by Simplot and the USFS. The USFS is responsible for ensuring appropriate alignment of grazing allotments.

Effectiveness Determination: Environmental staff shall conduct routine inspections of reclaimed areas. The presence of livestock will be documented by mine personnel and reported in the annual environmental monitoring report to the USFS and BLM.

Avoid Perennial Drainage Channels

Avoiding placement of mine overburden in perennial drainage channels helps reduce infiltration of stream flow into the overburden. Permanent placement of seleniferous overburden material in perennial channels should be avoided, but crossing drainages with temporary road fills is required to access the mining areas. These crossings would be built from chert and designed so they can be reshaped during reclamation to resemble the surrounding area.

Effectiveness Determination: Engineering staff shall review the annual operations report information to ensure that placement of seleniferous mine overburden in perennial channels is avoided.

Avoid Ephemeral Drainage Channels

Avoidance of ephemeral and intermittent drainage channels in the location of seleniferous overburden disposal sites reduces the effects of infiltration on the overburden. Mine panels and their external overburden disposal sites that are located on drainage divides can avoid most ephemeral drainage channels. Ephemeral channels that cross the proposed mine disturbance would be collected and diverted in ditches around the active mining area. Permanent placement of seleniferous overburden material in ephemeral drainages should also be avoided to the extent practicable. Road crossings should be built from non-seleniferous material and designed so they can be reshaped to resemble the surrounding area.

Effectiveness Determination: Engineering staff shall review the annual operations report information to ensure that placement of seleniferous overburden in ephemeral drainages is avoided to the extent practicable. When road fills are constructed over ephemeral drainages, Production staff shall ensure they are built with non-seleniferous material.

Characterization and Selective Handling of Seleniferous Overburden

Geochemical assays, extraction tests, and column leach tests on Phosphoria Formation rocks at the Smoky Canyon Mine have demonstrated that the Meade Peak member shales have interbedded intervals of high to low selenium content. For the purpose of proper application of these BMPs, the mine considers all shale overburden from the stratigraphic interval extending from the Hanging Wall Mudstone to the Fish scale Shale to be seleniferous overburden. Rex Chert (including limestone) has been demonstrated by testing to be essentially non-seleniferous. Seleniferous overburden should be placed in approved pit backfills and external dumps and then capped with non-seleniferous materials.

Effectiveness Determination: Production staff shall track the origin and placement of overburden materials. Environmental staff shall verify with periodic testing or visual inspections during mining that overburden materials have been properly handled. Determinations will be verified by reviewing assay data.

Modification or Elimination of Low Permeability Foundation Material

Low permeability layers of soil or shale in foundations of external overburden disposal area slopes should be modified or removed to avoid the perching of water to prevent seeps at the face of external overburden disposal sites. Low permeability horizons in topsoil and subsoil under specific areas of overburden fills should be removed during topsoil stripping.

Effectiveness Determination: Engineering staff shall inspect foundation areas of external overburden fill slopes to ensure low permeability soil is removed to the extent practicable. Environmental staff will annually inspect the entire perimeter of all down gradient toes of external overburden fills in early summer looking for evidence of overburden seeps or springs.

Control of Groundwater Impacts

Where groundwater quality impacts are predicted from infiltration of seepage from seleniferous overburden fills, control of these impacts has been investigated. Groundwater monitoring should be done according to agency-approved monitoring plans.

Effectiveness Determination: Environmental and Engineering staff shall oversee installation of groundwater monitoring devices in compliance with approved monitoring plans. Environmental staff shall oversee collection of monitoring data from the groundwater monitoring system in accordance with approved monitoring plans and review groundwater monitoring data for compliance with applicable standards. Monitoring data will be submitted to regulatory agencies according to approved monitoring plans.

Permanent Drainage Channels over Overburden

Where drainage channels must be permanently routed over overburden fills there is a concern for potential future erosion of the channel into underlying overburden and that seepage from the channels will enter the underlying overburden and potentially leach contaminants of potential concern from the overburden. Such channels should be designed to be stable without damage for the peak flow from the 100-year, 24-hour storm on top of snowmelt. To prevent seepage into underlying seleniferous overburden, the a clay liner should be installed under the channel or the overburden directly underlying the channel bottom and for a distance of 50 feet on either side of the channel should consist of chert or other non-seleniferous overburden. The channel surface should be protected from erosion with chert riprap.

Effectiveness Determination: Production staff will monitor pit backfills and external overburden fills during construction to verify that the proper material is placed under the alignment of any proposed permanent channels over these areas. Environmental staff will verify with photographs that a clay liner or chert is placed under the channels and that the channels are protected from erosion with riprap and vegetation.

Sediment Controls around Overburden Disposal Sites

Water-retaining features designed to control runoff and sedimentation at mine sites, including sediment ponds and silt traps should be located off seleniferous overburden fills.

Effectiveness Determination: Environmental staff shall inspect all ponds as conditions allow on a monthly basis. The SWPPP team shall annually inspect the entire perimeter of active and reclaimed mining areas to ensure that runoff from disturbed areas is directed to sediment ponds or silt traps. These inspections are documented in the SWPPP records. An annual storm water evaluation report will be prepared by Simplot Corporate personnel.

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Appendix 3A
Water Resources

Historic Stream Flow Measurement Summary
and
2003 and 2004 Stream Flow Measurement Data

Historic Stream Flow Measurement Summary – South Fork Sage Creek

LOCATION	DATA REFERENCE	PERIOD OF RECORD	SPRING SEASON RANGE (cfs) (# of values)	FALL SEASON RANGE (cfs) (# of values)
Upper South Fork Sage Creek	TRC Mariah (2001)	1992-2000	0.0-16.6 (8)	0-0.52 (6)
	Montgomery Watson (1999, 2000)	1998, spring 2000	4.6-5.0 (2)	0.16 (1)
	Maxim (2001)	2000	0.53 (1)	0.0 (1)
Lower South Fork Sage Creek	TRC Mariah (2001)	1992-2000	4.8-37.6 (7)	4.4-14.5 (8)
	Montgomery Watson (1999, 2000)	1998, spring 2000	19.3 (1)	7.0 (1)
	Maxim (2001)	2000	6.97 (1)	6.33 (1)

2003 and 2004 Streamflow Measurement Data (cfs) – Mainstem Deer Creek

STATION ID	MAY-JUNE 2002	AUG-SEPT 2002	MAY 2003	JULY 2003	AUG 2003	OCT 2003	FEB 2004	MAY 2004	JUNE 2004	AUG 2004
SW-DC-200	----	----	1.16	----	0.03	Flowing	----	0.39	0.14	0.04
SW-DC-300	1.49	Dry	7.23	----	Dry	Dry	----	2.33	-----	Dry
SW-DC-400	5.94	Dry	7.22	----	Dry	Dry	----	2.68	-----	Dry
SW-DC-500	6.28	----	9.26	----	0.35	0.15	----	3.79	-----	0.49
SW-DC-800	----	----	9.67	2.76	1.68	1.52	1.25	5.4	6.76	1.89

Summary of Surface Water Data

TABLE A-1
SUMMARY OF SURFACE WATER DATA
FIELD MEASUREMENTS AND PHYSICAL PARAMETERS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Flow (cfs)	Temp. (C)	Field pH	Lab pH	Field Conductivity (umhos/cm)	Lab Conductivity (umhos/cm)	Field ORP (mV)	Field DO (mg/L)	Field Turbidity (NTU)	Lab Turbidity (NTU)	Total Dis-solved Solids (mg/L)	Total Sus-pended Solids (mg/L)	Oil Grease (mg/L)
IDAHO DEQ Standards**			**22**	**6.5 - 9.0**	**6.5 - 9.0**	**NE**	**NE**	**NE**	**6.0**	**50**	**50**	**NE**	**NE**	**NE**
CROW CREEK														
SW-CC-50	7/29/2003	0.82	20.2	8.44	--	437	356	153	12.25	3.4	--	252	7	--
SW-CC-50	5/19/2004	1.57	13.54	6.88	8.39	457	e% 432	144	9.79	U 185	H 1.42	283	e <5	--
SW-CC-50	8/24/2004	0.91	13.7	8.38	8.36	449	451	158	5.1	2.99	H 1.55	H 241	H <5	--
SW-CC-100	8/15/2003	1.84	15.8	8.36	8.39	324	416	-39	6.91	1	0.424	226	5	--
SW-CC-100	10/29/2003	10.8	6	8.3	8.3	264	436	63	10.3	--	0.881	222	6	--
SW-CC-100	5/19/2004	10.025	14.78	6.99	8.44	424	e% 408	153	10.49	U 168	H 1.22	268	e <5	--
SW-CC-100	8/24/2004	2.1	11.6	8.31	8.37	440	440	154	9.01	1	H 0.479	H 230	H <5	--
SW-CC-300	5/20/2003	29.33	15	8.51	8.7	453	527	84	9.1	0	qe% 3.2	288	e 7	--
SW-CC-300	7/29/2003	8.51	12.6	8.38	--	625	486	171	10.8	0.77	--	352	<5	--
SW-CC-300	8/12/2003	10.37	19.17	8.41	8.59	532	570	128	10.08	--	Hqe% 1.27	e% 292	<5	--
SW-CC-300	5/19/2004	16.81	8.85	6.55	8.31	529	e% 496	205	11.25	U 91	H 0.971	293	e 5	--
SW-CC-300	8/24/2004	12.1	13.6	8.58	8.45	653	651	153	10.45	1.74	H 0.391	H 335	H <5	--
SW-CC-800	5/20/2003	54.23	15.5	8.59	8.9	516	590	125	11.5	6.4	qe% 3.4	333	e 9	--
SW-CC-800	8/15/2003	24.59	21.4	8.71	8.67	443	560	58	7.8	1	0.974	308	5	--
SW-CC-800	5/19/2004	28.93	9	6.28	8.38	650	e% 370	201	10.75	U 3.8	H 2.09	372	e <5	--
SW-CC-800	8/24/2004	30.4	15	8.81	1.36	638	32700	188	5.1	1.64	H 0.216	H 350	H 20	--
SP-UTCC-50	7/29/2003	0.065	14.7	7.95	--	379	286	174	7.43	0.79	--	233	<5	--
SP-RIEDE	7/30/2003	No Flow	11.3	7.92	--	424	353	92	8.8	--	--	237	<5	--
SP-BOOKS	6/5/2003	--	--	--	7.6	--	498	--	--	--	1.1	264	11	--
SP-BOOKS	7/30/2003	1.74	14.5	7.88	--	441	392	105	8.9	1.31	--	218	<5	--
SP-BOOKS	8/14/2003	2.91	13.85	7.73	8.35	400	430	-5	11.51	--	Hqe% 0.596	He% 207	<5	--
SP-BOOKS	5/19/2004	2.36	12.4	6.7	8.07	465	e% 445	130	11.03	U 182	H 0.212	261	e <5	--
SP-BOOKS	8/24/2004	1.95	12.2	8.11	8.2	463	460	195	8.48	0.5	H 0.352	H 232	H <5	--
SP-CC-500	7/30/2003	0.003	14	8.13	--	629	536	93	8.24	2.46	--	392	7	--

TABLE A-1
SUMMARY OF SURFACE WATER DATA
FIELD MEASUREMENTS AND PHYSICAL PARAMETERS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Flow (cfs)	Temp. (C)	Field pH	Lab pH	Field Conductivity (umhos/cm)	Lab Conductivity (umhos/cm)	Field ORP (mV)	Field DO (mg/L)	Field Turbidity (NTU)	Lab Turbidity (NTU)	Total Dis-solved Solids (mg/L)	Total Sus-pended Solids (mg/L)	Oil Grease (mg/L)
IDAHO DEQ Standards**			**22**	**6.5 - 9.0**	**6.5 - 9.0**	**NE**	**NE**	**NE**	**6.0**	**50**	**50**	**NE**	**NE**	**NE**
SP-QH-800	10/30/2003	0.0038	1.89	8.24	8.16	270	392	12	10.1	--	Hq 0.746	258	62	--
SOUTH FORK SAGE CREEK														
SW-SFSC-200	5/20/2003	2.6	2.2	6.69	7.5	71	64	--	8.8	3.7	qe% 2.4	49	e 6	--
SW-SFSC-200	8/12/2003	0.0067	11.3	8.2	8.23	286	359	3	7	0	0.142	H 178	<5	--
SW-SFSC-500	5/20/2002	3.78	8	7.7	8.3	140	214	--	10.4	3	1.4	125	8	--
SW-SFSC-500	8/12/2003	0.0089	11.4	8.42	8.41	281	348	-39	6.43	0	H 0.184	H 144	<5	--
SW-SFSC-800	8/12/2003	5.78	11.5	7.54	7.88	311	400	10	6.57	0	H 0.386	H 198	<5	<25
SW-SFSC-800	5/18/2004	5	11.65	6.55	8.29	362	408	83	6.8	U 677	H 0.512	221	<5	--
SP-UTSFSC-100	5/21/2002	0.01	2	8.3	8.4	320	394	--	9.8	4	0.13	228	8	--
SP-UTSFSC-100	8/6/2002	0.001	14	7.7	8.5	290	397	--	7	0	0.8	220	e% 7	--
SP-UTSFSC-100	5/20/2003	0.02	2.7	8.1	8.3	340	434	119	10.4	0.6	qe% 0.4	238	e <4	--
SP-UTSFSC-100	8/12/2003	0.006	13.25	7.7	8.04	352	426	157	6.9	--	Hqe% 33	e% 209	70	--
SP-SFSC-100	10/28/2003	0.01	4	7.7	8.04	168	299	10	5.5	--	He% 0.737	152	e% <5	--
SP-UTSFSC-200	9/23/2002	0.002	4	7.3	7.7	220	358	180	8.3	7.9	29	231	36	--
SP-UTSFSC-200	5/20/2003	0.02	3.4	7.36	7.9	376	445	97	10.1	3.6	qe% 2	252	e 19	--
SP-UTSFSC-200	8/12/2003	0.012	10.63	7.63	8.08	382	454	174	8.14	--	Hqe% 2.88	e% 223	13	--
SP-UTSFSC-200	10/29/2003	0.0014	6	7.9	8.09	300	490	--	7.6	1	0.572	237	<5	--
SP-SFSC-750	7/28/2003	3.88	11.4	7.4	--	370	281	187	6.4	0.7	--	221	<5	--
SP-SFSC-750	8/12/2003	4.39	11.4	7.49	7.83	297	394	33	5.85	0	H 0.182	H 198	<5	--
SP-HOOPES	7/28/2003	4.508	11.8	7.36	--	447	333	178	5.53	0.16	--	276	<5	--
SP-UTSC-850	5/18/2004	0.0007	14.09	6.62	8.05	410	461	58	5.87	U 27.4	H 2.26	245	7	--
MANNING CREEK														
SP-MC-300	5/21/2002	0.16	4	8	8.2	310	417	--	9.9	1	2.3	243	8	--
SP-MC-300	5/20/2003	0.01	5.9	7.58	7.9	337	398	117	9.3	1.5	qe% 0.93	216	e 4	--
SP-MC-300	8/25/2004	0.006	6.1	7.8	8.25	386	416	209	8.34	87.6	H 6.58	H 212	H 235	--

TABLE A-1
SUMMARY OF SURFACE WATER DATA
FIELD MEASUREMENTS AND PHYSICAL PARAMETERS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Flow (cfs)	Temp. (C)	Field pH	Lab pH	Field Conductivity (umhos/cm)	Lab Conductivity (umhos/cm)	Field ORP (mV)	Field DO (mg/L)	Field Turbidity (NTU)	Lab Turbidity (NTU)	Total Dis-solved Solids (mg/L)	Total Sus-pended Solids (mg/L)	Oil Grease (mg/L)
IDAHO DEQ Standards**			**22**	**6.5 - 9.0**	**6.5 - 9.0**	**NE**	**NE**	**NE**	**6.0**	**50**	**50**	**NE**	**NE**	**NE**
DEER CREEK														
SW-DC-200	5/18/2003	1.16	7	8.66	8.2	184	257	62	11.8	9	e% 1.3	154	e% 4	--
SW-DC-200	8/14/2003	0.028	7.95	7.65	8.1	296	368	137	8.67	--	Hqe% 0.168	e% 195	<5	--
SW-DC-200	5/20/2004	0.394	5.09	6.55	8.24	307	e% 291	118	10.68	U 123	0.476	156	e <5	--
SW-DC-200	8/25/2004	0.04	9.12	8.2	8.27	361	357	172	5.64	4.6	H 0.737	170	<5	--
SW-DC-300	5/22/2002	1.49	--	--	8.6	--	305	--	--	--	2.5	182	6	--
SW-DC-300	5/19/2003	7.23	4.2	8.61	8.5	231	290	78	12.5	6.4	e% 2	167	e% 13	--
SW-DC-400	5/22/2002	5.94	--	--	8.3	--	292	--	--	--	2	132	7	--
SW-DC-400	5/19/2003	7.22	7.9	8.31	8.4	224	275	115	10.7	3.8	e% 1.7	189	e% 6	--
SW-DC-400	5/17/2004	2.677	8	6.51	8.36	298	327	166	6.65	U 166	H 0.504	162	<5	--
SW-DC-500	5/23/2002	6.28	--	--	8.4	--	315	--	--	--	0.9	153	4	--
SW-DC-500	8/7/2002	--	--	--	8.6	--	372	--	--	--	2.9	213	e% 5	--
SW-DC-500	5/19/2003	9.26	8.8	9.3	8.5	224	300	--	11.8	--	e% 1.6	185	e% 6	6
SW-DC-500	8/13/2003	0.35	18.9	8.32	8.5	305	382	105	6.67	8	H 8.87	H 164	19	--
SW-DC-500	10/28/2003	0.15	9	8.3	8.41	290	394	--	8.4	3	He% 0.671	208	e% <5	--
SW-DC-500	5/17/2004	3.79	7.48	6.49	8.43	321	354	212	7.01	U 57.1	H 2.8	239	<5	--
SW-DC-500	8/26/2004	0.49	9.1	8.46	8.41	376	393	167	8.3	4.6	H 1.04	217	12	--
SW-DC-800	5/19/2003	9.67	12.2	8.5	8.6	273	326	85	9.4	5.1	e% 1	209	e% 17	--
SW-DC-800	7/29/2003	2.76	12.6	8.15	--	378	306	178	10.7	1.13	--	194	<5	--
SW-DC-800	8/12/2003	1.68	17.52	8.51	8.57	270	376	112	9.32	--	Hqe% 0.339	e% 214	<5	--
SW-DC-800	10/30/2003	1.52	2.36	8.3	8.34	234	456	58	12.4	--	Hq 25.7	170	6	--
SW-DC-800	5/19/2004	5.397	8.12	6.56	8.32	373	e% 349	172	10.3	U 250	H 0.411	205	e <5	--
SW-DC-800	8/24/2004	1.89	11.8	8.71	8.41	380	384	182	9.1	1.77	H 0.401	H 166	H <5	--
SP-DC-100	10/29/2003	0.0044	5	7.7	7.94	240	336	--	5.3	--	0.189	188	<5	--
SP-DC-350	8/8/2002	0.01	--	--	8.6	--	294	--	--	--	0.21	178	e% <5	--

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PANELS F AND G
BASELINE STUDY

Site	Sample Date	Flow (cfs)	Temp. (C)	Field pH	Lab pH	Field Conductivity (umhos/cm)	Lab Conductivity (umhos/cm)	Field ORP (mV)	Field DO (mg/L)	Field Turbidity (NTU)	Lab Turbidity (NTU)	Total Dis-solved Solids (mg/L)	Total Sus-pended Solids (mg/L)	Oil Grease (mg/L)
IDAHO DEQ Standards**			**22**	**6.5 - 9.0**	**6.5 - 9.0**	**NE**	**NE**	**NE**	**6.0**	**50**	**50**	**NE**	**NE**	**NE**
SP-DC-350	5/19/2003	0.61	4.7	7.62	7.9	113	159	102	10.7	2	e% 1.9	101	e% 1	--
SP-DC-350	8/13/2003	0.038	5.35	7.26	7.95	238	305	196	11.6	--	Hqe% 0.15	e% 159	<5	--
SP-DC-350	5/17/2004	0.243	5.43	6.2	8	203	229	154	6	U 218	H 0.891	132	<5	--
SP-DC-350	8/25/2004	0.013	6.5	8.04	8.26	280	300	219	9.91	6.46	H 0.734	186	21	--
SP-UTDC-700	5/19/2003	0.003	--	--	7.7	--	138	--	--	--	e% 0.43	114	e% 5	--
SP-UTDC-700	8/14/2003	No Flow	15.7	6.56	7.97	183	221	-153	5.24	1	Hqe% 51.4	e% 131	156	--
SP-UTDC-700	10/28/2003	0.002	--	7.1	7.46	109	232	12	4.7	--	He% 86.1	134	e% 109	--
SP-UTDC-700	5/17/2004	0.0036	4.65	6.28	8.2	376	392	168	8.57	U 228	H 8.21	218	20	--
SP-UTDC-700	8/26/2004	0.0015	6.1	8.45	8.23	460	464	221	7.8	79.8	H 0.376	250	38	--
SP-UTDC-800	9/25/2002	0.001	--	--	7.4	--	382	--	--	--	22	285	54	--
SP-UTDC-800	5/19/2003	0.003	2.9	7.46	7.7	189	257	118	13.1	1.3	e% 1.1	153	e% <1	--
SP-UTDC-800	8/13/2003	0.0001	5.47	7.31	7.89	392	377	176	9.7	--	Hqe% 0.432	e% 259	<5	--
SP-UTDC-800	10/28/2003	0.0014	7	7.5	8.01	296	488	16	6.7	--	He% 20.6	270	e% 61	--
SP-UTDC-800	5/17/2004	0.0044	9.74	6.51	7.88	176	179	120	7.32	U 334	H 21.6	88	76	--
NORTH FORK DEER CREEK														
SW-NFDC-200	5/19/2003	0.33	6.9	9.59	8.3	241	347	52	12.2	0	e% 0.86	213	e% 3	--
SW-NFDC-500	5/22/2002	1.49	3	8.5	8.4	280	365	--	8.2	0	0.5	174	<4	--
SW-NFDC-500	8/7/2002	0.55	12	7.5	8.7	260	360	34	7.9	3	2.9	203	e% 5	--
SW-NFDC-500	5/19/2003	2.36	6.2	9.23	8.4	258	357	43	13	11	e% 1.2	226	e% 8	--
SW-NFDC-500	8/13/2003	0.34	11.9	8.04	8.15	296	379	68	6.99	2	H 0.804	H 187	6	--
SW-NFDC-500	10/28/2003	0.148	7	7.8	8.13	280	386	--	7.8	3	He% 1.22	206	e% 9	--
SW-NFDC-900	6/18/2002	1.47	--	--	8.5	--	337	--	--	--	2.8	209	8	--
SW-NFDC-900	8/7/2002	0.43	12	7.8	8.6	270	368	118	8.3	1	3.3	218	e% 10	--
SW-NFDC-900	5/19/2003	2.53	4.1	9.14	8.4	264	361	8	14.6	11	e% 3.1	217	e% 26	--
SW-NFDC-900	8/13/2003	0.43	17.4	8.31	8.47	303	387	127	7.43	5	H 1.69	H 206	<5	--

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FIELD MEASUREMENTS AND PHYSICAL PARAMETERS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Flow (cfs)	Temp. (C)	Field pH	Lab pH	Field Conductivity (umhos/cm)	Lab Conductivity (umhos/cm)	Field ORP (mV)	Field DO (mg/L)	Field Turbidity (NTU)	Lab Turbidity (NTU)	Total Dis-solved Solids (mg/L)	Total Sus-pended Solids (mg/L)	Oil Grease (mg/L)
IDAHO DEQ Standards**			**22**	**6.5 - 9.0**	**6.5 - 9.0**	**NE**	**NE**	**NE**	**6.0**	**50**	**50**	**NE**	**NE**	**NE**
SW-NFDC-900	10/28/2003	0.28	9	8.2	8.29	290	414	--	8.1	3	He% 0.457	216	e% <5	--
SW-UTNFDC-510	9/24/2002	0.001	--	--	8.5	--	377	--	--	--	2.9	192	6	--
SW-UTNFDC-510	5/19/2003	0.16	5.1	9.54	8.5	302	421	67	12.3	0	e% 0.6	233	e% 6	--
SW-UTNFDC-510	8/13/2003	0.011	10.2	8.13	8.29	304	438	-9	7.48	5	H 1.63	H 223	10	--
SW-UTNFDC-700	9/23/2002	0.05	8	7.6	7.4	230	251	202	8.4	6	26	121	5	--
SW-UTNFDC-700	5/19/2003	0.12	5.4	9.51	8.5	237	332	58	13.1	12	e% 1.3	207	e% 10	--
SW-UTNFDC-700	8/13/2003	0.12	7.7	8.33	8.33	273	345	10	10.2	1	H 0.238	H 168	<5	--
SW-UTNFDC-700	10/28/2003	0.049	5	7.7	--	250	--	--	8.4	3	--	--	--	--
SW-UTNFDC-800	9/23/2002	0.009	13	8	8.4	260	342	205	7.1	9	0.56	196	3	--
SW-UTNFDC-900	9/23/2002	0.011	9	8.3	8.4	210	226	194	4.8	1	1.2	159	4	--
SW-UTNFDC-950	9/23/2002	0.009	10	7.5	8.2	390	304	198	7.1	10	3.3	179	69	--
SP-NFDC-50	10/29/2003	0.0012	5	7.7	7.91	310	434	--	5.8	--	0.357	239	<5	--
SP-NFDC-700	6/18/2002	0.11	--	--	7.8	--	404	--	--	--	<0.2	264	<4	--
SP-NFDC-700	8/7/2002	0.25	15	7.8	8.6	270	442	69	7.5	1	0.18	239	e% <5	--
SP-NFDC-700	5/19/2003	0.2	5.8	8.45	7.8	285	411	27	9	0	e% 0.33	258	e% 1	--
SP-NFDC-700	8/13/2003	0.024	8.5	7.43	7.76	353	435	30	4.3	1	H 0.139	H 222	<5	--
SP-UTNFDC-400	5/21/2002	0.004	2	8.3	8.2	110	153	--	8.6	5	44	109	52	--
SP-UTNFDC-400	5/20/2003	0.02	4.7	8.47	8	124	165	--	10.1	0	qe% 4.2	103	e 10	--
SP-UTNFDC-510	9/24/2002	--	8	7.8	--	250	--	198	7.9	6	--	--	--	--
SP-UTNFDC-520	9/24/2002	0.003	10	7	7.1	280	364	237	3.7	2	1.6	JH 205	63	--
SP-UTNFDC-520	5/19/2003	0.04	5.5	8.65	7.9	282	436	120	11.7	0	e% 0.66	243	e% 3	--
SP-UTNFDC-520	8/13/2003	0.0045	6	7.45	7.73	327	408	3	6.07	0	H 0.487	H 204	<5	--
SP-UTNFDC-540	8/13/2003	0.0011	--	--	7.92	--	498	--	--	--	H 2.47	H 257	13	--
SP-UTNFDC-540	10/28/2003	0.0004	11	8.3	8.34	250	471	--	6.9	4	He% 2.54	246	e% 18	--
SP-UTNFDC-540	5/17/2004	0.0405	6.56	6.37	8.41	416	463	214	7	U 103	H 0.606	177	<5	--

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IDAHO DEQ Standards**			**22**	**6.5 - 9.0**	**6.5 - 9.0**	**NE**	**NE**	**NE**	**6.0**	**50**	**50**	**NE**	**NE**	**NE**
SP-UTNFDC-600	8/6/2002	0.001	23	7.9	8.4	310	404	85	5.5	5	12	261	e% 32	--
SP-UTNFDC-600	5/20/2003	0.01	5.2	8.81	8.1	268	382	--	10.6	0	qe% 0.83	221	e 6	--
SP-UTNFDC-600	8/14/2003	0.0022	15.4	7.92	8.06	347	434	-59	6.86	2	Hqe% 2.55	e% 232	11	--
SP-UTNFDC-600	10/29/2003	0.0003	7	7.5	8.19	346	573	68	7.4	--	0.755	308	5	--
SP-UTNFDC-600	5/18/2004	0.0144	8.55	6.51	8.18	367	410	90	7.1	U 86	H 4.95	235	11	--
SP-UTNFDC-600	8/25/2004	0.0125	10.7	7.78	8.38	438	494	170	6.55	7.34	H 0.385	H 244	H 21	--
SOUTH FORK DEER CREEK														
SW-SFDC-200	5/18/2003	3.5	6.7	8.62	8.1	194	268	64	11.6	13	e% 6.9	175	e% 21	--
SW-SFDC-200	8/13/2003	0.129	18.7	8.08	8.25	218	276	124	7.61	--	Hqe% 0.802	e% 137	<5	--
SW-SFDC-200	10/28/2003	0.064	7	8.1	8.2	198	341	30	7.9	--	He% 1.71	177	e% <5	--
SW-SFDC-300	5/22/2002	0.21	--	--	8.3	--	284	--	--	--	2.3	138	<4	--
SW-SFDC-300	5/18/2003	0.08	6	8.45	8.2	197	278	68	12.3	5	e% 0.65	168	e% 2	--
SW-SFDC-800	5/23/2002	0.1	6	8.4	8.2	120	158	--	9.9	0	0.4	77	<4	--
SW-SFDC-800	5/19/2003	0.5	5.9	7.99	8.1	89	132	110	10.8	2.2	e% 1.8	97	e% 4	--
SW-SFDC-800	5/17/2004	0.0004	6.15	6.18	8.08	181	200	140	5.86	U 155	H 0.82	100	<5	--
SW-UTSFDC-900	5/19/2003	0.35	5.6	7.86	8.1	78	124	101	10.9	2.8	e% 2.4	87	e% <1	--
SP-UTSFDC-500	5/22/2002	0.002	3	8.2	7.8	100	136	--	9.6	0	1.5	54	<4	--
SP-UTSFDC-600	10/29/2003	No Flow	5	7.8	7.91	310	439	--	2.8	--	0.523	220	<5	--
WELLS CANYON														
SW-WC-800	5/18/2003	0.11	8.8	9.35	8.6	257	359	65	12.7	2	e% 2.5	218	e% 18	--
SW-WC-800	8/12/2003	0.22	15.7	8.36	8.41	308	377	107	8.46	--	Hqe% 8.98	e% 188	16	--
SW-WC-800	10/28/2003	0.18	8	8.2	8.26	280	397	--	7.8	3	He% 2.47	211	e% 5	--
SW-WC-800	5/19/2004	0.194	14.95	6.99	8.49	358	e% 340	125	9.13	U 155	H 0.96	227	e 23	--
SW-WC-800	8/24/2004	0.142	11.3	8.73	8.39	361	364	155	8.6	3.35	H 0.411	H 180	H <5	--
SP-UTWC-300	5/23/2002	0.46	12	6.9	7.4	300	36	--	5.7	5	2.5	22	<6	--

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BASELINE STUDY

Site	Sample Date	Flow (cfs)	Temp. (C)	Field pH	Lab pH	Field Conductivity (umhos/cm)	Lab Conductivity (umhos/cm)	Field ORP (mV)	Field DO (mg/L)	Field Turbidity (NTU)	Lab Turbidity (NTU)	Total Dis-solved Solids (mg/L)	Total Sus-pended Solids (mg/L)	Oil Grease (mg/L)
IDAHO DEQ Standards**			**22**	**6.5 - 9.0**	**6.5 - 9.0**	**NE**	**NE**	**NE**	**6.0**	**50**	**50**	**NE**	**NE**	**NE**
SP-UTWC-300	5/18/2003	0.005	10.2	7	6.9	26	35	60	7.5	4	e% 7	J 70	e% 4	--
SP-WC-400	5/20/2002	1.82	9	7.9	8.3	210	287	--	9.2	1	4.9	162	12	--
SP-WC-400	8/8/2002	0.002	12	7.9	8.6	260	363	95	6.4	1	11	207	e% 30	--
SP-WC-400	5/18/2003	0.17	5	7.95	7.4	212	289	81	9.1	0	e% 1.6	184	e% 4	--
SP-WC-400	8/13/2003	0.088	15	7.93	8.02	298	368	113	6.6	--	Hqe% 15.8	e% 200	31	--
SP-WC-400	10/28/2003	0.015	7	7.9	8.11	223	377	25	7	--	He% 4.53	207	e% 20	--
SP-WC-400	5/17/2004	0.022	8.94	6.39	8.25	301	340	162	6.32	U 160	H 3.31	175	<5	--
SP-WC-400	8/25/2004	0.013	9.6	7.8	8.33	339	353	170	8.2	4.39	H 3.76	196	122	--
SP-WC-750	6/5/2003	--	--	--	7.7	--	375	--	--	--	<0.2	210	<5	--
SP-WC-750	7/29/2003	0.126	10	7.74	--	365	304	160	7.92	0.33	--	207	<5	--
SP-WC-750	8/14/2003	0.027	8	7.35	7.74	283	356	-29	6.37	6	Hqe% 0.181	e% 175	<5	--
DIAMOND CREEK														
SW-DMC-200	5/18/2003	0.52	4.8	8.08	7.8	84	113	55	19.6	52	e% 12	100	e% 11	--
SW-DMC-200	8/14/2003	0.009	8.9	7.9	8.2	227	287	136	9.71	--	Hqe% 0.264	e% 183	<5	--
STEWART CANYON														
SW-ST-500	8/15/2003	0.093	11.6	8.24	8.35	267	336	-23	5.94	3	0.257	162	5	--
SW-ST-500	5/18/2004	0.32	10.59	6.75	8.35	240	271	54	6.7	U 302	H 2.87	142	<5	--
SW-ST-500	8/26/2004	0.15	8.5	7.4	8.37	330	333	179	9.68	5.26	H 0.431	170	10	--
SW-ST-700	8/26/2004	2.7	12.8	8.37	8.41	287	288	170	16.4	1.24	H 0.424	190	<5	--
SP-ST-100	8/15/2003	0.999	7.3	7.41	7.87	278	363	-44	5.86	3	0.117	182	5	--
SP-ST-100	5/18/2004	3.81	7.18	6.35	7.88	330	371	143	6.47	U 159	H 0.351	223	<5	--
SP-ST-100	8/26/2004	4.2	6.9	7.88	8.27	347	349	200	8.64	0.24	H 0.203	170	<5	--
SP-ST-200	8/15/2003	0.033	6.8	7.35	7.86	282	358	-13	6.52	10	0.103	184	5	--
SP-ST-200	5/18/2004	0.051	6.45	6.32	8.09	337	379	127	6.6	U 165	H 0.426	208	<5	--
SP-ST-200	8/26/2004	0.05	7.6	8.37	8.3	347	351	206	13.28	0.77	H 0.193	183	<5	--

TABLE A-1
SUMMARY OF SURFACE WATER DATA
FIELD MEASUREMENTS AND PHYSICAL PARAMETERS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Flow (cfs)	Temp. (C)	Field pH	Lab pH	Field Conductivity (umhos/cm)	Lab Conductivity (umhos/cm)	Field ORP (mV)	Field DO (mg/L)	Field Turbidity (NTU)	Lab Turbidity (NTU)	Total Dis-solved Solids (mg/L)	Total Sus-pended Solids (mg/L)	Oil Grease (mg/L)
IDAHO DEQ Standards**			**22**	**6.5 - 9.0**	**6.5 - 9.0**	**NE**	**NE**	**NE**	**6.0**	**50**	**50**	**NE**	**NE**	**NE**
LAMB CANYON														
SW-LC-500	8/15/2003	0.45	8.4	8.35	8.35	311	393	-8	6.98	4	2.68	221	10	--
CLEAR CREEK														
SW-CL-800	7/29/2003	0.279	14.3	8.25	--	411	320	150	10.45	0.69	--	232	<5	--
WHITE DUGWAY CREEK														
SW-WD-800	7/29/2003	0.182	25.2	8.8	--	1075	835	127	11.5	2.13	--	610	<5	--
WARM CREEK														
SW-WM-800	7/30/2003	0.26	23.5	8.2	--	546	455	91	11.21	2.93	--	320	<5	--

Notes:

<	Indicates analyte not detected above laboratory practical quantification limit (PQL)
--	Field data or laboratory samples were not collected or analyzed
(mg/L)	Milligrams per liter
C	Degrees centigrade
cfs	Cubic feet per second
(umhos/cm)	Micromhos per centimeter
ORP	Oxygen reduction potential
(mV)	Millivolts
DO	Dissolved oxygen
(NTU)	Nephelometric Turbidity Unit
J	Estimated value (Northern Analytical)
e	Field duplicate results exceed acceptable limits - PQL based determination.
e%	Field duplicate results exceed acceptable limits - relative percent difference determinat
H	Sample analyzed out of holding time.
q	Associated values are estimates - field blank showed evidence of contamination.
NE	Not Established
U	Field observations indicate low turbidity (clear) water
**	The surface water standards are from IDAPA 58.01.02.250.
	Shading indicates results above Idaho DEQ Standards.

The SP-UTDC-700 sample collected on 8/14/03 was from a pond with increased turbidity during sample collection due to disturbance of bottom sediment.
Sample SW-CC-800 collected on 8/24/04 was received by laboratory improperly preserved for non-metals analysis.
Sample SP-MC-300 collected on 8/8/25/04 exhibited increased turbidity during sample collection due to disturbance of bottom sediment.

TABLE A-2
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR MAJOR IONS AND NUTRIENTS
PANELS F AND G
BASELINE STUDY

Site		Sample Date	Acidity (mg/L)	Alkalinity Bicarbonate (mg/L)	Alkalinity Carbonate (mg/L)	Alkalinity Total (mg/L)	Ammonia Undistilled (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride Undistilled (mg/L)	Hardness (mg/L)	Magnesium (mg/L)	Nitrate and Nitrite (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Phosphorous Ortho (mg/L)	Phosphorous Total (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)
IDAHO DEQ Standards**			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
CROW CREEK																				
SW-CC-50	N	7/29/2003	--	222	--	236	--	N 67.2	7.3	0.149	79.7	15.3	--	--	--	--	--	1.03	11.8	19
SW-CC-50	N	5/19/2004	--	228	e 7.5	236	--	65.2	6.18	0.148	219	13.7	--	--	--	--	--	0.662	11	24.2
SW-CC-50	N	8/24/2004	--	231	--	240	--	64.4	e 7.83	0.169	222	14.8	--	--	--	--	--	1.07	11.2	22.4
SW-CC-100	N	8/15/2003	--	189	9.38	199	0.01	54.1	10.9	0.198	197	15	0.03	--	--	0.03	0.05	B 0.84	11	11.5
SW-CC-100	N	10/29/2003	--	199	<1	199	<0.01	60.2	13.2	0.16	211	14.8	<0.02	--	--	<0.01	e 0.02	e% 1.11	10.8	12.1
SW-CC-100	D	10/29/2003	--	198	1.26	200	<0.01	55.4	13.4	0.165	200	15	<0.02	--	--	<0.01	0.04	B 0.907	11	12.1
SW-CC-100	N	5/19/2004	--	200	e 7.58	208	--	55.6	14.4	0.199	201	15.1	--	--	--	--	--	0.542	13.2	15.3
SW-CC-100	N	8/24/2004	--	211	--	219	--	55.8	e 18.2	0.224	205	15.9	--	--	--	--	--	0.744	13.7	15.1
SW-CC-300	N	5/20/2003	<2	qe% 258	--	qe% 212	<0.05	59	47	0.11	e% 213	e% 16	<0.05	<0.05	<0.05	0.03	q 0.06	<1	32	e 16
SW-CC-300	N	7/29/2003	--	226	--	233	--	N 63.3	64.3	0.194	232	17.9	--	--	--	--	--	B 0.771	51.6	16.2
SW-CC-300	N	8/12/2003	--	180	17.38	197.5	0.01	q 53	67.4	0.25	q 200	q 16.4	<0.02	--	--	H <0.01	e% <0.01	B 0.817	q 49.4	17.4
SW-CC-300	N	5/19/2004	--	203	e 3.74	207	--	55.9	43.3	0.208	203	15.3	--	--	--	--	--	0.562	30.1	17.1
SW-CC-300	N	8/24/2004	--	225	--	237	--	58.2	e 73.6	0.229	213	16.5	--	--	--	--	--	0.91	52.7	18.8
SW-CC-800	N	5/20/2003	<2	qe% 210	9	qe% 188	<0.05	59	58	0.18	e% 217	e% 17	<0.05	<0.05	<0.05	0.02	q 0.04	<1	42	e 32
SW-CC-800	N	8/15/2003	--	146	19.2	168	0.01	44.5	56.3	0.255	185	17.8	0.02	--	--	0.01	0.01	1.21	42	39
SW-CC-800	N	5/19/2004	--	204	e 6.98	211	--	59	70.6	0.263	220	17.7	--	--	--	--	--	0.657	45.5	35.9
SW-CC-800	D	5/19/2004	--	208	4.52	212	--	58.9	71.3	0.265	220	17.7	--	--	--	--	--	0.698	45.6	34.5
SW-CC-800	N	8/24/2004	--	<1	--	<1	--	51.1	e 73.8	0.101	205	18.8	--	--	--	--	--	1.21	51.7	42
SP-UTCC-50	N	7/29/2003	--	193	--	193	--	N 38.7	2.89	0.119	143	11.2	--	--	--	--	--	1.05	30.8	20.9
SP-RIEDE	N	7/30/2003	--	194	--	194	--	N 62.4	13.4	0.24	206	12.2	--	--	--	--	--	1.56	14.9	8.38
SP-BOOKS	N	6/5/2003	<2	301	--	235	<0.05	58	30	0.24	211	16	<0.05	<0.05	<0.05	0.04	0.08	<1	19	<5
SP-BOOKS	N	7/30/2003	--	191	--	191	--	N 49.8	31	0.342	191	16.3	--	--	--	--	--	B 0.692	23.7	8.55
SP-BOOKS	N	8/14/2003	--	168	4.3	172	<0.01	q 49.4	32.9	0.32	q 190	q 16.2	<0.02	--	--	H <0.01	e% <0.01	0.786	q 23.9	7.93
SP-BOOKS	N	5/19/2004	--	200	e <1	200	--	50.2	33	0.353	192	16.3	--	--	--	--	--	0.639	23	8.62
SP-BOOKS	N	8/24/2004	--	205	--	205	--	47.8	e 34.6	0.334	186	16.2	--	--	--	--	--	0.662	22.2	9.02
SP-BOOKS	D	8/24/2004	--	202	--	202	--	48.7	34.3	0.358	189	16.5	--	--	--	--	--	0.689	22.4	9

TABLE A-2
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR MAJOR IONS AND NUTRIENTS
PANELS F AND G
BASELINE STUDY

Site		Sample Date	Acidity (mg/L)	Alkalinity Bicarbonate (mg/L)	Alkalinity Carbonate (mg/L)	Alkalinity Total (mg/L)	Ammonia Undistilled (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride Undistilled (mg/L)	Hardness (mg/L)	Magnesium (mg/L)	Nitrate and Nitrite (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Phosphorous Ortho (mg/L)	Phosphorous Total (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)
IDAHO DEQ Standards**			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
SP-CC-500	N	7/30/2003	--	253	--	253	--	N 77.1	13.7	0.302	291	23.9	--	--	--	--	--	1.55	31.9	99
SP-QH-800	N	10/30/2003	--	226	<1	226	<0.01	q 62.5	5.43	0.167	237	19.6	<0.02	--	--	H 0.06	0.18	q 2.78	q 7.45	12.8
SOUTH FORK SAGE CREEK																				
SW-SFSC-200	N	5/20/2003	<2	qe% 48	--	qe% 39	<0.05	9	<2	<0.1	e% 31	e% 2	0.1	0.1	<0.05	0.04	q 0.05	<1	<1	e <5
SW-SFSC-200	N	8/12/2003	--	197	<1	197	0.03	51.7	0.916	0.112	192	15.2	0.11	--	--	H 0.01	0.02	B 0.607	2.91	7.96
SW-SFSC-500	N	5/20/2002	<2	128	--	105	<0.05	31	<4	0.07	110	8	0.09	0.09	<0.05	0.02	0.04	<1	2	8
SW-SFSC-500	N	8/12/2003	--	179	9.04	188	0.08	50.7	0.909	0.118	188	14.9	0.04	--	--	H 0.02	0.03	B 0.771	3.29	10.4
SW-SFSC-800	N	8/12/2003	--	208	<1	208	0.02	50.6	4.43	0.304	208	19.8	0.13	--	--	H <0.01	<0.01	B 0.852	4.7	13
SW-SFSC-800	N	5/18/2004	--	205	2.64	207	--	48	4.05	0.33	198	18.9	--	--	--	--	--	0.535	4.45	12.4
SP-UTSFSC-100	N	5/21/2002	<2	248	--	203	<0.05	62	<2	0.12	118	19	0.06	0.06	<0.05	0.03	0.04	<1	3	13
SP-UTSFSC-100	N	8/6/2002	<2	264	--	216	<0.05	69	e% <4	0.11	234	15	0.12	0.12	<0.05	0.05	0.1	<1	3	13
SP-UTSFSC-100	N	5/20/2003	<2	qe% 272	--	qe% 223	<0.05	68	<2	0.13	e% 240	e% 17	0.05	0.05	<0.05	0.04	q 0.05	<1	2	e 11
SP-UTSFSC-100	N	8/12/2003	--	236	<1	236	0.03	q 68.4	1.81	0.138	q 236	q 15.9	0.04	--	--	H 0.08	e% 0.18	2.08	q 2.97	10.2
SP-SFSC-100	N	10/28/2003	--	151	<1	151	0.02	41.4	0.916	0.102	152	11.7	0.16	--	--	H <0.01	e% 0.02	B 0.547	3.45	6.17
SP-UTSFSC-200	N	9/23/2002	<2	248	--	203	0.12	70	<4	0.13	257	20	<0.05	<0.05	<0.05	0.01	0.21	<1	5	18
SP-UTSFSC-200	N	5/20/2003	<2	qe% 344	--	qe% 282	<0.05	69	<2	0.12	e% 259	e% 21	<0.05	<0.05	<0.05	0.01	q 0.03	<1	3	e 13
SP-UTSFSC-200	D	5/20/2003	<2	229	--	188	<0.05	63	<2	0.1	211	13	<0.05	<0.05	<0.05	0.02	0.03	<1	3	24
SP-UTSFSC-200	N	8/12/2003	--	249	<1	249	0.02	q 67.5	0.717	0.149	q 250	q 19.9	<0.02	--	--	H <0.01	e% <0.01	B 0.839	q 3.7	13.7
SP-UTSFSC-200	N	10/29/2003	--	242	<1	242	<0.01	65.6	0.737	0.136	243	19.2	<0.02	--	--	H <0.01	e <0.01	Be% 0.87	3.53	13.8
SP-SFSC-750	N	7/28/2003	--	208	--	208	--	N 52.6	4.18	0.314	216	20.6	--	--	--	--	--	B 0.79	4.84	11.8
SP-SFSC-750	N	8/12/2003	--	202	<1	202	0.08	47.3	3.66	0.283	193	18.1	0.14	--	--	H 0.01	0.01	B 0.754	3.96	12.3
SP-SFSC-750	N	9/28/2004	--	220	<1	220	--	49.8	4.58	0.324	207	20	--	--	--	--	--	0.639	4.62	13.6
SP-HOOPES	N	7/28/2003	--	205	--	205	--	N 61.1	7.37	0.402	246	22.8	--	--	--	--	--	B 0.796	7.87	44.8
SP-UTSC-850	N	5/18/2004	--	234	<1	234	--	63.6	2.63	0.257	231	17.5	--	--	--	--	--	0.384	5.39	16.2
SP-UTSC-850	N	9/28/2004	--	203	<1	203	--	46.2	4.7	0.245	181	16	--	--	--	--	--	1.41	5.91	6.02
MANNING CREEK																				
SP-MC-300	N	5/21/2002	<2	261	--	214	0.06	65	<2	0.11	245	20	<0.05	<0.05	<0.05	<0.01	0.02	<1	3	11

TABLE A-2
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR MAJOR IONS AND NUTRIENTS
PANELS F AND G
BASELINE STUDY

Site		Sample Date	Acidity (mg/L)	Alkalinity Bicarbonate (mg/L)	Alkalinity Carbonate (mg/L)	Alkalinity Total (mg/L)	Ammonia Undistilled (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride Undistilled (mg/L)	Hardness (mg/L)	Magnesium (mg/L)	Nitrate and Nitrite (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Phosphorous Ortho (mg/L)	Phosphorous Total (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)
IDAHO DEQ Standards**			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
SP-MC-300	N	5/20/2003	<2	qe% 287	--	qe% 235	<0.05	65	<2	<0.1	e% 228	e% 16	0.06	0.06	<0.05	0.01	q 0.02	<1	3	e 8
SP-MC-300	N	8/25/2004	--	244	--	244	--	89.6	e 1.17	0.147	331	26.1	--	--	--	--	--	8.08	3.16	10.7
DEER CREEK																				
SW-DC-200	N	5/18/2003	<2	186	--	153	e% <0.05	44	2	0.11	147	9	<0.05	<0.05	<0.05	e% 0.1	e% 0.1	<1	2	8
SW-DC-200	N	8/14/2003	--	194	<1	194	<0.1	q 57	0.438	0.153	q 196	q 12.9	<0.02	--	--	H 0.06	e% 0.1	0.636	q 2.78	10.7
SW-DC-200	N	5/20/2004	--	162	e <1	162	--	43.8	0.446	0.159	151	9.99	--	--	--	--	--	0.378	2.14	8.53
SW-DC-200	N	8/25/2004	--	200	--	200	--	53.6	e 0.606	0.179	187	12.8	--	--	--	--	--	0.581	2.49	11.1
SW-DC-300	N	5/22/2002	<2	193	--	158	<0.05	56	<2	0.13	189	12	<0.05	<0.05	<0.05	0.03	**B 0.03	<1	2	8
SW-DC-300	N	5/19/2003	<2	229	--	188	e% <0.05	52	1	<0.1	167	9	<0.05	<0.05	<0.05	e% 0.04	e% 0.07	<1	2	8
SW-DC-400	N	5/22/2002	<2	178	--	146	<0.05	52	<4	0.1	175	11	<0.05	<0.05	<0.05	e 0.06	0.07	<1	2	12
SW-DC-400	N	5/19/2003	<2	158	--	129	e% <0.05	50	1	<0.1	162	9	<0.05	<0.05	<0.05	e% 0.06	e% 0.08	<1	2	8
SW-DC-400	N	5/17/2004	--	164	4.6	169	--	47.7	0.461	0.13	154	8.4	--	--	--	--	--	B 0.26	2.09	7.66
SW-DC-500	N	5/23/2002	<2	198	--	162	<0.05	58	<2	0.1	202	14	<0.05	<0.05	<0.05	e 0.03	0.06	<1	3	10
SW-DC-500	D	5/23/2002	<2	198	--	162	<0.05	59	<2	0.1	205	14	<0.05	<0.05	<0.05	0.05	0.06	<1	3	11
SW-DC-500	N	8/7/2002	<2	239	--	196	0.15	61	e% 2	0.13	222	17	0.07	0.07	<0.05	0.03	0.07	<1	3	14
SW-DC-500	N	5/19/2003	<2	229	--	188	e% 0.18	53	1	<0.1	174	10	<0.05	<0.05	<0.05	e% 0.06	e% 0.07	<1	2	10
SW-DC-500	N	8/13/2003	--	199	12.4	212	0.02	58.1	1	0.149	--	16.6	<0.02	--	--	H 0.03	0.05	B 0.852	3.29	10.8
SW-DC-500	N	10/28/2003	--	201	7.4	208	<0.01	58.3	1.15	0.144	215	16.8	<0.02	--	--	<0.01	e% 0.02	B 0.82	3.38	13.4
SW-DC-500	N	5/17/2004	--	178	8	186	--	51.5	0.875	0.134	175	11.2	--	--	--	--	--	0.425	2.46	8.83
SW-DC-500	N	8/26/2004	--	221	--	231	--	56.9	e 0.916	0.168	212	16.9	--	--	--	--	--	0.72	3.01	11
SW-DC-800	N	5/19/2003	<2	229	--	188	e% <0.05	53	2	<0.1	190	14	<0.05	<0.05	<0.05	e% 0.04	e% 0.07	<1	2	9
SW-DC-800	N	7/29/2003	--	212	--	217	--	N 58.9	1.59	0.146	222	18.2	--	--	--	--	--	B 0.637	2.66	7.18
SW-DC-800	N	8/12/2003	--	194	16.6	211	0.02	q 54.6	1.59	0.141	q 208	q 17.3	<0.02	--	--	H 0.03	e% 0.03	B 0.708	q 2.54	6.83
SW-DC-800	N	10/30/2003	--	199	4.2	204	q 0.04	q 56	1.9	0.116	214	18	<0.02	--	--	H 0.02	0.02	B 0.762	q 2.54	6.56
SW-DC-800	N	5/19/2004	--	211	e 2.38	214	--	54	1.28	0.145	199	15.5	--	--	--	--	--	0.494	2.5	8.86
SW-DC-800	N	8/24/2004	--	212	--	224	--	53.7	e 1.67	0.177	206	17.6	--	--	--	--	--	0.636	2.38	7.58
SP-DC-100	N	10/29/2003	--	157	<1	157	<0.01	46	1.29	0.24	160	10.9	0.08	--	--	0.093	e 0.1	Be% 0.484	2.68	12.5

TABLE A-2
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR MAJOR IONS AND NUTRIENTS
PANELS F AND G
BASELINE STUDY

Site		Sample Date	Acidity (mg/L)	Alkalinity Bicarbonate (mg/L)	Alkalinity Carbonate (mg/L)	Alkalinity Total (mg/L)	Ammonia Undistilled (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride Undistilled (mg/L)	Hardness (mg/L)	Magnesium (mg/L)	Nitrate and Nitrite (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Phosphorous Ortho (mg/L)	Phosphorous Total (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)
IDAHO DEQ Standards**			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
SP-DC-350	N	8/8/2002	<2	171	--	140	<0.05	57	e% <2	0.16	171	7	0.19	0.19	<0.05	0.08	0.17	<1	2	15
SP-DC-350	N	5/19/2003	<2	143	--	118	e% <0.05	30	1	0.15	87	3	0.16	0.16	<0.05	e% 0.17	e% 0.17	<1	2	7
SP-DC-350	N	8/13/2003	--	153	<1	153	0.02	q 52.5	0.942	0.199	q 158	q 6.63	0.15	--	--	H 0.14	e% 0.14	0.467	q 2.21	13
SP-DC-350	N	5/17/2004	--	109	<1	109	--	34.3	0.714	0.172	102	4.02	--	--	--	--	--	B 0.249	1.73	7.96
SP-DC-350	N	8/25/2004	--	162	--	162	--	50.6	e 0.768	0.208	153	6.57	--	--	--	--	--	0.612	2.03	13.3
SP-UTDC-700	N	5/19/2003	<2	96	--	78	e% <0.05	26	1	0.1	73	2	<0.05	<0.05	<0.05	e% 0.09	e% 0.14	<1	2	9
SP-UTDC-700	N	8/14/2003	--	116	<1	116	<0.01	q 42.8	0.814	0.133	q 122	q 3.61	0.02	--	--	H 0.14	e% 0.57	0.728	q 2.21	4.97
SP-UTDC-700	N	10/28/2003	--	102	<1	102	0.47	40.5	1.77	<0.1	119	4.29	<0.02	--	--	0.049	e% 1.45	2.29	2.26	8.34
SP-UTDC-700	N	5/17/2004	--	206	<1	206	--	66.1	1.43	0.298	208	10.4	--	--	--	--	--	B 0.282	2.5	20.6
SP-UTDC-700	N	8/26/2004	--	252	--	252	--	125	e 1.75	0.347	381	16.8	--	--	--	--	--	2.27	3.22	24
SP-UTDC-800	N	9/25/2002	<2	242	--	198	<0.05	80	<4	0.15	253	13	<0.05	<0.05	<0.05	0.01	0.1	<1	3	24
SP-UTDC-800	N	5/19/2003	<2	143	--	118	e% <0.05	44	2	0.16	135	6	0.05	0.05	<0.05	e% 0.23	e% 0.18	<1	2	14
SP-UTDC-800	N	8/13/2003	--	241	<1	241	0.02	q 80.2	1.75	0.312	q 254	q 13.1	<0.02	--	--	H 0.05	e% 0.06	0.506	q 2.97	22.1
SP-UTDC-800	N	10/28/2003	--	236	<1	236	<0.01	84.3	2.04	0.301	266	13.6	<0.02	--	--	0.037	e% 1.81	1.01	3.13	23.5
SP-UTDC-800	N	5/17/2004	--	81.6	<1	81.6	--	29.3	0.732	0.133	83.4	2.5	--	--	--	--	--	0.622	1.65	6.46
NORTH FORK DEER CREEK																				
SW-NFDC-200	N	5/19/2003	<2	258	--	212	e% <0.05	56	2	0.13	210	17	<0.05	<0.05	<0.05	e% 0.07	e% 0.08	<1	2	11
SW-NFDC-200	D	5/19/2003	<2	244	14	223	0.54	59	3	0.1	209	15	<0.05	<0.05	<0.05	0.02	0.07	<1	3	7
SW-NFDC-500	N	5/22/2002	<2	226	--	185	<0.05	61	<2	0.1	239	21	<0.05	<0.05	<0.05	e 0.02	0.03	<1	3	12
SW-NFDC-500	N	8/7/2002	<2	231	--	189	<0.05	59	e% <2	0.1	213	16	0.07	0.07	<0.05	0.02	0.07	<1	3	9
SW-NFDC-500	N	5/19/2003	<2	244	--	200	e% <0.05	58	2	0.1	211	16	<0.05	<0.05	<0.05	e% 0.02	e% 0.04	<1	3	11
SW-NFDC-500	D	5/19/2003	<2	258	--	212	<0.05	53	1	0.12	190	14	<0.05	<0.05	<0.05	0.05	0.06	<1	2	10
SW-NFDC-500	N	8/13/2003	--	208	<1	208	0.05	55.3	0.959	0.131	203	15.6	0.07	--	--	H 0.02	0.03	B 0.705	3.14	6.6
SW-NFDC-500	N	10/28/2003	--	205	<1	205	<0.01	55.8	1.11	0.122	206	16.2	<0.02	--	--	0.013	e% 0.03	B 0.831	3.39	8.76
SW-NFDC-900	N	6/18/2002	<2	220	--	180	0.07	55	<2	0.16	211	18	<0.05	<0.05	<0.05	0.02	**B 0.04	<1	3	11
SW-NFDC-900	N	8/7/2002	<2	237	--	194	<0.05	60	e% <2	0.12	220	17	0.07	0.07	<0.05	0.02	0.11	<1	3	13
SW-NFDC-900	N	5/19/2003	<2	258	--	212	e% <0.05	58	1	0.11	215	17	<0.05	<0.05	<0.05	e% 0.02	e% 0.14	<1	3	13

TABLE A-2
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PANELS F AND G
BASELINE STUDY

Site		Sample Date	Acidity (mg/L)	Alkalinity Bicarbonate (mg/L)	Alkalinity Carbonate (mg/L)	Alkalinity Total (mg/L)	Ammonia Undistilled (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride Undistilled (mg/L)	Hardness (mg/L)	Magnesium (mg/L)	Nitrate and Nitrite (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Phosphorous Ortho (mg/L)	Phosphorous Total (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)
IDAHO DEQ Standards**			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
SW-NFDC-900	N	8/13/2003	--	198	12.4	210	0.02	58.4	0.95	0.163	214	16.6	<0.02	--	--	H 0.03	0.06	B 0.81	3.29	10.5
SW-NFDC-900	N	10/28/2003	--	211	<1	211	<0.01	59.8	1.17	0.135	221	17.3	<0.02	--	--	0.019	e% 0.03	B 0.838	3.54	13.2
SW-UTNFDC-510	N	9/24/2002	<2	259	--	212	<0.05	54	<4	0.17	225	22	0.06	0.06	<0.05	<0.01	0.01	<1	5	16
SW-UTNFDC-510	N	5/19/2003	<2	272	--	223	e% 0.07	59	2	<0.1	242	23	<0.05	<0.05	<0.05	e% <0.005	e% 0.02	<1	5	16
SW-UTNFDC-510	N	8/13/2003	--	240	<1	240	0.05	58.2	1.22	0.11	239	22.6	<0.02	--	--	H <0.01	<0.01	B 0.839	4.68	11.1
SW-UTNFDC-700	N	9/23/2002	<2	138	--	113	<0.05	50	<4	0.07	187	15	0.11	0.11	<0.05	0.01	<0.01	<1	3	6
SW-UTNFDC-700	N	5/19/2003	<2	220	--	180	e% <0.05	50	1	<0.1	195	17	0.17	0.17	<0.05	e% <0.005	e% 0.03	<1	3	12
SW-UTNFDC-700	N	8/13/2003	--	188	4.78	193	0.05	49.2	1.02	0.102	186	15.3	0.15	--	--	H <0.01	<0.01	B 0.527	2.98	5.54
SW-UTNFDC-800	N	9/23/2002	<2	220	--	180	<0.05	56	<4	0.09	193	13	<0.05	<0.05	<0.05	0.02	0.02	<1	3	6
SW-UTNFDC-900	N	9/23/2002	<2	187	--	153	<0.05	54	<4	0.1	168	8	<0.05	<0.05	<0.05	<0.01	0.01	<1	2	5
SW-UTNFDC-950	N	9/23/2002	<2	199	--	163	<0.05	60	<4	0.1	191	10	<0.05	<0.05	<0.05	<0.01	0.02	<1	3	5
SP-NFDC-50	N	10/29/2003	--	219	<1	219	<0.01	53.2	0.827	0.143	218	20.8	0.67	--	--	H <0.01	e <0.01	Be% 0.83	3.04	9.56
SP-NFDC-700	N	6/18/2002	<2	242	--	198	<0.05	63	<4	0.16	256	24	0.13	0.13	<0.05	0.06	**B 0.04	<1	3	27
SP-NFDC-700	N	8/7/2002	<2	242	--	198	<0.05	66	e% <2	0.18	238	18	0.21	0.21	<0.05	0.05	0.09	<1	4	25
SP-NFDC-700	N	5/19/2003	<2	287	--	235	e% <0.05	64	2	0.14	242	20	0.13	0.13	<0.05	e% 0.06	e% 0.06	<1	3	24
SP-NFDC-700	N	8/13/2003	--	223	<1	223	0.02	62.9	1.02	0.22	234	18.6	0.12	--	--	H 0.06	0.05	B 0.689	3.42	24.6
SP-UTNFDC-400	N	5/21/2002	<2	83	--	68	<0.05	25	<2	0.17	75	3	<0.05	<0.05	<0.05	0.26	0.53	<1	2	7
SP-UTNFDC-400	N	5/20/2003	<2	qe% 115	--	qe% 94	<0.05	28	<2	0.17	e% 86	e% 4	<0.05	<0.05	<0.05	0.28	q 0.28	<1	2	e 6
SP-UTNFDC-520	N	9/24/2002	<2	242	--	198	<0.05	52	<4	0.14	200	17	0.06	0.06	<0.05	0.01	0.01	<1	4	15
SP-UTNFDC-520	N	5/19/2003	<2	258	--	212	e% <0.05	60	1	<0.1	240	22	0.07	0.07	<0.05	e% 0.009	e% 0.02	<1	3	16
SP-UTNFDC-520	N	8/13/2003	--	220	<1	220	0.05	56.9	0.984	0.133	221	19.1	0.05	--	--	H <0.01	<0.01	B 0.821	3.51	13.7
SP-UTNFDC-540	N	8/13/2003	--	269	<1	269	0.03	74.7	0.677	0.301	279	22.4	<0.02	--	--	H 0.09	0.21	B 0.596	2.59	15.5
SP-UTNFDC-540	N	10/28/2003	--	257	<1	257	<0.01	68.5	1.12	0.204	269	23.7	<0.02	--	--	0.098	e% 0.23	B 0.743	2.44	8.84
SP-UTNFDC-540	N	5/17/2004	--	241	10.82	251	--	61.8	1.03	0.277	240	20.7	--	--	--	--	--	0.398	2.26	12.2
SP-UTNFDC-600	N	8/6/2002	<2	253	--	207	<0.05	74	e% <4	0.19	242	14	0.19	0.19	<0.05	0.03	0.15	<1	4	22
SP-UTNFDC-600	N	5/20/2003	<2	qe% 258	--	qe% 212	<0.05	64	2	0.14	e% 217	e% 14	<0.05	<0.05	<0.05	0.02	q 0.03	<1	3	e 24
SP-UTNFDC-600	N	8/14/2003	--	231	<1	231	<0.01	q 70.3	1.13	0.198	q 234	q 14.2	<0.02	--	--	H 0.03	e% 0.04	0.512	q 3.17	17.8

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BASELINE STUDY

Site		Sample Date	Acidity (mg/L)	Alkalinity Bicarbonate (mg/L)	Alkalinity Carbonate (mg/L)	Alkalinity Total (mg/L)	Ammonia Undistilled (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride Undistilled (mg/L)	Hardness (mg/L)	Magnesium (mg/L)	Nitrate and Nitrite (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Phosphorous Ortho (mg/L)	Phosphorous Total (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)
IDAHO DEQ Standards**			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
SP-UTNFDC-600	N	10/29/2003	--	279	<1	279	<0.01	76.5	1.4	0.356	293	24.7	<0.02	--	--	0.174	e 0.19	Be% 0.69	2.59	21.1
SP-UTNFDC-600	N	5/18/2004	--	202	<1	202	--	59.1	0.92	0.226	198	12.3	--	--	--	--	--	B 0.27	2.79	22.9
SP-UTNFDC-600	N	8/25/2004	--	239	--	250	--	71.6	e 1.11	0.203	242	15.3	--	--	--	--	--	0.785	3	16.5
SOUTH FORK DEER CREEK																				
SW-SFDC-200	N	5/18/2003	<2	215	--	176	e% <0.05	48	1	0.12	153	8	<0.05	<0.05	<0.05	e% 0.09	e% 0.13	<1	2	7
SW-SFDC-200	N	8/13/2003	--	149	<1	149	0.02	q 41.4	0.639	0.127	q 147	q 10.6	<0.02	--	--	H 0.04	e% 0.04	0.684	q 2.61	8.45
SW-SFDC-200	D	8/13/2003	--	145	<1	145	0.02	39.7	0.65	0.123	142	10.3	<0.02	--	--	H 0.03	0.04	0.671	2.55	8.38
SW-SFDC-200	N	10/28/2003	--	170	<1	170	<0.01	51.8	0.987	0.1	174	10.9	<0.02	--	--	<0.01	e% 0.05	B 0.587	2.64	10.1
SW-SFDC-300	N	5/22/2002	<2	171	--	140	<0.05	53	<2	0.09	174	10	0.11	0.11	<0.05	e 0.06	0.1	<1	2	9
SW-SFDC-300	N	5/18/2003	<2	186	--	153	e% <0.05	54	2	<0.1	164	7	<0.05	<0.05	<0.05	e% 0.07	e% 0.07	<1	1	6
SW-SFSC-800	N	9/28/2004	--	221	<1	221	--	49.3	4.35	0.367	205	19.9	--	--	--	--	--	0.617	4.58	13.4
SW-SFDC-800	N	5/23/2002	<2	90	--	74	<0.05	30	<2	0.11	87	3	<0.05	<0.05	<0.05	e 0.1	0.11	<1	1	7
SW-SFDC-800	N	5/19/2003	<2	96	--	78	e% <0.05	25	1	0.12	71	2	<0.05	<0.05	<0.05	e% 0.1	e% 0.11	<1	1	6
SW-SFDC-800	N	5/17/2004	--	98	<1	98	--	31.1	0.739	0.128	87.1	2.32	--	--	--	--	--	B 0.17	1.53	4.09
SW-UTSFDC-900	N	5/19/2003	<2	72	--	59	e% <0.05	23	1	<0.1	66	2	0.05	0.05	<0.05	e% 0.1	e% 0.11	<1	1	6
SP-UTSFDC-500	N	5/22/2002	<2	71	--	58	<0.05	28	<2	0.05	78	2	<0.05	<0.05	<0.05	e 0.04	0.05	<1	1	<5
SP-UTSFDC-600	N	10/29/2003	--	222	<1	222	<0.01	54.2	1.72	0.174	213	18.9	0.03	--	--	H <0.01	e <0.01	Be% 0.759	4.4	6.96
WELLS CANYON																				
SW-WC-800	N	5/18/2003	<2	239	9	212	e% <0.05	60	3	0.1	212	15	<0.05	<0.05	<0.05	e% 0.03	e% 0.07	<1	3	7
SW-WC-800	N	8/12/2003	--	201	8.78	210	0.02	q 57.7	2.86	0.165	q 204	q 14.5	0.08	--	--	H 0.04	e% 0.06	1.93	q 3.32	5.47
SW-WC-800	D	8/12/2003	--	199	9.28	209	0.01	57.5	2.67	0.163	203	14.4	0.08	--	--	H 0.04	0.08	2.01	3.31	5.28
SW-WC-800	N	10/28/2003	--	201	<1	201	0.02	57.9	2.54	0.15	203	14.2	0.03	--	--	0.018	e% 0.02	B 0.826	3.32	5.32
SW-WC-800	N	5/19/2004	--	198	e 9.62	208	--	53.8	2.04	0.165	191	13.7	--	--	--	--	--	0.532	3.03	4.89
SW-WC-800	D	5/19/2004	--	199	e 9.28	208	--	52.2	2.08	0.153	185	13.3	--	--	--	--	--	0.513	2.99	5.01
SW-WC-800	N	8/24/2004	--	206	--	214	--	54.1	e 2.02	0.17	194	14.4	--	--	--	--	--	0.586	2.94	5.05
SP-UTWC-300	N	5/23/2002	<2	12	--	10	<0.05	4	<2	0.07	14	1	<0.05	<0.05	<0.05	e 0.02	0.04	<1	1	5
SP-UTWC-300	N	5/18/2003	<2	38	--	31	e% <0.05	5	2	<0.1	17	1	<0.05	<0.05	<0.05	e% 0.02	e% 0.05	<1	1	6

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Site		Sample Date	Acidity (mg/L)	Alkalinity Bicarbonate (mg/L)	Alkalinity Carbonate (mg/L)	Alkalinity Total (mg/L)	Ammonia Undistilled (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride Undistilled (mg/L)	Hardness (mg/L)	Magnesium (mg/L)	Nitrate and Nitrite (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Phosphorous Ortho (mg/L)	Phosphorous Total (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)
IDAHO DEQ Standards**			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
SP-WC-400	N	5/20/2002	<2	165	--	135	<0.05	47	<2	0.21	154	9	<0.05	<0.05	<0.05	0.22	0.24	<1	3	14
SP-WC-400	N	8/8/2002	<2	200	--	164	<0.05	62	e% 2	0.21	200	11	0.12	0.12	<0.05	0.1	0.3	<1	3	20
SP-WC-400	D	8/8/2002	<2	215	--	176	<0.05	61	6	0.21	198	11	0.17	0.17	<0.05	0.1	0.26	<1	3	21
SP-WC-400	N	5/18/2003	<2	186	--	153	e% <0.05	49	3	0.2	164	10	0.06	0.06	<0.05	e% 0.17	e% 0.18	<1	2	14
SP-WC-400	N	8/13/2003	--	182	<1	182	0.02	q 59.2	1.48	0.263	q 195	q 11.4	0.09	--	--	H 0.19	e% 0.4	1.02	q 3.02	17.9
SP-WC-400	N	10/28/2003	--	178	<1	178	0.02	58.8	1.74	0.235	194	11.5	<0.02	--	--	0.142	e% 0.22	B 0.843	3.09	19
SP-WC-400	D	10/28/2003	--	179	<1	179	0.02	59.8	1.77	0.238	--	11.7	<0.02	--	--	H 0.149	0.29	B 0.951	3.13	19.1
SP-WC-400	N	5/17/2004	--	167	<1	167	--	48.1	0.992	0.22	160	9.57	--	--	--	--	--	0.316	2.42	13.7
SP-WC-400	N	8/25/2004	--	184	--	188	--	57.8	e 1.86	0.256	194	12	--	--	--	--	--	1.81	2.81	18.9
SP-WC-750	N	6/5/2003	<2	249	--	204	<0.05	59	4	0.13	197	12	0.26	0.26	<0.05	0.04	0.06	<1	3	<5
SP-WC-750	N	7/29/2003	--	211	--	211	--	N 59.3	2.3	0.168	212	15.5	--	--	--	--	--	B 0.63	3.34	5.24
SP-WC-750	N	8/14/2003	--	193	<1	193	<0.1	q 56	2.25	0.133	q 189	q 11.8	0.24	--	--	H 0.04	e% 0.04	0.731	q 3.24	4.24
DIAMOND CREEK																				
SW-DMC-200	N	5/18/2003	<2	86	--	71	e% 0.14	18	1	0.1	61	4	<0.05	<0.05	<0.05	e% 0.29	e% 0.25	<1	1	6
SW-DMC-200	N	8/14/2003	--	156	<1	156	<0.01	q 42.5	0.568	0.16	q 185	q 10.9	<0.02	--	--	H 0.08	e% 0.1	0.523	q 3.27	7.1
SW-DMC-200	D	8/14/2003	--	158	<1	158	<0.01	43.2	0.518	0.143	153	11	<0.02	--	--	H 0.08	0.1	0.508	3.32	7.02
STEWART CANYON																				
SW-ST-500	N	8/15/2003	--	173	5.7	179	0.01	56.1	0.893	0.181	182	10.1	0.02	--	--	0.14	0.16	B 0.603	2.28	10.5
SW-ST-500	N	5/18/2004	--	132	<1	132	--	38.2	0.662	0.199	123	6.7	--	--	--	--	--	0.326	1.94	11
SW-ST-500	N	8/26/2004	--	180	--	187	--	53.4	e 0.867	0.199	174	9.92	--	--	--	--	--	0.555	2.09	12.2
SW-ST-700	N	8/26/2004	--	163	--	171	--	39.1	e 0.995	0.153	154	13.6	--	--	--	--	--	0.434	1.66	4.58
SW-ST-700	D	8/26/2004	--	162	--	169	--	38.8	1.36	0.151	153	13.6	--	--	--	--	--	0.412	1.64	4.59
SP-ST-100	N	8/15/2003	--	202	1	202	0.01	52.7	1.22	0.2	190	14.2	0.17	--	--	0.01	0.02	B 0.614	1.77	4.85
SP-ST-100	N	5/18/2004	--	195	<1	195	--	48.7	1.15	0.159	176	13.1	--	--	--	--	--	0.396	1.58	4.57
SP-ST-100	N	8/26/2004	--	199	--	202	--	50.2	e 0.972	0.165	184	14.1	--	--	--	--	--	0.51	1.61	5.2
SP-ST-200	N	8/15/2003	--	189	1	189	0.01	53.8	1.05	0.153	185	12.3	0.14	--	--	0.07	0.09	B 0.63	2.41	7.29
SP-ST-200	N	5/18/2004	--	197	<1	197	--	50.6	1.37	0.193	175	11.8	--	--	--	--	--	0.421	2.27	7.65

TABLE A-2
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR MAJOR IONS AND NUTRIENTS
PANELS F AND G
BASELINE STUDY

Site		Sample Date	Acidity (mg/L)	Alkalinity Bicarbonate (mg/L)	Alkalinity Carbonate (mg/L)	Alkalinity Total (mg/L)	Ammonia Undistilled (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride Undistilled (mg/L)	Hardness (mg/L)	Magnesium (mg/L)	Nitrate and Nitrite (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Phosphorous Ortho (mg/L)	Phosphorous Total (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)
IDAHO DEQ Standards**			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
SP-ST-200	N	8/26/2004	--	198	--	203	--	52.4	e 1.34	0.18	182	12.5	--	--	--	--	--	0.553	2.27	7.82
LAMB CANYON																				
SW-LC-500	N	8/15/2003	--	210	7.08	217	0.01	62.4	0.618	0.16	206	12.1	0.08	--	--	0.06	0.1	B 0.552	1.94	11.3
CLEAR CREEK																				
SW-CL-800	N	7/29/2003	--	229	--	230	--	N 59.9	5.45	0.132	228	19	--	--	--	--	--	B 0.656	5.5	7.81
WHITE DUGWAY CREEK																				
SW-WD-800	N	7/29/2003	--	84.2	--	102	--	N 43.9	195	0.127	178	16.6	--	--	--	--	--	1.01	157	122
WARM CREEK																				
SW-WM-800	N	7/30/2003	--	245	--	245	--	N 65.6	34.7	0.217	233	16.9	--	--	--	--	--	B 0.851	29.8	13.2
PRESERVATIVE BLANK																				
SW-OC-200	B	5/20/2003	3	3	0	2	<0.05	< 1	<2	<0.1	<7	<1	<0.05	<0.05	<0.05	<0.01	0.01	<1	<1	<5
SW-OC-200	B	8/14/2003	--	<1	<1	<1	<0.01	0.0491	<0.2	<0.1	0.178	0.0134	<0.02	--	--	H <0.01	<0.01	<0.025	0.0488	<0.3
SW-OC-200	B	10/30/2003	--	<1	<1	<1	0.02	B 0.014	<0.2	<0.1	--	<0.005	<0.02	--	--	H <0.01	<0.01	B 0.0487	B 0.0624	<0.3
SW-OC-200	B	5/19/2004	--	<1	e <1	<1	--	B 0.0222	<0.2	<0.1	B 0.102	<0.0112	--	--	--	--	--	<0.0258	B 0.0265	<0.3

Notes:

<	Indicates analyte not detected above laboratory practical quantification limit (PQL)
(mg/L)	Milligrams per liter
D	Field duplicate sample
N	Located in Site column indicates natural sample.
N	Located in analyte columns indicates percent recovery not within control limits 75-125% (SVL).
--	Field data or laboratory samples were not collected or analyzed.

Bromide analysis was conducted on thirteen samples collected during the period of July 28 through July 30, 2003 as part of the Crow Creek Study. The stations sampled include: SP-BOOKS, SP-CC-50, SP-Hoopes, SP-Reide, SP-SFSC-750, SP-UTCC-50, SP-WC-750, SW-CC-300, SW-CC-50, SW-CL-800, SW-DC-800, SW-WD-800, and SW-WM-800. All samples collected were below the 0.1 mg/L reporting limit.

e	Field duplicate results exceed acceptable limits - PQL based determination.
e%	Fieild duplicate results exceed acceptable limits - relative percent difference determination.
H	Sample analyzed out of holding time.
q	Associated values are estimates - field blank showed evidence of contamination.
NE	Not Established
B	Not detected above quantitation limit but present above the method detection limit.
**B	Analyte was detected in method blank. Results are not corrected for the method blank concentration.
**	Based on IDAPA 58.01.02, there are no surface water quality standards for major ions and nutrients.

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
CROW CREEK														
SW-CC-50	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SW-CC-50	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-CC-50	5/19/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	B 0.0169
SW-CC-50	5/19/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	e% 0.202
SW-CC-50	8/24/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SW-CC-50	8/24/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.187
SW-CC-100	8/15/2003	Dissolved	N	<0.0097	BW 0.0014	B 0.00049	0.0355	<0.00006	<0.012	<0.0001	B 0.00039	B 0.00036	<0.0026	<0.0045
SW-CC-100	8/15/2003	Total	N	0.035	<0.0006	<0.0004	0.0359	<0.00006	<0.012	<0.0001	B 0.00041	<0.0003	<0.0026	* 0.0396
SW-CC-100	10/29/2003	Dissolved	N	<0.0097	Be 0.0023	e <0.0004	0.0339	<0.00006	<0.012	<0.00006	<0.0003	B 0.0005	<0.0026	<0.0045
SW-CC-100	10/29/2003	Dissolved	D	<0.0097	<0.0006	B 0.00052	0.0339	<0.00006	<0.012	<0.00006	<0.0003	B 0.00035	<0.0026	<0.0045
SW-CC-100	10/29/2003	Total	N	e% 0.821	<0.0006	Be 0.00072	e% 0.0475	<0.00006	<0.012	e 0.00023	Be% 0.0023	<0.0003	<0.0026	e% 0.632
SW-CC-100	10/29/2003	Total	D	0.117	<0.0006	B 0.00052	0.0352	<0.00006	<0.012	<0.00006	B 0.00079	<0.0003	<0.0026	0.0854
SW-CC-100	5/19/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SW-CC-100	5/19/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	e% 0.163
SW-CC-100	8/24/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SW-CC-100	8/24/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.0979
SW-CC-300	5/20/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	0.001	<0.01	<0.01	<0.03
SW-CC-300	5/20/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-CC-300	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SW-CC-300	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-CC-300	8/12/2003	Dissolved	N	<0.0097	Be 0.0011	B 0.00083	0.0449	<0.00006	<0.012	<0.0001	<0.0003	B 0.0004	<0.0026	Be 0.011
SW-CC-300	8/12/2003	Total	N	Ne% 0.0457	<0.0006	B 0.00081	0.0471	<0.00006	<0.012	<0.0001	Be% 0.00037	<0.0003	<0.0026	e% 0.0653
SW-CC-300	5/19/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SW-CC-300	5/19/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	e% 0.153
SW-CC-300	8/24/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SW-CC-300	8/24/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.0357
SW-CC-800	5/20/2003	Dissolved	N	<0.1	<0.003	0.001	<0.1	<0.001	0.1	<0.0001	0.002	<0.01	<0.01	<0.03
SW-CC-800	5/20/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-CC-800	8/15/2003	Dissolved	N	<0.0097	BW 0.00082	B 0.00089	0.0425	B 0.00006	B 0.0146	<0.0001	<0.0003	B 0.00056	<0.0026	<0.0045
SW-CC-800	8/15/2003	Total	N	N 0.0298	W <0.0006	<0.0004	0.053	<0.00006	<0.012	<0.0001	<0.0003	<0.0003	<0.0026	* 0.0482
SW-CC-800	5/19/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SW-CC-800	5/19/2004	Dissolved	D	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SW-CC-800	5/19/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	e% 0.0958
SW-CC-800	5/19/2004	Total	D	--	--	--	--	--	--	<0.0001	--	--	--	0.119
SW-CC-800	8/24/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SW-CC-800	8/24/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.0403
SP-UTCC-50	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SP-UTCC-50	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-RIEDE	7/30/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SP-RIEDE	7/30/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-BOOKS	6/5/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SP-BOOKS	6/5/2003	Total	N	* <0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	0.14
SP-BOOKS	7/30/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SP-BOOKS	7/30/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-BOOKS	8/14/2003	Dissolved	N	<0.0097	Be 0.0014	<0.0007	0.0262	<0.00006	<0.012	<0.0001	B 0.0005	<0.0003	<0.0026	Be 0.0084
SP-BOOKS	8/14/2003	Total	N	Ne% <0.0097	<0.0006	<0.0007	0.0271	<0.00006	<0.012	<0.0001	qe% 0.00056	<0.0003	<0.0026	e% 0.0357
SP-BOOKS	5/19/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SP-BOOKS	5/19/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	Be% 0.0176
SP-BOOKS	8/24/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SP-BOOKS	8/24/2004	Dissolved	D	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SP-BOOKS	8/24/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SP-BOOKS	8/24/2004	Total	D	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SP-CC-500	7/30/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SP-CC-500	7/30/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-QH-800	10/30/2003	Dissolved	N	<0.0097	<0.0003	N <0.0006	0.025	<0.00006	B 0.0155	<0.00006	<0.0003	<0.0003	<0.0026	<0.0045
SP-QH-800	10/30/2003	Total	N	*N 1.5	<0.0003	N <0.0006	0.0367	<0.00006	B 0.0229	q 0.00035	B 0.0024	<0.0003	<0.0026	* 1.18
SOUTH FORK SAGE CREEK														
SW-SFSC-200	5/20/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	0.04
SW-SFSC-200	5/20/2003	Total	N	* <0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	0.001	<0.01	<0.01	0.1
SW-SFSC-200	8/12/2003	Dissolved	N	<0.0086	B 0.0015	<0.0004	0.0241	<0.00007	B 0.0287	<0.0001	B 0.0011	B 0.00044	0.0042	B 0.0062
SW-SFSC-200	8/12/2003	Total	N	* <0.0097	<0.0006	<0.0004	0.0223	B 0.00007	<0.012	<0.0001	B 0.00055	<0.0003	<0.0026	<0.0045
SW-SFSC-500	5/20/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.05	0.0002	<0.01	--	<0.01	<0.05
SW-SFSC-500	5/20/2002	Total	N	0.2	<0.001	0.001	<0.1	<0.001	<0.05	0.0003	<0.01	--	<0.01	0.15
SW-SFSC-500	8/12/2003	Dissolved	N	B 0.0097	BW 0.00068	<0.0004	0.0283	<0.00007	B 0.0138	<0.0001	B 0.00099	<0.0004	B 0.002	<0.0035
SW-SFSC-500	8/12/2003	Total	N	* 0.0244	<0.0006	<0.0004	0.0277	<0.00006	B 0.0137	<0.0001	B 0.00048	<0.0003	<0.0026	0.022
SW-SFSC-800	8/12/2003	Dissolved	N	<0.0086	BW 0.0011	W <0.0004	0.046	<0.00007	<0.0065	<0.0001	B 0.0017	<0.0004	<0.0011	<0.0035
SW-SFSC-800	8/12/2003	Total	N	* <0.0097	<0.0006	<0.0004	0.043	B 0.00011	B 0.0162	<0.0001	B 0.00096	<0.0003	<0.0026	B 0.0124
SW-SFSC-800	5/18/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SW-SFSC-800	5/18/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.0213
SP-SFSC-100	10/28/2003	Dissolved	N	*< 0.0086	Be% 0.00076	<0.0004	0.0193	<0.00007	<0.0065	<0.00006	Be 0.00068	<0.0004	<0.0011	<0.0035
SP-SFSC-100	10/28/2003	Total	N	0.0501	<0.0006	<0.0004	0.0194	<0.00007	<0.0065	<0.00006	B 0.00097	<0.0004	<0.0011	0.0245

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SP-UTSFSC-100	5/21/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	<0.05
SP-UTSFSC-100	5/21/2002	Total	N	* <0.1	<0.001	0.001	<0.1	<0.001	<0.05	0.0002	<0.01	--	<0.01	<0.05
SP-UTSFSC-100	8/6/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.01	--	<0.01	<0.01
SP-UTSFSC-100	8/6/2002	Total	N	e 0.1	<0.001	<0.001	<0.1	<0.001	<0.1	e% 0.0001	<0.01	--	<0.01	e% <0.01
SP-UTSFSC-100	5/20/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	0.003	<0.01	<0.01	<0.03
SP-UTSFSC-100	5/20/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-UTSFSC-100	8/12/2003	Dissolved	N	B 0.0143	Be 0.0016	<0.0007	0.0217	<0.00006	B 0.0149	<0.0001	<0.0003	B 0.00031	<0.0026	Be 0.0124
SP-UTSFSC-100	8/12/2003	Total	N	Ne% 0.885	W <0.0006	<0.0007	0.0309	B 0.00021	B 0.0205	q 0.00011	Be% 0.0017	B 0.00063	<0.0026	e% 0.771
SP-UTSFSC-200	9/23/2002	Dissolved	N	<0.1	<0.003	<0.003	0.03	<0.001	<0.1	0.0001	0.002	--	<0.001	0.33
SP-UTSFSC-200	9/23/2002	Total	N	0.5	<0.003	<0.003	0.03	<0.001	<0.1	<0.0001	0.002	--	<0.001	0.8
SP-UTSFSC-200	5/20/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	0.001	<0.01	<0.01	<0.03
SP-UTSFSC-200	5/20/2003	Dissolved	D	<0.1	<0.003	0.002	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SP-UTSFSC-200	5/20/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-UTSFSC-200	5/20/2003	Total	D	--	--	--	--	--	--	--	--	--	--	--
SP-UTSFSC-200	8/12/2003	Dissolved	N	0.0447	Be 0.0014	<0.0007	0.0254	B 0.00017	B 0.016	<0.0001	<0.0003	<0.0003	<0.0026	e 0.0229
SP-UTSFSC-200	8/12/2003	Total	N	Ne% 0.127	<0.0006	<0.0007	0.0267	<0.00006	B 0.0198	<0.0001	Be% 0.00074	<0.0003	<0.0026	e% 0.132
SP-UTSFSC-200	10/29/2003	Dissolved	N	<0.0097	Be 0.0026	e <0.0004	0.0245	<0.00006	B 0.0153	<0.00006	<0.0003	B 0.00043	<0.0026	<0.0045
SP-UTSFSC-200	10/29/2003	Total	N	e% 0.0863	<0.0006	e <0.0004	e% 0.0248	<0.00006	B 0.0176	e <0.00006	Be% 0.00055	<0.0003	<0.0026	e% 0.0653
SP-SFSC-750	7/28/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SP-SFSC-750	7/28/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-SFSC-750	8/12/2003	Dissolved	N	B 0.0098	B 0.00064	<0.0004	0.0457	<0.00007	0.102	<0.0001	B 0.0022	B 0.00042	0.0036	0.0285
SP-SFSC-750	8/12/2003	Total	N	* <0.0097	<0.0006	<0.0004	0.0397	B 0.0001	B 0.0153	<0.0001	B 0.00096	<0.0003	<0.0026	<0.0045
SP-SFSC-750	9/28/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SP-SFSC-750	9/28/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	B 0.0175

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SP-SFSC-750	10/13/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SP-SFSC-750	10/13/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.0247
SP-HOOPES	7/28/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SP-HOOPES	7/28/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-UTSC-850	5/18/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	B 0.013
SP-UTSC-850	5/18/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.326
SP-UTSC-850	9/28/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	0.0268
SP-UTSC-850	9/28/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.228
MANNING CREEK														
SP-MC-300	5/21/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	<0.05
SP-MC-300	5/21/2002	Total	N	0.2	<0.001	0.003	<0.1	<0.001	<0.05	0.0002	<0.01	--	<0.01	0.18
SP-MC-300	5/20/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	0.003	<0.01	<0.01	<0.03
SP-MC-300	5/20/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-MC-300	8/25/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SP-MC-300	8/25/2004	Total	N	--	--	--	--	--	--	0.0024	--	--	--	26.9
DEER CREEK														
SW-DC-200	5/18/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	0.001	<0.01	<0.01	<0.03
SW-DC-200	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-DC-200	8/14/2003	Dissolved	N	<0.0097	Be 0.0015	<0.0007	0.0244	<0.00006	<0.012	<0.0001	<0.0003	<0.0003	<0.0026	e <0.0045
SW-DC-200	8/14/2003	Total	N	Ne% <0.0097	<0.0006	<0.0007	0.0245	q 0.00006	<0.012	<0.0001	qe% 0.00044	<0.0003	<0.0026	e% 0.0185
SW-DC-200	5/20/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SW-DC-200	5/20/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	e% 0.0249
SW-DC-200	8/25/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SW-DC-200	8/25/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.114

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SW-DC-300	5/22/2002	Dissolved	N	<0.1	0.002	0.002	<0.1	<0.001	<0.05	0.0002	<0.01	--	<0.01	<0.05
SW-DC-300	5/22/2002	Total	N	0.2	<0.001	0.001	<0.1	<0.001	<0.05	0.0001	<0.01	--	<0.01	0.22
SW-DC-300	5/19/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SW-DC-300	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-DC-400	5/22/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	<0.05
SW-DC-400	5/22/2002	Total	N	0.2	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	0.2
SW-DC-400	5/19/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SW-DC-400	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-DC-400	5/17/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SW-DC-400	5/17/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	B 0.0132
SW-DC-500	5/23/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	<0.05
SW-DC-500	5/23/2002	Dissolved	D	<0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	<0.05
SW-DC-500	5/23/2002	Total	N	0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	0.14
SW-DC-500	5/23/2002	Total	D	* <0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	0.11
SW-DC-500	8/7/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.01	--	<0.01	0.06
SW-DC-500	8/7/2002	Total	N	e <0.1	<0.001	<0.001	<0.1	<0.001	<0.1	e% 0.0002	<0.01	--	<0.01	e% 0.05
SW-DC-500	5/19/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SW-DC-500	5/19/2003	Total	N	0.1	<0.003	0.002	<0.1	<0.001	<0.1	0.0003	(1) 0.001	<0.01	<0.01	0.21
SW-DC-500	8/13/2003	Dissolved	N	<0.0086	B 0.001	<0.0004	0.0339	<0.00007	B 0.0128	<0.0001	B 0.001	B 0.00048	<0.0011	<0.0035
SW-DC-500	8/13/2003	Total	N	* 0.171	<0.0006	<0.0004	0.0355	B 0.00013	B 0.0189	0.00011	B 0.00084	<0.0003	<0.0026	0.263
SW-DC-500	10/28/2003	Dissolved	N	*< 0.0086	BWe% 0.0021	W <0.0004	0.0305	<0.00007	B 0.0118	<0.00006	Be 0.00042	B 0.00043	<0.0011	<0.0035
SW-DC-500	10/28/2003	Total	N	0.0585	<0.0006	<0.0004	0.0302	<0.00007	<0.0065	0.0001	B 0.00055	<0.0004	<0.0011	0.0524
SW-DC-500	5/17/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SW-DC-500	5/17/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.19

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SW-DC-500	8/26/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SW-DC-500	8/26/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.261
SW-DC-800	5/19/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	0.001	<0.01	<0.01	<0.03
SW-DC-800	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-DC-800	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SW-DC-800	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-DC-800	8/12/2003	Dissolved	N	B 0.0121	Be 0.002	<0.0007	0.0295	<0.00006	<0.012	<0.0001	<0.0003	<0.0003	<0.0026	e 0.0251
SW-DC-800	8/12/2003	Total	N	e% 0.0244	<0.0006	<0.0007	0.0308	B 0.00007	<0.012	<0.0001	Be% 0.00059	<0.0003	<0.0026	e% 0.0898
SW-DC-800	10/30/2003	Dissolved	N	<0.0097	<0.0003	N <0.0006	0.0285	B 0.00009	B 0.0145	<0.00006	<0.0003	<0.0003	<0.0026	<0.0045
SW-DC-800	10/30/2003	Total	N	*BN 0.0176	W <0.0003	N <0.0006	0.0288	<0.00006	B 0.013	<0.00006	B 0.00046	<0.0003	<0.0026	* 0.114
SW-DC-800	5/19/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SW-DC-800	5/19/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	e% 0.103
SW-DC-800	8/24/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	B 0.0144
SW-DC-800	8/24/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.111
SP-DC-100	10/29/2003	Dissolved	N	<0.0097	We 0.0071	Be 0.00069	0.0037	<0.00006	<0.012	0.0001	B 0.0017	B 0.00067	<0.0026	<0.0045
SP-DC-100	10/29/2003	Total	N	e% <0.0097	B 0.0016	Be 0.00069	e% 0.0033	<0.00006	<0.012	e 0.0002	Be% 0.0019	<0.0003	<0.0026	Be% 0.0107
SP-DC-350	8/8/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.1	0.0004	<0.01	--	<0.01	<0.01
SP-DC-350	8/8/2002	Total	N	e <0.1	<0.001	<0.001	<0.1	<0.001	<0.1	e% 0.0003	<0.01	--	<0.01	e% 0.03
SP-DC-350	5/19/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SP-DC-350	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-DC-350	8/13/2003	Dissolved	N	<0.0097	e 0.0061	<0.0007	0.0114	<0.00006	<0.012	0.0002	B 0.0015	<0.0003	<0.0026	e <0.0045
SP-DC-350	8/13/2003	Total	N	Ne% <0.0097	<0.0006	<0.0007	0.0115	<0.00006	<0.012	q 0.00023	qe% 0.0023	<0.0003	<0.0026	e% <0.0045
SP-DC-350	5/17/2004	Dissolved	N	--	--	--	--	--	--	W*<0.0001	--	--	--	<0.0124
SP-DC-350	5/17/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.0708

TABLE A-3
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ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SP-DC-350	8/25/2004	Dissolved	N	--	--	--	--	--	--	0.00017	--	--	--	<0.0124
SP-DC-350	8/25/2004	Total	N	--	--	--	--	--	--	0.00046	--	--	--	0.62
SP-UTDC-700	5/19/2003	Dissolved	N	<0.1	<0.003	0.005	<0.1	<0.001	<0.1	0.0003	0.002	<0.01	<0.01	<0.03
SP-UTDC-700	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-UTDC-700	8/14/2003	Dissolved	N	0.0237	Be 0.0016	B 0.0012	0.0077	<0.00006	<0.012	<0.0001	B 0.0025	<0.0003	<0.0026	e <0.0045
SP-UTDC-700	8/14/2003	Total	N	1.95	<0.0006	0.0014	0.0195	q 0.00011	<0.012	q 0.0063	qe% 0.0309	<0.0003	<0.0026	e% 1
SP-UTDC-700	10/28/2003	Dissolved	N	*B 0.017	e% 0.0033	<0.0004	0.0132	<0.00007	<0.0065	0.0001	Be 0.00061	B 0.00068	<0.0011	<0.0035
SP-UTDC-700	10/28/2003	Total	N	6.74	W <0.0006	BW 0.0028	0.0572	B 0.00023	<0.0065	0.0016	0.0785	B 0.00085	0.0061	4.03
SP-UTDC-700	5/17/2004	Dissolved	N	--	--	--	--	--	--	*0.00024	--	--	--	<0.0124
SP-UTDC-700	5/17/2004	Total	N	--	--	--	--	--	--	0.00046	--	--	--	0.219
SP-UTDC-700	8/26/2004	Dissolved	N	--	--	--	--	--	--	0.00022	--	--	--	<0.0124
SP-UTDC-700	8/26/2004	Total	N	--	--	--	--	--	--	0.0113	--	--	--	7.54
SP-UTDC-800	9/25/2002	Dissolved	N	<0.1	<0.003	<0.003	<0.02	<0.001	<0.1	0.0003	0.003	--	<0.001	0.45
SP-UTDC-800	9/25/2002	Total	N	0.1	<0.003	<0.003	<0.02	<0.001	<0.1	0.0005	0.008	--	<0.001	0.67
SP-UTDC-800	5/19/2003	Dissolved	N	<0.1	<0.003	0.007	<0.1	<0.001	<0.1	<0.0001	0.004	<0.01	<0.01	<0.03
SP-UTDC-800	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-UTDC-800	8/13/2003	Dissolved	N	<0.0097	Be 0.0016	B 0.00083	0.0034	<0.00006	<0.012	0.00021	<0.0003	B 0.00043	<0.0026	Be 0.012
SP-UTDC-800	8/13/2003	Total	N	N 0.0315	W <0.0006	0.001	0.0035	<0.00006	<0.012	q 0.00031	qe% 0.0018	0.00041	<0.0026	e% 0.0843
SP-UTDC-800	10/28/2003	Dissolved	N	*< 0.0086	We% <0.0006	W <0.0004	0.0042	<0.00007	<0.0065	0.00033	Be 0.00059	B 0.00064	<0.0011	<0.0035
SP-UTDC-800	10/28/2003	Total	N	1.36	W <0.0006	BW 0.003	0.0105	<0.00007	B 0.009	0.001	0.057	<0.0004	B 0.0014	1.82
SP-UTDC-800	5/17/2004	Dissolved	N	--	--	--	--	--	--	*0.00023	--	--	--	B 0.0142
SP-UTDC-800	5/17/2004	Total	N	--	--	--	--	--	--	0.0072	--	--	--	1.29
NORTH FORK DEER CREEK														
SW-NFDC-200	5/19/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	0.1	<0.0001	<0.001	<0.01	<0.01	<0.03

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SW-NFDC-200	5/19/2003	Dissolved	D	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	0.002	<0.01	<0.01	<0.03
SW-NFDC-200	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-NFDC-200	5/19/2003	Total	D	--	--	--	--	--	--	--	--	--	--	--
SW-NFDC-500	5/22/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	<0.05
SW-NFDC-500	5/22/2002	Total	N	0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	0.13
SW-NFDC-500	8/7/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.1	0.0002	<0.01	--	<0.01	0.03
SW-NFDC-500	8/7/2002	Total	N	e 0.1	<0.001	<0.001	<0.1	<0.001	<0.1	e% <0.0001	<0.01	--	<0.01	e% 0.12
SW-NFDC-500	5/19/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	0.002	<0.01	<0.01	<0.03
SW-NFDC-500	5/19/2003	Dissolved	D	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SW-NFDC-500	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-NFDC-500	5/19/2003	Total	D	--	--	--	--	--	--	--	--	--	--	--
SW-NFDC-500	8/13/2003	Dissolved	N	<0.0086	B 0.00068	<0.0004	0.0339	<0.00007	<0.0065	<0.0001	B 0.00085	B 0.0006	<0.0011	<0.0035
SW-NFDC-500	8/13/2003	Total	N	* 0.0594	<0.0006	<0.0004	0.0339	<0.00006	<0.012	<0.0001	B 0.00045	<0.0003	<0.0026	0.158
SW-NFDC-500	10/28/2003	Dissolved	N	*B 0.0099	e% <0.0006	W <0.0004	0.0321	<0.00007	<0.0065	<0.00006	Be 0.00021	B 0.00054	<0.0011	<0.0035
SW-NFDC-500	10/28/2003	Total	N	0.119	<0.0006	<0.0004	0.0332	<0.00007	B 0.0084	B 0.00007	B 0.00061	<0.0004	<0.0011	0.147
SW-NFDC-900	6/18/2002	Dissolved	N	<0.1	<0.001	0.002	<0.1	<0.001	<0.05	0.0002	<0.01	--	<0.01	<0.05
SW-NFDC-900	6/18/2002	Total	N	0.2	<0.001	0.002	<0.1	<0.001	<0.05	0.0003	<0.01	--	<0.01	0.24
SW-NFDC-900	8/7/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.01	--	<0.01	0.02
SW-NFDC-900	8/7/2002	Total	N	e 0.02	<0.001	<0.001	<0.1	<0.001	<0.1	e% 0.0002	<0.01	--	<0.01	e% 0.2
SW-NFDC-900	5/19/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SW-NFDC-900	5/19/2003	Total	N	0.4	<0.003	0.002	<0.1	<0.001	<0.1	0.0001	(1) 0.001	<0.01	<0.01	0.57
SW-NFDC-900	8/13/2003	Dissolved	N	<0.0086	B 0.0021	<0.0004	0.0326	<0.00007	<0.0065	<0.0001	B 0.00089	<0.0004	<0.0011	<0.0035
SW-NFDC-900	8/13/2003	Total	N	* 0.095	<0.0006	<0.0004	0.034	<0.00006	<0.012	<0.0001	B 0.00049	<0.0003	<0.0026	0.179
SW-NFDC-900	10/28/2003	Dissolved	N	*< 0.0086	e% <0.0006	W <0.0004	0.0308	<0.00007	<0.0065	<0.00006	Be 0.00046	B 0.00049	<0.0011	<0.0035

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SW-NFDC-900	10/28/2003	Total	N	0.109	<0.0006	<0.0004	0.0321	<0.00007	<0.0065	B 0.00008	B 0.00071	<0.0004	<0.0011	0.111
SW-UTNFDC-510	9/24/2002	Dissolved	N	<0.1	<0.003	<0.003	0.02	<0.001	<0.1	<0.0001	0.002	--	<0.001	0.32
SW-UTNFDC-510	9/24/2002	Total	N	0.2	<0.003	<0.003	0.02	<0.001	<0.1	0.0001	0.002	--	<0.001	0.47
SW-UTNFDC-510	5/19/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	0.001	<0.01	<0.01	<0.03
SW-UTNFDC-510	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-UTNFDC-510	8/13/2003	Dissolved	N	<0.0086	B 0.0016	<0.0004	0.0264	<0.00007	B 0.0188	<0.0001	B 0.0011	B 0.00054	<0.0011	B 0.0037
SW-UTNFDC-510	8/13/2003	Total	N	* 0.0994	<0.0006	<0.0004	0.0273	<0.00006	B 0.0247	<0.0001	B 0.00072	<0.0003	<0.0026	0.171
SW-UTNFDC-700	9/23/2002	Dissolved	N	<0.1	<0.003	<0.003	0.03	<0.001	<0.1	0.0001	<0.001	--	<0.001	0.29
SW-UTNFDC-700	9/23/2002	Total	N	* <0.1	<0.003	<0.003	0.04	<0.001	<0.1	<0.0001	0.001	--	<0.001	0.32
SW-UTNFDC-700	5/19/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SW-UTNFDC-700	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-UTNFDC-700	8/13/2003	Dissolved	N	<0.0086	B 0.0011	<0.0004	0.0282	<0.00007	<0.0065	<0.0001	B 0.00097	B 0.00049	<0.0011	<0.0035
SW-UTNFDC-700	8/13/2003	Total	N	N <0.0097	W <0.0006	<0.0004	0.0265	<0.00006	<0.012	<0.0001	B 0.00042	<0.0003	<0.0026	B 0.0143
SW-UTNFDC-800	9/23/2002	Dissolved	N	<0.1	<0.003	<0.003	0.04	<0.001	<0.1	<0.0001	0.002	--	<0.001	0.32
SW-UTNFDC-800	9/23/2002	Total	N	0.1	<0.003	<0.003	0.04	<0.001	<0.1	<0.0001	0.002	--	<0.001	0.37
SW-UTNFDC-900	9/23/2002	Dissolved	N	<0.1	<0.003	<0.003	0.03	<0.001	<0.1	<0.0001	<0.001	--	<0.001	0.3
SW-UTNFDC-900	9/23/2002	Total	N	* <0.1	<0.003	<0.003	0.04	<0.001	<0.1	<0.0001	0.001	--	<0.001	0.33
SW-UTNFDC-950	9/23/2002	Dissolved	N	<0.1	<0.003	<0.003	0.04	<0.001	<0.1	0.0001	0.002	--	<0.001	0.33
SW-UTNFDC-950	9/23/2002	Total	N	0.3	<0.003	<0.003	0.05	<0.001	<0.1	0.0001	0.002	--	<0.001	0.55
SP-NFDC-50	10/29/2003	Dissolved	N	<0.0097	We 0.0032	e <0.0004	0.0297	<0.00006	<0.012	<0.00006	B 0.00039	B 0.00036	<0.0026	<0.0045
SP-NFDC-50	10/29/2003	Total	N	e% 0.0319	<0.0006	e <0.0004	e% 0.0296	<0.00006	<0.012	e <0.00006	Be% 0.00057	<0.0003	<0.0026	e% 0.0281
SP-NFDC-700	6/18/2002	Dissolved	N	<0.1	0.004	0.002	<0.1	<0.001	<0.05	0.0001	<0.01	--	<0.01	<0.05
SP-NFDC-700	6/18/2002	Total	N	* <0.1	<0.001	0.001	<0.1	<0.001	<0.05	0.0002	<0.01	--	<0.01	<0.05
SP-NFDC-700	8/7/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.1	0.0003	<0.01	--	<0.01	<0.01

TABLE A-3
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PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SP-NFDC-700	8/7/2002	Total	N	e 0.4	<0.001	0.001	<0.1	<0.001	<0.1	e% 0.0024	<0.01	--	<0.01	e% 2.82
SP-NFDC-700	5/19/2003	Dissolved	N	<0.1	<0.003	0.001	<0.1	<0.001	<0.1	<0.0001	0.001	<0.01	<0.01	<0.03
SP-NFDC-700	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-NFDC-700	8/13/2003	Dissolved	N	<0.0086	B 0.0027	<0.0004	0.0193	<0.00007	B 0.0108	<0.0001	B 0.0016	<0.0004	<0.0011	<0.0035
SP-NFDC-700	8/13/2003	Total	N	* <0.0097	<0.0006	<0.0004	0.018	<0.00006	B 0.0152	<0.0001	B 0.00095	<0.0003	<0.0026	B 0.0082
SP-UTNFDC-400	5/21/2002	Dissolved	N	0.1	<0.001	0.001	<0.1	<0.001	<0.05	0.0006	<0.01	--	<0.01	0.08
SP-UTNFDC-400	5/21/2002	Total	N	2.7	<0.001	0.003	<0.1	0.005	<0.05	0.0046	0.01	--	<0.01	1.96
SP-UTNFDC-400	5/20/2003	Dissolved	N	<0.1	<0.003	0.002	<0.1	<0.001	<0.1	0.0007	0.001	<0.01	<0.01	<0.03
SP-UTNFDC-400	5/20/2003	Total	N	0.2	<0.003	0.002	<0.1	<0.001	<0.1	0.0011	0.003	<0.01	<0.01	0.25
SP-UTNFDC-520	9/24/2002	Dissolved	N	<0.1	<0.003	<0.003	0.03	<0.001	<0.1	<0.0001	0.002	--	<0.001	0.35
SP-UTNFDC-520	9/24/2002	Total	N	* <0.1	<0.003	<0.003	0.03	<0.001	<0.1	<0.0001	0.002	--	<0.001	0.33
SP-UTNFDC-520	5/19/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	0.001	<0.01	<0.01	<0.03
SP-UTNFDC-520	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-UTNFDC-520	8/13/2003	Dissolved	N	<0.0086	B 0.002	<0.0004	0.0285	<0.00007	B 0.0102	<0.0001	B 0.0012	<0.0004	<0.0011	<0.0035
SP-UTNFDC-520	8/13/2003	Total	N	*B 0.0192	<0.0006	<0.0004	0.0277	<0.00006	B 0.0142	<0.0001	B 0.00047	<0.0003	<0.0026	0.0273
SP-UTNFDC-540	8/13/2003	Dissolved	N	<0.0086	B 0.0021	B 0.00049	0.0188	B 0.00029	<0.0065	0.00096	B 0.0018	B 0.00077	<0.0011	<0.0035
SP-UTNFDC-540	8/13/2003	Total	N	* 0.0236	<0.0006	B 0.0014	0.0189	<0.00006	<0.012	0.004	B 0.0015	<0.0003	<0.0026	0.179
SP-UTNFDC-540	10/28/2003	Dissolved	N	*< 0.0086	BWe% 0.0021	BW 0.0004	0.0193	<0.00007	B 0.0129	0.0016	Be 0.00094	B 0.00054	<0.0011	<0.0035
SP-UTNFDC-540	10/28/2003	Total	N	0.0862	<0.0006	B 0.0011	0.0205	<0.00007	<0.0065	0.0025	B 0.0044	<0.0004	<0.0011	0.146
SP-UTNFDC-540	5/17/2004	Dissolved	N	--	--	--	--	--	--	*0.0019	--	--	--	<0.0124
SP-UTNFDC-540	5/17/2004	Total	N	--	--	--	--	--	--	0.0021	--	--	--	0.0269
SP-UTNFDC-600	8/6/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.01	--	<0.01	0.02
SP-UTNFDC-600	8/6/2002	Total	N	e 0.2	<0.001	<0.001	<0.1	<0.001	<0.1	e% 0.0007	<0.01	--	<0.01	e% 0.55
SP-UTNFDC-600	5/20/2003	Dissolved	N	<0.1	<0.003	0.002	<0.1	<0.001	<0.1	<0.0001	0.002	<0.01	<0.01	<0.03

TABLE A-3
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PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SP-UTNFDC-600	5/20/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-UTNFDC-600	8/14/2003	Dissolved	N	<0.0097	Be 0.0028	<0.0007	0.0096	<0.00006	<0.012	<0.0001	<0.0003	B 0.00034	<0.0026	e <0.0045
SP-UTNFDC-600	8/14/2003	Total	N	N 0.16	W <0.0006	<0.0007	0.0108	q 0.00013	0.0162	q 0.00014	qe% 0.0017	0.00037	<0.0026	e% 0.309
SP-UTNFDC-600	10/29/2003	Dissolved	N	<0.0097	BWe 0.0027	Be 0.00075	0.0103	<0.00006	<0.012	<0.00006	B 0.0018	B 0.00039	<0.0026	<0.0045
SP-UTNFDC-600	10/29/2003	Total	N	e% 0.025	<0.0006	Be 0.0011	e% 0.01	<0.00006	<0.012	e 0.00022	Be% 0.0022	<0.0003	<0.0026	e% 0.0366
SP-UTNFDC-600	5/18/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SP-UTNFDC-600	5/18/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.412
SP-UTNFDC-600	8/25/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	B 0.0177
SP-UTNFDC-600	8/25/2004	Total	N	--	--	--	--	--	--	0.00026	--	--	--	0.702
SOUTH FORK DEER CREEK														
SW-SFDC-200	5/18/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SW-SFDC-200	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-SFDC-200	8/13/2003	Dissolved	N	<0.0097	Be 0.0018	<0.0007	0.0251	<0.00006	B 0.0158	<0.0001	<0.0003	<0.0003	<0.0026	e 0.0217
SW-SFDC-200	8/13/2003	Dissolved	D	B 0.0138	<0.0006	<0.0007	0.024	<0.00006	<0.012	<0.0001	<0.0003	B 0.00032	<0.0026	0.0275
SW-SFDC-200	8/13/2003	Total	N	N 0.127	<0.0006	<0.0007	0.0257	<0.00006	<0.012	<0.0001	qe% 0.00045	<0.0003	<0.0026	e% 0.21
SW-SFDC-200	8/13/2003	Total	D	N 0.0901	<0.0006	<0.0007	0.0252	<0.00006	<0.012	<0.0001	<0.0003	<0.0003	<0.0026	0.186
SW-SFDC-200	10/28/2003	Dissolved	N	* 0.0204	BWe% 0.0029	<0.0004	0.0265	<0.00007	<0.0065	<0.00006	e <0.0002	B 0.00066	<0.0011	0.0342
SW-SFDC-200	10/28/2003	Total	N	0.174	<0.0006	<0.0004	0.0285	<0.00007	<0.0065	<0.00006	B 0.00066	<0.0004	<0.0011	0.31
SW-SFDC-300	5/22/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	<0.05
SW-SFDC-300	5/22/2002	Total	N	* <0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	0.08
SW-SFDC-300	5/18/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	0.002	<0.01	<0.01	<0.03
SW-SFDC-300	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-SFDC-800	5/23/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	<0.05
SW-SFDC-800	5/23/2002	Total	N	* <0.1	0.002	0.001	<0.1	<0.001	<0.05	0.0002	<0.01	--	<0.01	<0.05

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BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SW-SFDC-800	5/19/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SW-SFDC-800	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-SFDC-800	5/17/2004	Dissolved	N	--	--	--	--	--	--	*0.00022	--	--	--	<0.0124
SW-SFDC-800	5/17/2004	Total	N	--	--	--	--	--	--	0.0002	--	--	--	<0.0124
SW-SFSC-800	9/28/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SW-SFSC-800	9/28/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.0272
SW-UTSFDC-900	5/19/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SW-UTSFDC-900	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-UTSFDC-500	5/22/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	0.06
SP-UTSFDC-500	5/22/2002	Total	N	0.1	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	0.12
SP-UTSFDC-600	10/29/2003	Dissolved	N	<0.0097	BWe 0.0022	e <0.0004	0.0338	<0.00006	<0.012	<0.00006	<0.0003	B 0.00057	<0.0026	<0.0045
SP-UTSFDC-600	10/29/2003	Total	N	e% 0.037	<0.0006	e <0.0004	e% 0.0338	<0.00006	<0.012	e <0.00006	Be% 0.0003	<0.0003	<0.0026	e% 0.0275
WELLS CANYON														
SW-WC-800	5/18/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SW-WC-800	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-WC-800	8/12/2003	Dissolved	N	<0.0097	Be 0.0029	<0.0007	0.0341	<0.00006	<0.012	<0.0001	<0.0003	<0.0003	<0.0026	Be 0.0053
SW-WC-800	8/12/2003	Dissolved	D	B 0.0117	B 0.0018	<0.0007	0.0344	<0.00006	<0.012	<0.0001	<0.0003	<0.0003	<0.0026	B 0.006
SW-WC-800	8/12/2003	Total	N	Ne% 0.146	<0.0006	<0.0007	0.0373	<0.00006	<0.012	q 0.00018	Be% 0.00086	<0.0003	<0.0026	e% 0.135
SW-WC-800	8/12/2003	Total	D	N 0.37	<0.0006	<0.0007	0.0377	<0.00006	<0.012	0.0002	B 0.0016	<0.0003	<0.0026	0.266
SW-WC-800	10/28/2003	Dissolved	N	*< 0.0086	Be% 0.0028	<0.0004	0.0334	<0.00007	<0.0065	<0.00006	Be 0.00066	B 0.00056	<0.0011	<0.0035
SW-WC-800	10/28/2003	Total	N	0.154	<0.0006	B 0.00045	0.0353	<0.00007	<0.0065	M 0.00012	B 0.0014	<0.0004	<0.0011	0.0908
SW-WC-800	5/19/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SW-WC-800	5/19/2004	Dissolved	D	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SW-WC-800	5/19/2004	Total	N	--	--	--	--	--	--	0.00021	--	--	--	e% 0.383

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SW-WC-800	5/19/2004	Total	D	--	--	--	--	--	--	0.00023	--	--	--	0.408
SW-WC-800	8/24/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SW-WC-800	8/24/2004	Total	N	--	--	--	--	--	--	0.00013	--	--	--	0.263
SP-UTWC-300	5/23/2002	Dissolved	N	0.3	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	0.15
SP-UTWC-300	5/23/2002	Total	N	0.4	<0.001	<0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	0.29
SP-UTWC-300	5/18/2003	Dissolved	N	0.2	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	0.08
SP-UTWC-300	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-WC-400	5/20/2002	Dissolved	N	<0.1	<0.001	0.001	<0.1	<0.001	<0.05	<0.0001	<0.01	--	<0.01	<0.05
SP-WC-400	5/20/2002	Total	N	0.4	0.002	0.003	<0.1	<0.001	<0.05	0.0007	<0.01	--	<0.01	0.29
SP-WC-400	8/8/2002	Dissolved	N	<0.1	<0.001	<0.001	<0.1	<0.001	<0.1	0.0002	<0.01	--	<0.01	0.03
SP-WC-400	8/8/2002	Dissolved	D	<0.1	<0.001	<0.001	<0.1	<0.001	<0.1	0.0001	<0.01	--	<0.01	0.03
SP-WC-400	8/8/2002	Total	N	e 0.1	<0.001	<0.001	<0.1	<0.001	<0.1	e% 0.0011	<0.01	--	<0.01	e% 0.72
SP-WC-400	8/8/2002	Total	D	0.3	<0.001	0.001	<0.1	<0.001	<0.1	0.0006	<0.01	--	<0.01	0.35
SP-WC-400	5/18/2003	Dissolved	N	<0.1	<0.003	0.002	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SP-WC-400	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-WC-400	8/13/2003	Dissolved	N	<0.0097	Be 0.0021	<0.0007	0.0177	<0.00006	<0.012	<0.0001	<0.0003	<0.0003	<0.0026	Be 0.0055
SP-WC-400	8/13/2003	Total	N	N 0.888	W <0.0006	0.0011	0.0241	q 0.00008	<0.012	q 0.00081	qe% 0.0064	0.00041	<0.0026	e% 0.616
SP-WC-400	10/28/2003	Dissolved	N	*B 0.015	e% 0.0038	<0.0004	0.0185	<0.00007	<0.0065	<0.00006	Be 0.00075	<0.0004	<0.0011	<0.0035
SP-WC-400	10/28/2003	Dissolved	D	<0.0086	B 0.00071	<0.0004	0.0187	<0.00007	<0.0065	<0.00006	B 0.00098	<0.0004	<0.0011	<0.0035
SP-WC-400	10/28/2003	Total	N	0.77	<0.0006	B 0.00045	0.0247	<0.00007	<0.0065	0.00083	B 0.0057	<0.0004	<0.0011	0.581
SP-WC-400	10/28/2003	Total	D	--	--	--	--	--	--	--	--	--	--	--
SP-WC-400	5/17/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SP-WC-400	5/17/2004	Total	N	--	--	--	--	--	--	0.00022	--	--	--	0.147
SP-WC-400	8/25/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SP-WC-400	8/25/2004	Total	N	--	--	--	--	--	--	0.0037	--	--	--	3.1
SP-WC-750	6/5/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SP-WC-750	6/5/2003	Total	N	* <0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SP-WC-750	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SP-WC-750	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SP-WC-750	8/14/2003	Dissolved	N	<0.0097	Be 0.0013	<0.0007	0.0244	<0.00006	<0.012	<0.0001	<0.0003	<0.0003	<0.0026	e <0.0045
SP-WC-750	8/14/2003	Total	N	Ne% <0.0097	W <0.0006	<0.0007	0.0243	<0.00006	<0.012	<0.0001	qe% 0.00094	<0.0003	<0.0026	e% <0.0045
DIAMOND CREEK														
SW-DMC-200	5/18/2003	Dissolved	N	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	<0.01	<0.03
SW-DMC-200	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
SW-DMC-200	8/14/2003	Dissolved	N	<0.0097	e <0.0006	<0.0007	0.0148	<0.00006	<0.012	<0.0001	<0.0003	B 0.00041	<0.0026	e <0.0045
SW-DMC-200	8/14/2003	Dissolved	D	<0.0097	B 0.00088	<0.0007	0.0146	<0.00006	<0.012	<0.0001	<0.0003	<0.0003	<0.0026	<0.0045
SW-DMC-200	8/14/2003	Total	N	N 0.0314	<0.0006	<0.0007	0.015	<0.00006	<0.012	<0.0001	qe% 0.00042	<0.0003	<0.0026	e% 0.023
SW-DMC-200	8/14/2003	Total	D	N 0.0238	<0.0006	<0.0007	0.015	<0.00006	<0.012	<0.0001	0.00034	<0.0003	<0.0026	0.0228
STEWART CANYON														
SW-ST-500	8/15/2003	Dissolved	N	<0.0097	W <0.0006	<0.0004	0.0088	<0.00006	<0.012	<0.0001	B 0.0012	<0.0003	<0.0026	<0.0045
SW-ST-500	8/15/2003	Total	N	0.04	W <0.0006	<0.0004	0.0093	<0.00006	<0.012	0.00041	B 0.0014	<0.0003	<0.0026	* 0.0868
SW-ST-500	5/18/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SW-ST-500	5/18/2004	Total	N	--	--	--	--	--	--	0.00021	--	--	--	0.106
SW-ST-500	8/26/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SW-ST-500	8/26/2004	Total	N	--	--	--	--	--	--	0.00048	--	--	--	0.222
SW-ST-700	8/26/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SW-ST-700	8/26/2004	Dissolved	D	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SW-ST-700	8/26/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	B 0.0163

TABLE A-3
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PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SW-ST-700	8/26/2004	Total	D	--	--	--	--	--	--	<0.0001	--	--	--	0.0204
SP-ST-100	8/15/2003	Dissolved	N	<0.0097	BW 0.00073	<0.0004	0.022	<0.00006	<0.012	<0.0001	B 0.00094	B 0.00065	<0.0026	<0.0045
SP-ST-100	8/15/2003	Total	N	* <0.0097	<0.0006	<0.0004	0.0224	<0.00006	<0.012	<0.0001	B 0.00072	<0.0003	<0.0026	*< 0.0045
SP-ST-100	5/18/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SP-ST-100	5/18/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SP-ST-100	8/26/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SP-ST-100	8/26/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SP-ST-200	8/15/2003	Dissolved	N	<0.0097	W <0.0006	<0.0004	0.0222	<0.00006	<0.012	<0.0001	B 0.001	B 0.00049	<0.0026	<0.0045
SP-ST-200	8/15/2003	Total	N	* <0.0097	W <0.0006	<0.0004	0.022	<0.00006	<0.012	<0.0001	B 0.0009	<0.0003	<0.0026	*B 0.0089
SP-ST-200	5/18/2004	Dissolved	N	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SP-ST-200	5/18/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	0.0273
SP-ST-200	8/26/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	--	<0.0124
SP-ST-200	8/26/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	--	B 0.0193
LAMB CANYON														
SW-LC-500	8/15/2003	Dissolved	N	<0.0097	BW 0.00082	<0.0004	0.0152	B 0.00011	B 0.0122	<0.0001	B 0.0016	B 0.00035	<0.0026	<0.0045
SW-LC-500	8/15/2003	Total	N	0.0679	W <0.0006	<0.0004	0.0159	<0.00006	<0.012	0.00042	B 0.0017	<0.0003	B 0.0029	* 0.111
CLEAR CREEK														
SW-CL-800	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SW-CL-800	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
WHITE DUGWAY CREEK														
SW-WD-800	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--
SW-WD-800	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
WARM CREEK														
SW-WM-800	7/30/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--

TABLE A-3
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PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**NE**	**4.3**	**0.05**	**NE**	**NE**	**NE**	**0.001h**	**0.01+**	**NE**	**0.011h**	**NE**
SW-WM-800	7/30/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--
PRESERVATIVE BLANK														
SW-OC-200	5/20/2003	Dissolved	B	<0.1	<0.003	<0.001	<0.1	<0.001	<0.1	<0.0001	<0.001	<0.01	0.02	<0.03
SW-OC-200	5/20/2003	Total	B	--	--	--	--	--	--	--	--	--	--	--
SW-OC-200	8/14/2003	Dissolved	B	<0.0097	<0.0006	<0.0007	<0.0005	<0.00006	<0.012	<0.0001	<0.0003	<0.0003	0.0192	<0.0045
SW-OC-200	8/14/2003	Total	B	N <0.0097	<0.0006	<0.0007	<0.0005	0.00007	<0.012	M 0.00011	0.0003	<0.0003	0.0211	<0.0045
SW-OC-200	10/30/2003	Dissolved	B	--	--	--	--	--	--	--	--	--	--	--
SW-OC-200	10/30/2003	Total	B	* <0.0097	<0.0003	WN <0.0006	<0.0005	<0.00006	<0.012	0.00011	B 0.00051	<0.0003	0.0188	*< 0.0045
SW-OC-200	5/19/2004	Dissolved	B	--	--	--	--	--	--	*<0.0001	--	--	--	<0.0124
SW-OC-200	5/19/2004	Total	B	--	--	--	--	--	--	<0.0001	--	--	--	e% <0.0124

Notes:

B	Not detected above quantitation limit but present above method detection limit (SVL).
D	Field duplicate sample
J	Estimated value (Northern Analytical).
N	Located in the QC column indicates natural sample.
N	Located in analyte column indicates percent recovery not within control limits 75-125% (
NE	Not Established
M	Duplicate precision goal not met (SVL).
W	Post-digestion spike recovery out of control limits 85-115% (SVL).
<	Indicates analyte not detected above laboratory practical quantification limit (PQL).
(mg/L)	Milligrams per liter
*	Dulicate analysis not within control limits (SVL).
(1)	Verified by a second analysis (Northern Analytical).
--	Field data or laboratory samples were not collected or analyzed.
H	Sample analyzed out of holding time.
e	Field duplicate results exceed acceptable limits - PQL based determination.
e%	Field duplicate results exceed acceptable limits - relative percent difference determination.
q	Associated values are estimates - field blank showed evidence of contamination.
**	The surface water standards value is the lowest concentration for cold water biota for Criteria Maximum Concentration (CMC), Criteria Continuous Concentration (CCC), or human consumption of organisms. Standards from IDAPA 58.01.02.210 + 250. For Idaho, water quality standards are based on the dissolved fraction for metals in surface water (except total fraction for selenium and mercury as CCC). Standard values followed by an "h" indicate the aquatic life criteria are expressed as a function of total hardness and water effect ratio (WER). Hardness dependent standards are calculated for each watershed based on the average observed hardness. Standards shown are based on hardness of 100 mg/L.
	Shading indicates results above Idaho DEQ Standards, regardless of physical state (Total or Dissolved).
+	Chromium standard of 0.01 mg/l is for Chromium VI; the chromium III standard is 0.18 mg/l for CCC and is hardness dependent.

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
CROW CREEK															
SW-CC-50	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-CC-50	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-CC-50	5/19/2004	Dissolved	N	<0.0007	0.0394	<0.0002	--	<0.0013	B 0.00051	--	--	--	--	--	B 0.0014
SW-CC-50	5/19/2004	Total	N	B 0.001	0.0478	<0.0002	--	<0.0013	Be% 0.00051	--	--	--	--	--	B 0.003
SW-CC-50	8/24/2004	Dissolved	N	B 0.00063	0.0269	<0.0001	--	0.013	N< 0.0003	--	--	--	--	--	Be 0.00097
SW-CC-50	8/24/2004	Total	N	<0.0004	0.033	<0.0001	--	<0.0013	Be 0.0003	--	--	--	--	--	B 0.0016
SW-CC-100	8/15/2003	Dissolved	N	W <0.0003	0.0071	<0.0001	0.011	<0.001	<0.0002	--	--	<0.0001	<0.0005	B 0.0019	<0.0018
SW-CC-100	8/15/2003	Total	N	<0.0003	0.0102	<0.0001	0.0086	<0.001	BN 0.00028	--	--	<0.0001	<0.0003	B 0.002	<0.0018
SW-CC-100	10/29/2003	Dissolved	N	<0.0004	0.0077	<0.0001	0.0087	B 0.0023	B 0.0005	--	--	<0.0001	<0.0003	B 0.0018	0.0018
SW-CC-100	10/29/2003	Dissolved	D	<0.0004	0.0064	<0.0001	B 0.0079	B 0.0025	B 0.00068	--	--	<0.0001	<0.0003	B 0.0016	0.0018
SW-CC-100	10/29/2003	Total	N	B 0.00069	e% 0.0774	<0.0001	0.0096	<0.001	Be 0.00097	<0.0002	Be 0.00097	<0.0001	<0.0003	Be% 0.0039	e% 0.0095
SW-CC-100	10/29/2003	Total	D	<0.0004	0.0096	<0.0001	0.0102	<0.001	B 0.00075	<0.0002	B 0.00075	<0.0001	W <0.0003	B 0.0018	<0.0018
SW-CC-100	5/19/2004	Dissolved	N	<0.0007	0.0052	<0.0002	--	<0.0013	B 0.00092	--	--	--	--	--	<0.0002
SW-CC-100	5/19/2004	Total	N	B 0.001	0.0185	<0.0002	--	<0.0013	Be% 0.00097	--	--	--	--	--	B 0.002
SW-CC-100	8/24/2004	Dissolved	N	<0.0004	0.0057	<0.0001	--	0.0166	BN 0.00078	--	--	--	--	--	Be 0.0013
SW-CC-100	8/24/2004	Total	N	<0.0004	0.0155	<0.0001	--	<0.0013	Be 0.00097	--	--	--	--	--	B 0.0012
SW-CC-300	5/20/2003	Dissolved	N	<0.002	e <0.01	<0.0001	<0.005	<0.01	e 0.001	<0.001	e 0.001	<0.001	<0.002	<0.005	e <0.01
SW-CC-300	5/20/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-CC-300	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-CC-300	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-CC-300	8/12/2003	Dissolved	N	e <0.0003	e 0.0074	<0.0001	0.0101	B 0.001	<0.0002	--	--	<0.0001	<0.0005	B 0.0019	<0.0018
SW-CC-300	8/12/2003	Total	N	Be% 0.00083	0.0175	<0.0001	q 0.0114	<0.001	--	--	--	N 0.0001	<0.0005	B 0.0021	<0.0018
SW-CC-300	5/19/2004	Dissolved	N	<0.0007	0.0131	<0.0002	--	<0.0013	B 0.00067	--	--	--	--	--	B 0.0034

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SW-CC-300	5/19/2004	Total	N	B 0.001	0.021	<0.0002	--	<0.0013	Be% 0.00048	--	--	--	--	--	B 0.0022
SW-CC-300	8/24/2004	Dissolved	N	W <0.0004	0.0072	<0.0001	--	B 0.0097	BN 0.00037	--	--	--	--	--	e <0.0002
SW-CC-300	8/24/2004	Total	N	<0.0004	0.0117	<0.0001	--	<0.0013	Be 0.00063	--	--	--	--	--	<0.0002
SW-CC-800	5/20/2003	Dissolved	N	<0.002	e 0.01	<0.0001	<0.005	<0.01	e 0.002	<0.001	e 0.002	<0.001	<0.002	<0.005	e <0.01
SW-CC-800	5/20/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-CC-800	8/15/2003	Dissolved	N	<0.0003	0.0032	<0.0001	0.013	<0.001	<0.0002	--	--	<0.0001	<0.0005	B 0.002	<0.0018
SW-CC-800	8/15/2003	Total	N	<0.0003	0.0215	<0.0001	0.0097	<0.001	N <0.0002	--	--	N <0.0001	<0.0003	B 0.0021	<0.0018
SW-CC-800	5/19/2004	Dissolved	N	<0.0007	0.022	<0.0002	--	<0.0013	B 0.00078	--	--	--	--	--	B 0.0025
SW-CC-800	5/19/2004	Dissolved	D	<0.0007	0.0213	<0.0002	--	<0.0013	B 0.00079	--	--	--	--	--	B 0.0018
SW-CC-800	5/19/2004	Total	N	B 0.00082	0.0299	<0.0002	--	<0.0013	Be% 0.00081	--	--	--	--	--	B 0.001
SW-CC-800	5/19/2004	Total	D	B 0.00082	0.0297	<0.0002	--	<0.0013	B 0.00031	--	--	--	--	--	B 0.00096
SW-CC-800	8/24/2004	Dissolved	N	<0.0004	<0.001	<0.0001	--	0.0107	BN 0.00076	--	--	--	--	--	e <0.0002
SW-CC-800	8/24/2004	Total	N	<0.0004	0.0054	<0.0001	--	<0.0013	e 0.0017	--	--	--	--	--	<0.0002
SP-UTCC-50	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-UTCC-50	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-RIEDE	7/30/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-RIEDE	7/30/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-BOOKS	6/5/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-BOOKS	6/5/2003	Total	N	<0.002	0.02	<0.0002	<0.005	<0.01	--	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SP-BOOKS	7/30/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-BOOKS	7/30/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-BOOKS	8/14/2003	Dissolved	N	Be 0.0007	e 0.0236	<0.0001	0.0113	<0.001	<0.0002	--	--	W <0.0001	<0.0005	B 0.0011	B 0.0021
SP-BOOKS	8/14/2003	Total	N	qe% 0.00062	0.0211	<0.0001	q 0.0113	<0.001	--	--	--	N <0.0001	<0.0005	0.00096	<0.0018
SP-BOOKS	5/19/2004	Dissolved	N	<0.0007	0.0035	<0.0002	--	<0.0013	B 0.00062	--	--	--	--	--	B 0.002

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SP-BOOKS	5/19/2004	Total	N	B 0.001	0.0024	<0.0002	--	<0.0013	e%B 0.00058	--	--	--	--	--	B 0.0012
SP-BOOKS	8/24/2004	Dissolved	N	<0.0004	<0.001	<0.0001	--	0.0112	BN 0.00082	--	--	--	--	--	Be 0.001
SP-BOOKS	8/24/2004	Dissolved	D	B 0.00043	B 0.0011	<0.0001	--	0.011	BN 0.00051	--	--	--	--	--	<0.0002
SP-BOOKS	8/24/2004	Total	N	<0.0004	<0.001	<0.0001	--	<0.0013	Be 0.00093	--	--	--	--	--	<0.0002
SP-BOOKS	8/24/2004	Total	D	<0.0004	<0.001	<0.0001	--	<0.0013	B 0.00072	--	--	--	--	--	<0.0002
SP-CC-500	7/30/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-CC-500	7/30/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-QH-800	10/30/2003	Dissolved	N	<0.0004	0.0563	<0.0001	0.0108	<0.001	B 0.00077	--	--	<0.0001	<0.0003	B 0.0014	<0.0018
SP-QH-800	10/30/2003	Total	N	B 0.0018	q 0.128	<0.0001	q 0.0125	<0.001	B 0.00099	<0.0002	B 0.00099	<0.0001	<0.0003	B 0.0038	q 0.01
SOUTH FORK SAGE CREEK															
SW-SFSC-200	5/20/2003	Dissolved	N	<0.002	e <0.01	<0.0001	<0.005	<0.01	e <0.001	<0.001	e <0.001	<0.001	<0.002	<0.005	e <0.01
SW-SFSC-200	5/20/2003	Total	N	<0.002	<0.01	0.0002	<0.005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SW-SFSC-200	8/12/2003	Dissolved	N	<0.0003	B 0.0018	N <0.0001	B 0.0053	<0.0011	<0.0002	--	--	W <0.0001	B 0.00034	B 0.00042	<0.0017
SW-SFSC-200	8/12/2003	Total	N	B 0.00065	B 0.0018	<0.0001	0.0104	<0.001	<0.0002	<0.0002	<0.0002	W <0.0001	B 0.00035	B 0.00025	<0.0018
SW-SFSC-500	5/20/2002	Dissolved	N	<0.001	<0.02	<0.0002	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	<0.02
SW-SFSC-500	5/20/2002	Total	N	<0.001	<0.02	<0.0002	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	<0.02
SW-SFSC-500	8/12/2003	Dissolved	N	<0.0003	B 0.0011	N <0.0001	B 0.0049	<0.0011	<0.0002	--	--	W <0.0001	B 0.00034	B 0.00057	<0.0017
SW-SFSC-500	8/12/2003	Total	N	B 0.00073	0.004	<0.0001	0.0106	<0.001	<0.0002	--	--	W <0.0001	<0.0003	B 0.00036	<0.0018
SW-SFSC-800	8/12/2003	Dissolved	N	<0.0003	0.0027	N <0.00025	B 0.006	<0.0011	B 0.00024	--	--	W <0.0001	<0.0003	B 0.0015	<0.0017
SW-SFSC-800	8/12/2003	Total	N	B 0.00073	0.0064	<0.0001	0.0133	<0.001	B 0.00053	<0.0002	B 0.00053	W <0.0001	<0.0003	B 0.0015	<0.0018
SW-SFSC-800	5/18/2004	Dissolved	N	<0.001	B 0.0012	<0.0002	--	B 0.004	0.0021	--	--	--	--	--	B 0.0008
SW-SFSC-800	5/18/2004	Total	N	W <0.001	0.0034	<0.0002	--	<0.0013	0.0021	--	--	--	--	--	B 0.0017
SP-SFSC-100	10/28/2003	Dissolved	N	<0.0004	B 0.0018	<0.0001	B 0.0069	<0.0011	<0.0002	--	--	<0.0001	<0.0003	B 0.00043	<0.0017
SP-SFSC-100	10/28/2003	Total	N	B 0.00057	0.0023	<0.0001	B 0.0074	<0.0011	<0.0002	<0.0002	<0.0002	<0.0001	<0.0003	B 0.00051	<0.0017

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SP-UTSFSC-100	5/21/2002	Dissolved	N	<0.001	<0.02	<0.0002	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	<0.02
SP-UTSFSC-100	5/21/2002	Total	N	<0.001	<0.02	<0.0002	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	<0.02
SP-UTSFSC-100	8/6/2002	Dissolved	N	0.004	<0.02	JH <0.0005	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	e <0.02
SP-UTSFSC-100	8/6/2002	Total	N	<0.001	e <0.02	JH <0.0005	--	<0.02	0.001	<0.001	e% <0.001	<0.001	<0.002	<0.005	0.03
SP-UTSFSC-100	5/20/2003	Dissolved	N	<0.002	e <0.01	<0.0001	<0.005	<0.01	e <0.001	<0.001	e <0.001	<0.001	<0.002	<0.005	e <0.01
SP-UTSFSC-100	5/20/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-UTSFSC-100	8/12/2003	Dissolved	N	Be 0.00031	e 0.0121	<0.0001	0.0103	B 0.0015	<0.0002	--	--	<0.0001	<0.0005	B 0.00043	<0.0018
SP-UTSFSC-100	8/12/2003	Total	N	qe% 0.0021	0.122	<0.0001	q 0.0112	<0.001	B 0.00026	<0.0002	B 0.00026	N <0.0001	<0.0005	B 0.0017	q 0.0069
SP-UTSFSC-200	9/23/2002	Dissolved	N	<0.003	<0.005	<0.0002	--	<0.02	<0.001	<0.001	<0.001	<0.0005	<0.002	<0.05	<0.01
SP-UTSFSC-200	9/23/2002	Total	N	<0.003	0.039	<0.0002	--	<0.02	0.002	<0.001	<0.001	<0.0005	<0.002	<0.05	<0.01
SP-UTSFSC-200	5/20/2003	Dissolved	N	<0.002	e 0.04	<0.0001	<0.005	<0.01	e <0.001	<0.001	e <0.001	<0.001	<0.002	<0.005	e <0.01
SP-UTSFSC-200	5/20/2003	Dissolved	D	<0.002	<0.01	<0.0001	<0.005	<0.01	0.005	<0.001	0.005	<0.001	<0.002	<0.005	0.03
SP-UTSFSC-200	5/20/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-UTSFSC-200	5/20/2003	Total	D	--	--	--	--	--	--	--	--	--	--	--	--
SP-UTSFSC-200	8/12/2003	Dissolved	N	e <0.0003	e 0.0058	<0.0001	0.0113	<0.001	<0.0002	--	--	<0.0001	<0.0005	<0.0002	<0.0018
SP-UTSFSC-200	8/12/2003	Total	N	Be% 0.0012	0.0174	<0.0001	q 0.013	<0.001	<0.0002	<0.0002	<0.0002	N <0.0001	<0.0005	B 0.00027	<0.0018
SP-UTSFSC-200	10/29/2003	Dissolved	N	<0.0004	0.0062	<0.0001	0.0114	B 0.0016	<0.0002	--	--	<0.0001	<0.0002	<0.0002	0.0018
SP-UTSFSC-200	10/29/2003	Total	N	<0.0004	e% 0.0114	<0.0001	0.0101	<0.001	e <0.0002	<0.0002	e <0.0002	<0.0001	<0.0003	e% <0.0002	e% <0.0018
SP-SFSC-750	7/28/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-SFSC-750	7/28/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-SFSC-750	8/12/2003	Dissolved	N	<0.0003	<0.0003	N <0.0005	B 0.007	<0.0011	<0.0002	--	--	W <0.0001	<0.0003	B 0.0017	<0.0017
SP-SFSC-750	8/12/2003	Total	N	B 0.00058	B 0.0011	<0.0001	0.013	<0.001	0.001	<0.0002	0.001	W <0.0001	<0.0003	B 0.0015	<0.0018
SP-SFSC-750	9/28/2004	Dissolved	N	W <0.0004	B 0.0011	<0.0002	--	B 0.0066	--	0.0017	--	--	--	--	B 0.00031
SP-SFSC-750	9/28/2004	Total	N	<0.0004	0.0034	<0.0002	--	<0.0013	0.0018	--	--	--	--	--	<0.0002

TABLE A-3
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ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SP-SFSC-750	10/13/2004	Dissolved	N	B 0.0011	B 0.0019	<0.0002	--	<0.0013	B 0.0008	--	--	--	--	--	S 0.0076
SP-SFSC-750	10/13/2004	Total	N	B 0.00069	0.0024	<0.0002	--	<0.0013	0.001	--	--	--	--	--	B 0.0023
SP-HOOPES	7/28/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-HOOPES	7/28/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-UTSC-850	5/18/2004	Dissolved	N	<0.001	0.119	<0.0002	--	B 0.0076	0.008	--	--	--	--	--	B 0.0021
SP-UTSC-850	5/18/2004	Total	N	W <0.001	0.14	--	--	<0.0013	0.0084	--	--	--	--	--	B 0.0037
SP-UTSC-850	9/28/2004	Dissolved	N	<0.0004	0.0298	<0.0002	--	B 0.0068	--	B0.00053	--	--	--	--	B 0.00036
SP-UTSC-850	9/28/2004	Total	N	W <0.0004	0.036	<0.0002	--	<0.0013	B 0.00073	--	--	--	--	--	B 0.0017
MANNING CREEK															
SP-MC-300	5/21/2002	Dissolved	N	<0.001	<0.02	<0.0002	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	<0.02
SP-MC-300	5/21/2002	Total	N	<0.001	<0.02	<0.0002	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	<0.02
SP-MC-300	5/20/2003	Dissolved	N	<0.002	e <0.01	<0.0001	<0.005	<0.01	e <0.001	<0.001	e <0.001	<0.001	<0.002	<0.005	e <0.01
SP-MC-300	5/20/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-MC-300	8/25/2004	Dissolved	N	<0.0004	0.221	<0.0001	--	0.0104	N< 0.0003	--	--	--	--	--	e <0.0002
SP-MC-300	8/25/2004	Total	N	0.0265	2.22	B 0.00013	--	0.0244	e 0.0016	--	--	--	--	--	0.189
DEER CREEK															
SW-DC-200	5/18/2003	Dissolved	N	<0.002	0.01	<0.0001	<0.005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SW-DC-200	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-DC-200	8/14/2003	Dissolved	N	Be 0.0007	e 0.01	<0.0001	0.0096	<0.001	<0.0002	--	--	W <0.0001	<0.0005	B 0.00055	<0.0018
SW-DC-200	8/14/2003	Total	N	qe% 0.00083	0.0121	<0.0001	q 0.0107	<0.001	--	--	--	N <0.0001	<0.0005	0.00059	<0.0018
SW-DC-200	5/20/2004	Dissolved	N	<0.0007	B 0.0012	<0.0002	--	<0.0013	0.0015	--	--	--	--	--	B 0.00097
SW-DC-200	5/20/2004	Total	N	B 0.00082	0.0033	<0.0002	--	<0.0013	Be% 0.0016	--	--	--	--	--	B 0.001
SW-DC-200	8/25/2004	Dissolved	N	<0.0004	0.0142	B 0.00018	--	0.0126	N 0.0012	--	--	--	--	--	Be 0.00031
SW-DC-200	8/25/2004	Total	N	<0.0004	0.0284	<0.0001	--	<0.0013	e 0.0016	--	--	--	--	--	B 0.0013

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BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SW-DC-300	5/22/2002	Dissolved	N	<0.001	<0.02	<0.0002	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	<0.02
SW-DC-300	5/22/2002	Total	N	<0.001	0.03	<0.0002	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	0.04
SW-DC-300	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SW-DC-300	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-DC-400	5/22/2002	Dissolved	N	0.002	<0.02	e <0.0002	--	<0.02	0.001	<0.001	<0.001	<0.001	<0.002	<0.005	0.64
SW-DC-400	5/22/2002	Total	N	<0.001	<0.02	<0.0002	--	<0.02	0.002	<0.001	0.001	<0.001	<0.002	<0.005	<0.02
SW-DC-400	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	0.001	<0.001	0.001	<0.001	<0.002	<0.005	<0.01
SW-DC-400	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-DC-400	5/17/2004	Dissolved	N	W <0.001	B 0.0011	<0.0002	--	B 0.0054	0.0011	--	--	--	--	--	B 0.0034
SW-DC-400	5/17/2004	Total	N	W <0.001	B 0.0015	<0.0002	--	<0.0013	0.0011	--	--	--	--	--	B 0.003
SW-DC-500	5/23/2002	Dissolved	N	<0.001	<0.02	e 0.0005	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	<0.02
SW-DC-500	5/23/2002	Dissolved	D	<0.001	<0.02	<0.0002	--	<0.02	0.001	<0.001	0.001	<0.001	<0.002	<0.005	<0.02
SW-DC-500	5/23/2002	Total	N	0.001	<0.02	0.001	--	<0.02	0.001	<0.001	0.001	<0.001	<0.002	<0.005	<0.02
SW-DC-500	5/23/2002	Total	D	<0.001	<0.02	<0.0002	--	<0.02	0.001	<0.001	0.001	<0.001	<0.002	<0.005	<0.02
SW-DC-500	8/7/2002	Dissolved	N	0.004	<0.02	JH <0.0005	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	e 0.05
SW-DC-500	8/7/2002	Total	N	0.001	e 0.02	JH <0.0005	--	<0.02	0.002	<0.001	e% 0.001	<0.001	<0.002	<0.005	0.1
SW-DC-500	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	0.001	<0.001	0.001	<0.001	<0.002	<0.005	<0.01
SW-DC-500	5/19/2003	Total	N	0.003	0.02	0.0002	<0.005	<0.01	0.001	<0.001	0.001	<0.001	<0.002	<0.005	<0.01
SW-DC-500	8/13/2003	Dissolved	N	W <0.0003	0.0155	N <0.0001	B 0.0068	<0.0011	<0.0002	--	--	<0.0001	B 0.00034	B 0.0014	<0.0017
SW-DC-500	8/13/2003	Total	N	B 0.0014	0.0822	<0.0001	0.0124	<0.001	B 0.0007	<0.0002	B 0.0007	<0.0001	<0.0003	B 0.0017	B 0.0031
SW-DC-500	10/28/2003	Dissolved	N	<0.0004	0.0048	<0.0001	0.0095	<0.0011	0.00093	--	--	<0.0001	W <0.0003	B 0.0014	B 0.0034
SW-DC-500	10/28/2003	Total	N	B 0.00046	0.0118	<0.0001	0.0095	<0.0011	B 0.0011	<0.0002	0.0011	<0.0001	<0.0003	B 0.0012	<0.0017
SW-DC-500	5/17/2004	Dissolved	N	<0.001	0.0036	<0.0002	--	B 0.0053	0.0012	--	--	--	--	--	B 0.0021
SW-DC-500	5/17/2004	Total	N	<0.001	0.0351	--	--	<0.0013	0.0012	--	--	--	--	--	B 0.005

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SW-DC-500	8/26/2004	Dissolved	N	<0.0004	0.0086	<0.0001	--	0.0131	BN 0.00055	--	--	--	--	--	Be 0.0003
SW-DC-500	8/26/2004	Total	N	<0.0004	0.0546	<0.0001	--	<0.0013	Be 0.00072	--	--	--	--	--	B 0.0026
SW-DC-800	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	0.002	<0.001	0.002	<0.001	<0.002	<0.005	<0.01
SW-DC-800	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-DC-800	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-DC-800	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-DC-800	8/12/2003	Dissolved	N	e <0.0003	e 0.0098	<0.0001	0.0113	<0.001	<0.0002	--	--	<0.0001	<0.0005	B 0.0024	<0.0018
SW-DC-800	8/12/2003	Total	N	Be% 0.001	0.0184	<0.0001	q 0.0126	<0.001	0.0012	0.00032	B 0.00093	<0.0001	<0.0005	B 0.0026	<0.0018
SW-DC-800	10/30/2003	Dissolved	N	B 0.00053	0.0144	<0.0001	0.0129	<0.001	0.0018	--	--	<0.0001	<0.0003	B 0.0013	<0.0018
SW-DC-800	10/30/2003	Total	N	B 0.00043	q 0.0173	<0.0001	q 0.0128	<0.001	q 0.0018	--	--	<0.0001	<0.0003	B 0.0016	<0.0018
SW-DC-800	5/19/2004	Dissolved	N	W <0.0007	0.0126	<0.0002	--	<0.0013	0.0018	--	--	--	--	--	B 0.0017
SW-DC-800	5/19/2004	Total	N	<0.0007	0.0186	<0.0002	--	<0.0013	Be% 0.0017	--	--	--	--	--	B 0.0013
SW-DC-800	8/24/2004	Dissolved	N	B 0.00045	0.0098	<0.0001	--	0.0129	N 0.0012	--	--	--	--	--	e <0.0002
SW-DC-800	8/24/2004	Total	N	<0.0004	0.0181	<0.0001	--	<0.0013	e 0.0015	--	--	--	--	--	B 0.00041
SP-DC-100	10/29/2003	Dissolved	N	<0.0004	0.0053	<0.0001	0.0134	0.0103	0.003	--	--	<0.0001	<0.0003	B 0.0042	0.0501
SP-DC-100	10/29/2003	Total	N	<0.0004	Be% 0.0016	<0.0001	0.0139	<0.001	e 0.0034	--	--	<0.0001	W <0.0003	Be% 0.0046	e% 0.0487
SP-DC-350	8/8/2002	Dissolved	N	<0.001	<0.02	JH <0.0005	--	<0.02	0.006	<0.001	0.003	<0.001	<0.002	<0.005	e 0.08
SP-DC-350	8/8/2002	Total	N	<0.001	e <0.02	JH <0.0005	--	<0.02	0.006	<0.001	e% 0.004	<0.001	<0.002	<0.005	0.1
SP-DC-350	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	0.002	<0.001	0.002	<0.001	<0.002	<0.005	<0.01
SP-DC-350	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-DC-350	8/13/2003	Dissolved	N	e <0.0003	e 0.0037	<0.0001	0.0095	B 0.0052	B 0.00029	--	--	<0.0001	<0.0005	B 0.0031	q 0.028
SP-DC-350	8/13/2003	Total	N	qe% 0.00042	0.0013	<0.0001	q 0.011	<0.001	0.0035	<0.0002	0.0035	N <0.0001	<0.0005	0.0033	q 0.0256
SP-DC-350	5/17/2004	Dissolved	N	<0.001	<0.001	<0.0002	--	B 0.0075	0.0028	--	--	--	--	--	0.0108
SP-DC-350	5/17/2004	Total	N	W <0.001	0.0022	<0.0002	--	<0.0013	0.0029	--	--	--	--	--	0.193

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SP-DC-350	8/25/2004	Dissolved	N	<0.0004	<0.001	<0.0001	--	0.0165	N 0.0028	--	--	--	--	--	e 0.0269
SP-DC-350	8/25/2004	Total	N	<0.0004	0.0401	<0.0001	--	0.0103	e 0.0045	--	--	--	--	--	0.0652
SP-UTDC-700	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	0.01	<0.001	0.01	<0.001	<0.002	0.016	0.01
SP-UTDC-700	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-UTDC-700	8/14/2003	Dissolved	N	e <0.0003	e 0.0101	<0.0001	B 0.0062	B 0.0043	B 0.00039	--	--	<0.0001	<0.0005	0.0134	<0.0018
SP-UTDC-700	8/14/2003	Total	N	qe% 0.0011	0.0376	<0.0001	q 0.0071	0.0133	--	--	--	<0.0001	<0.0005	0.0197	q 0.0797
SP-UTDC-700	10/28/2003	Dissolved	N	<0.0004	0.188	<0.0001	0.0097	B 0.0013	0.0037	--	--	W <0.0001	W <0.0003	0.0093	0.0079
SP-UTDC-700	10/28/2003	Total	N	0.0036	0.294	<0.0001	0.0105	0.0266	0.0068	--	--	B 0.00057	B 0.00034	0.032	0.225
SP-UTDC-700	5/17/2004	Dissolved	N	<0.001	B 0.0013	<0.0002	--	0.0199	0.0073	--	--	--	--	--	0.0606
SP-UTDC-700	5/17/2004	Total	N	<0.001	0.0192	<0.0002	--	0.0145	0.0075	--	--	--	--	--	0.0763
SP-UTDC-700	8/26/2004	Dissolved	N	W <0.0004	0.0067	<0.0001	--	0.0323	N 0.003	--	--	--	--	--	0.0815
SP-UTDC-700	8/26/2004	Total	N	0.0032	0.66	0.00027	--	0.29	e 0.0078	--	--	--	--	--	1.15
SP-UTDC-800	9/25/2002	Dissolved	N	<0.003	<0.005	<0.0002	--	<0.02	0.002	0.002	<0.001	<0.0005	<0.002	<0.05	0.06
SP-UTDC-800	9/25/2002	Total	N	<0.003	0.019	<0.0002	--	0.03	0.003	0.002	<0.001	<0.0005	<0.002	<0.05	0.09
SP-UTDC-800	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	0.006	<0.01	0.015	<0.001	0.015	<0.001	<0.002	0.005	0.04
SP-UTDC-800	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-UTDC-800	8/13/2003	Dissolved	N	e <0.0003	e 0.003	<0.0001	0.0267	q 0.0179	B 0.00048	--	--	<0.0001	<0.0005	B 0.002	q 0.0786
SP-UTDC-800	8/13/2003	Total	N	qe% 0.00058	0.0083	<0.0001	q 0.0277	0.0098	0.0029	<0.0002	0.0029	N <0.0001	<0.0005	0.0026	q 0.0838
SP-UTDC-800	10/28/2003	Dissolved	N	<0.0004	B 0.00036	<0.0001	0.0284	0.0174	0.0023	--	--	W <0.0001	W <0.0003	B 0.0024	0.0981
SP-UTDC-800	10/28/2003	Total	N	B 0.001	0.0139	<0.0001	0.0297	0.0244	0.0032	<0.0002	0.0032	B 0.00027	<0.0003	0.0177	0.163
SP-UTDC-800	5/17/2004	Dissolved	N	W <0.001	0.0322	<0.0002	--	B 0.0085	0.0065	--	--	--	--	--	0.0077
SP-UTDC-800	5/17/2004	Total	N	<0.001	0.0563	<0.0002	--	0.0128	0.0069	--	--	--	--	--	0.0862
NORTH FORK DEER CREEK															
SW-NFDC-200	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	0.002	<0.001	0.002	<0.001	<0.002	<0.005	<0.01

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SW-NFDC-200	5/19/2003	Dissolved	D	<0.002	<0.01	<0.0001	<0.005	<0.01	0.001	<0.001	0.001	<0.001	<0.002	<0.005	<0.01
SW-NFDC-200	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-NFDC-200	5/19/2003	Total	D	--	--	--	--	--	--	--	--	--	--	--	--
SW-NFDC-500	5/22/2002	Dissolved	N	<0.001	<0.02	e 0.0002	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	0.03
SW-NFDC-500	5/22/2002	Total	N	<0.001	<0.02	0.0005	--	<0.02	0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.02
SW-NFDC-500	8/7/2002	Dissolved	N	<0.001	0.04	JH <0.0005	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	e 0.07
SW-NFDC-500	8/7/2002	Total	N	<0.001	e 0.09	JH <0.0005	--	<0.02	0.002	<0.001	e% 0.001	<0.001	<0.002	<0.005	0.05
SW-NFDC-500	5/19/2003	Dissolved	N	<0.002	0.01	<0.0001	<0.005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SW-NFDC-500	5/19/2003	Dissolved	D	<0.002	<0.01	<0.0001	<0.005	<0.01	0.002	<0.001	0.002	<0.001	<0.002	<0.005	<0.01
SW-NFDC-500	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-NFDC-500	5/19/2003	Total	D	--	--	--	--	--	--	--	--	--	--	--	--
SW-NFDC-500	8/13/2003	Dissolved	N	W <0.0003	0.0441	N <0.0001	B 0.0053	<0.0011	<0.0002	--	--	<0.0001	B 0.00047	B 0.00056	<0.0017
SW-NFDC-500	8/13/2003	Total	N	B 0.00058	0.117	<0.0001	0.0111	<0.001	<0.0002	--	--	<0.0001	<0.0003	B 0.00047	<0.0018
SW-NFDC-500	10/28/2003	Dissolved	N	<0.0004	0.0591	<0.0001	0.0081	<0.0011	<0.0002	--	--	<0.0001	W <0.0003	B 0.00059	<0.0017
SW-NFDC-500	10/28/2003	Total	N	B 0.00046	0.0984	<0.0001	0.0086	<0.0011	<0.0002	--	--	<0.0001	<0.0003	B 0.00068	<0.0017
SW-NFDC-900	6/18/2002	Dissolved	N	<0.001	<0.02	<0.0002	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	<0.02
SW-NFDC-900	6/18/2002	Total	N	<0.001	0.04	<0.0002	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	<0.02
SW-NFDC-900	8/7/2002	Dissolved	N	<0.001	<0.02	JH <0.0005	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	e <0.02
SW-NFDC-900	8/7/2002	Total	N	0.001	e 0.05	JH <0.0005	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	<0.02
SW-NFDC-900	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	0.001	<0.001	0.001	<0.001	<0.002	<0.005	<0.01
SW-NFDC-900	5/19/2003	Total	N	<0.002	0.08	0.0005	<0.005	<0.01	0.002	<0.001	0.002	<0.001	<0.002	<0.005	<0.01
SW-NFDC-900	8/13/2003	Dissolved	N	W <0.0003	0.0024	N <0.00025	B 0.006	<0.0011	<0.0002	--	--	W <0.0001	<0.0003	B 0.0011	<0.0017
SW-NFDC-900	8/13/2003	Total	N	B 0.00065	0.0656	<0.0001	0.0122	<0.001	B 0.00046	<0.0002	B 0.00046	<0.0001	<0.0003	B 0.0014	<0.0018
SW-NFDC-900	10/28/2003	Dissolved	N	<0.0004	0.0044	<0.0001	0.0087	<0.0011	B 0.00096	--	--	W <0.0001	<0.0003	B 0.00097	<0.0017

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SW-NFDC-900	10/28/2003	Total	N	B 0.00057	0.0205	<0.0001	0.0094	<0.0011	B 0.00098	B 0.00032	B 0.00066	<0.0001	W <0.0003	B 0.0014	<0.0017
SW-UTNFDC-510	9/24/2002	Dissolved	N	<0.003	<0.005	<0.0002	--	<0.02	<0.001	<0.001	<0.001	<0.0005	<0.002	<0.05	<0.01
SW-UTNFDC-510	9/24/2002	Total	N	<0.003	0.044	<0.0002	--	<0.02	0.001	<0.001	<0.001	<0.0005	<0.002	<0.05	<0.01
SW-UTNFDC-510	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SW-UTNFDC-510	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-UTNFDC-510	8/13/2003	Dissolved	N	<0.0003	0.0208	N <0.0001	B 0.0048	<0.0011	<0.0002	--	--	<0.0001	<0.0003	<0.0003	<0.0017
SW-UTNFDC-510	8/13/2003	Total	N	B 0.00094	0.074	<0.0001	0.0131	<0.001	<0.0002	--	--	<0.0001	<0.0003	B 0.00035	<0.0018
SW-UTNFDC-700	9/23/2002	Dissolved	N	<0.003	<0.005	<0.0002	--	<0.02	<0.001	<0.001	<0.001	<0.0005	<0.002	<0.05	<0.01
SW-UTNFDC-700	9/23/2002	Total	N	<0.003	0.011	<0.0002	--	<0.02	<0.001	<0.001	<0.001	<0.0005	<0.002	<0.05	<0.01
SW-UTNFDC-700	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SW-UTNFDC-700	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-UTNFDC-700	8/13/2003	Dissolved	N	W <0.0003	B 0.0019	N <0.0001	B 0.0049	<0.0011	<0.0002	--	--	<0.0001	<0.0003	B 0.00045	<0.0017
SW-UTNFDC-700	8/13/2003	Total	N	B 0.00073	0.0071	<0.0001	0.0107	<0.001	<0.0002	--	--	N <0.0001	B 0.00031	B 0.00045	<0.0018
SW-UTNFDC-800	9/23/2002	Dissolved	N	0.028	0.018	<0.0002	--	<0.02	<0.001	<0.001	<0.001	<0.0005	<0.002	<0.05	1.22
SW-UTNFDC-800	9/23/2002	Total	N	<0.003	0.009	<0.0002	--	<0.02	<0.001	<0.001	<0.001	<0.0005	<0.002	<0.05	<0.01
SW-UTNFDC-900	9/23/2002	Dissolved	N	<0.003	<0.005	<0.0002	--	<0.02	<0.001	<0.001	<0.001	<0.0005	<0.002	<0.05	<0.01
SW-UTNFDC-900	9/23/2002	Total	N	<0.003	0.022	<0.0002	--	<0.02	<0.001	<0.001	<0.001	<0.0005	<0.002	<0.05	<0.01
SW-UTNFDC-950	9/23/2002	Dissolved	N	<0.003	<0.005	<0.0002	--	<0.02	<0.001	<0.001	<0.001	<0.0005	<0.002	<0.05	<0.01
SW-UTNFDC-950	9/23/2002	Total	N	<0.003	0.023	<0.0002	--	<0.02	<0.001	<0.001	<0.001	<0.0005	<0.002	<0.05	<0.01
SP-NFDC-50	10/29/2003	Dissolved	N	<0.0004	B 0.0018	<0.0001	0.0094	<0.001	B 0.00041	--	--	<0.0001	<0.0003	B 0.00024	0.011
SP-NFDC-50	10/29/2003	Total	N	<0.0004	e% 0.0029	<0.0001	0.0095	<0.001	Be 0.00057	--	--	<0.0001	<0.0003	e% <0.0002	e% 0.0097
SP-NFDC-700	6/18/2002	Dissolved	N	<0.001	<0.02	<0.0002	--	<0.02	0.002	<0.001	0.003	<0.001	<0.002	<0.005	<0.02
SP-NFDC-700	6/18/2002	Total	N	<0.001	<0.02	<0.0002	--	<0.02	0.003	<0.001	0.003	<0.001	<0.002	<0.005	<0.02
SP-NFDC-700	8/7/2002	Dissolved	N	<0.001	<0.02	JH <0.0005	--	<0.02	0.004	<0.001	0.004	<0.001	<0.002	<0.005	e 0.03

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SP-NFDC-700	8/7/2002	Total	N	0.001	e 0.56	JH <0.0005	--	0.02	0.005	<0.001	e% 0.003	<0.001	<0.002	0.01	0.16
SP-NFDC-700	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	0.003	<0.001	0.003	<0.001	<0.002	<0.005	<0.01
SP-NFDC-700	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-NFDC-700	8/13/2003	Dissolved	N	<0.0003	B 0.00065	N <0.0001	0.0083	<0.0011	B 0.00024	--	--	<0.0001	B 0.00047	B 0.0028	0.0074
SP-NFDC-700	8/13/2003	Total	N	B 0.0008	0.0023	<0.0001	0.0146	<0.001	0.0018	<0.0002	0.0018	<0.0001	<0.0003	B 0.0028	0.0054
SP-UTNFDC-400	5/21/2002	Dissolved	N	<0.001	0.02	<0.0002	--	<0.02	0.003	<0.001	0.002	<0.001	<0.002	<0.005	0.07
SP-UTNFDC-400	5/21/2002	Total	N	0.002	0.07	<0.0002	--	<0.02	0.003	<0.001	0.003	<0.001	<0.002	0.021	0.12
SP-UTNFDC-400	5/20/2003	Dissolved	N	<0.002	e <0.01	<0.0001	<0.005	<0.01	e 0.003	<0.001	e 0.003	<0.001	<0.002	0.014	e 0.02
SP-UTNFDC-400	5/20/2003	Total	N	0.004	<0.01	0.0002	<0.005	<0.01	0.002	<0.001	0.002	<0.001	<0.002	0.015	0.05
SP-UTNFDC-520	9/24/2002	Dissolved	N	<0.003	<0.005	<0.0002	--	<0.02	<0.001	<0.001	<0.001	<0.0005	<0.002	<0.05	0.08
SP-UTNFDC-520	9/24/2002	Total	N	<0.003	<0.005	<0.0002	--	<0.02	<0.001	<0.001	<0.001	<0.0005	<0.002	<0.05	<0.01
SP-UTNFDC-520	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SP-UTNFDC-520	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-UTNFDC-520	8/13/2003	Dissolved	N	<0.0003	<0.0003	N <0.0001	B 0.0054	<0.0011	<0.0002	--	--	<0.0001	<0.0003	B 0.00036	<0.0017
SP-UTNFDC-520	8/13/2003	Total	N	B 0.0008	0.0058	<0.0001	0.0124	<0.001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0003	B 0.00021	<0.0018
SP-UTNFDC-540	8/13/2003	Dissolved	N	W <0.0003	0.0078	N <0.0001	0.0139	0.0132	B 0.00082	--	--	<0.0001	<0.0003	0.0196	0.0994
SP-UTNFDC-540	8/13/2003	Total	N	<0.0003	0.0254	<0.0001	0.0206	B 0.0085	0.0036	B 0.00026	0.0033	<0.0001	<0.0003	0.0221	0.114
SP-UTNFDC-540	10/28/2003	Dissolved	N	<0.0004	B 0.00083	<0.0001	0.0144	B 0.0099	0.0054	--	--	<0.0001	B <0.0003	0.018	0.0615
SP-UTNFDC-540	10/28/2003	Total	N	B 0.00057	0.0076	<0.0001	0.015	B 0.0064	0.0054	<0.0002	0.0054	<0.0001	<0.0003	0.0206	0.0811
SP-UTNFDC-540	5/17/2004	Dissolved	N	<0.001	<0.001	<0.0002	--	0.0139	0.0105	--	--	--	--	--	0.0653
SP-UTNFDC-540	5/17/2004	Total	N	<0.001	0.0022	--	--	B 0.0036	0.0104	--	--	--	--	--	0.0695
SP-UTNFDC-600	8/6/2002	Dissolved	N	0.002	<0.02	JH <0.0005	--	<0.02	0.004	<0.001	0.003	<0.001	<0.002	<0.005	e 0.04
SP-UTNFDC-600	8/6/2002	Total	N	<0.001	e 0.03	JH <0.0005	--	<0.02	0.005	<0.001	e% 0.005	<0.001	<0.002	<0.005	0.05
SP-UTNFDC-600	5/20/2003	Dissolved	N	<0.002	e <0.01	<0.0001	<0.005	<0.01	e 0.005	<0.001	e 0.005	<0.001	<0.002	<0.005	e <0.01

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SP-UTNFDC-600	5/20/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-UTNFDC-600	8/14/2003	Dissolved	N	We <0.0003	e 0.0055	<0.0001	0.0102	B 0.003	--	--	--	<0.0001	<0.0005	<0.0002	B 0.0026
SP-UTNFDC-600	8/14/2003	Total	N	qe% 0.00076	0.0218	<0.0001	q 0.0116	<0.001	--	--	--	N <0.0001	<0.0005	0.00038	q 0.0118
SP-UTNFDC-600	10/29/2003	Dissolved	N	<0.0004	0.0077	<0.0001	0.0213	0.0101	0.0122	--	--	<0.0001	<0.0003	0.0076	0.0251
SP-UTNFDC-600	10/29/2003	Total	N	<0.0004	e% 0.012	<0.0001	0.0219	B 0.0016	e <0.0002	--	--	<0.0001	<0.0003	e% 0.0075	e% 0.0273
SP-UTNFDC-600	5/18/2004	Dissolved	N	<0.001	0.0045	<0.0002	--	B 0.0068	0.0033	--	--	--	--	--	B 0.0038
SP-UTNFDC-600	5/18/2004	Total	N	<0.001	0.0147	<0.0002	--	<0.0013	0.0036	--	--	--	--	--	0.0122
SP-UTNFDC-600	8/25/2004	Dissolved	N	<0.0004	0.0113	<0.0001	--	0.0143	N 0.0014	--	--	--	--	--	Be 0.002
SP-UTNFDC-600	8/25/2004	Total	N	<0.0004	0.0477	<0.0001	--	B 0.0072	e 0.0035	--	--	--	--	--	0.0276
SOUTH FORK DEER CREEK															
SW-SFDC-200	5/18/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	0.002	<0.001	0.002	<0.001	<0.002	<0.005	<0.01
SW-SFDC-200	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-SFDC-200	8/13/2003	Dissolved	N	e <0.0003	e 0.0159	<0.0001	0.0099	<0.001	<0.0002	--	--	<0.0001	<0.0005	B 0.00074	<0.0018
SW-SFDC-200	8/13/2003	Dissolved	D	<0.0003	0.0152	<0.0001	0.0082	B 0.0016	<0.0002	--	--	<0.0001	<0.0005	B 0.00077	<0.0018
SW-SFDC-200	8/13/2003	Total	N	qe% 0.0005	0.0426	<0.0001	q 0.0095	<0.001	--	--	--	N <0.0001	<0.0005	0.00072	<0.0018
SW-SFDC-200	8/13/2003	Total	D	0.0013	0.0437	<0.0001	0.0094	<0.001	--	--	--	N <0.0001	<0.0005	0.0008	<0.0018
SW-SFDC-200	10/28/2003	Dissolved	N	<0.0004	0.0246	<0.0001	0.008	<0.0011	B 0.00028	--	--	<0.0001	W <0.0003	B 0.00047	<0.0017
SW-SFDC-200	10/28/2003	Total	N	<0.0004	0.073	<0.0001	0.0084	<0.0011	<0.0002	--	--	<0.0001	<0.0003	B 0.00076	<0.0017
SW-SFDC-300	5/22/2002	Dissolved	N	<0.001	<0.02	e <0.0002	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	0.11
SW-SFDC-300	5/22/2002	Total	N	<0.001	0.03	<0.0002	--	<0.02	0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.02
SW-SFDC-300	5/18/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SW-SFDC-300	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-SFDC-800	5/23/2002	Dissolved	N	<0.001	<0.02	e <0.0002	--	<0.02	0.002	<0.001	<0.001	<0.001	<0.002	<0.005	<0.02
SW-SFDC-800	5/23/2002	Total	N	<0.001	<0.02	<0.0002	--	<0.02	0.002	<0.001	0.002	<0.001	<0.002	<0.005	<0.02

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SW-SFDC-800	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	0.001	<0.001	0.001	<0.001	<0.002	<0.005	<0.01
SW-SFDC-800	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-SFDC-800	5/17/2004	Dissolved	N	<0.001	<0.001	<0.0002	--	B 0.0056	0.002	--	--	--	--	--	0.0072
SW-SFDC-800	5/17/2004	Total	N	W <0.001	B 0.0012	<0.0002	--	<0.0013	0.002	--	--	--	--	--	0.0081
SW-SFSC-800	9/28/2004	Dissolved	N	W <0.0004	<0.001	<0.0002	--	B 0.0069	--	0.0017	--	--	--	--	B 0.00024
SW-SFSC-800	9/28/2004	Total	N	W <0.0004	0.003	<0.0002	--	<0.0013	0.0019	--	--	--	--	--	<0.0002
SW-UTSFDC-900	5/19/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SW-UTSFDC-900	5/19/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-UTSFDC-500	5/22/2002	Dissolved	N	<0.001	<0.02	e 0.0003	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	0.21
SP-UTSFDC-500	5/22/2002	Total	N	<0.001	<0.02	0.0004	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	0.03
SP-UTSFDC-600	10/29/2003	Dissolved	N	<0.0004	0.0061	<0.0001	0.0083	B 0.0014	<0.0002	--	--	<0.0001	<0.0003	<0.0002	0.0018
SP-UTSFDC-600	10/29/2003	Total	N	<0.0004	e% 0.006	<0.0001	0.0094	<0.001	e <0.0002	--	--	<0.0001	<0.0003	e% <0.0002	e% <0.0018
WELLS CANYON															
SW-WC-800	5/18/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SW-WC-800	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-WC-800	8/12/2003	Dissolved	N	e <0.0003	e 0.0035	<0.0001	0.0094	<0.001	<0.0002	--	--	<0.0001	<0.0005	B 0.0024	<0.0018
SW-WC-800	8/12/2003	Dissolved	D	<0.0003	0.0037	<0.00025	0.0095	<0.001	<0.0002	--	--	<0.0001	<0.0005	B 0.0025	B 0.0024
SW-WC-800	8/12/2003	Total	N	Be% 0.00042	0.0128	<0.0001	q 0.0107	<0.001	--	--	--	N <0.0001	<0.0005	B 0.003	B 0.0049
SW-WC-800	8/12/2003	Total	D	B 0.0012	0.0133	<0.0001	0.0109	<0.001	--	--	--	N <0.0001	<0.0005	B 0.0033	0.006
SW-WC-800	10/28/2003	Dissolved	N	<0.0004	B 0.0015	<0.0001	0.0082	<0.0011	B 0.00052	--	--	<0.0001	W <0.0003	B 0.0015	B 0.0048
SW-WC-800	10/28/2003	Total	N	<0.0004	0.0034	<0.0001	0.0091	<0.0011	B 0.00049	--	--	<0.0001	<0.0003	B 0.0021	B 0.0036
SW-WC-800	5/19/2004	Dissolved	N	<0.0007	B 0.0014	<0.0002	--	<0.0013	B 0.00086	--	--	--	--	--	B 0.0012
SW-WC-800	5/19/2004	Dissolved	D	<0.0007	<0.001	<0.0002	--	<0.0013	B 0.00078	--	--	--	--	--	B 0.00035
SW-WC-800	5/19/2004	Total	N	B 0.0012	0.0197	<0.0002	--	<0.0013	e%B 0.00082	--	--	--	--	--	0.0105

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BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SW-WC-800	5/19/2004	Total	D	B 0.00082	0.0199	<0.0002	--	<0.0013	B 0.00087	--	--	--	--	--	0.0104
SW-WC-800	8/24/2004	Dissolved	N	<0.0004	<0.001	<0.0001	--	0.011	BN 0.00049	--	--	--	--	--	B 0.00022
SW-WC-800	8/24/2004	Total	N	<0.0004	0.0107	<0.0001	--	<0.0013	Be 0.00062	--	--	--	--	--	0.0053
SP-UTWC-300	5/23/2002	Dissolved	N	<0.001	<0.02	e 0.0003	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	0.1
SP-UTWC-300	5/23/2002	Total	N	<0.001	<0.02	0.0004	--	<0.02	<0.001	--	--	<0.001	<0.002	<0.005	<0.02
SP-UTWC-300	5/18/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SP-UTWC-300	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-WC-400	5/20/2002	Dissolved	N	<0.001	<0.02	<0.0002	--	<0.02	0.004	<0.001	0.004	<0.001	<0.002	<0.005	0.07
SP-WC-400	5/20/2002	Total	N	<0.001	<0.02	<0.0002	--	<0.02	0.005	<0.001	0.004	<0.001	<0.002	<0.005	0.02
SP-WC-400	8/8/2002	Dissolved	N	<0.001	<0.02	JH <0.0005	--	<0.02	0.006	<0.001	0.004	<0.001	<0.002	<0.005	e 0.02
SP-WC-400	8/8/2002	Dissolved	D	0.001	<0.02	JH <0.0005	--	<0.02	0.006	<0.001	0.003	<0.001	<0.002	<0.005	0.06
SP-WC-400	8/8/2002	Total	N	<0.001	e 0.07	JH <0.0005	--	<0.02	0.006	<0.001	e% 0.006	<0.001	<0.002	<0.005	0.07
SP-WC-400	8/8/2002	Total	D	<0.001	0.04	JH <0.0005	--	<0.02	0.006	<0.001	0.004	<0.001	<0.002	<0.005	0.05
SP-WC-400	5/18/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	0.005	<0.001	0.005	<0.001	<0.002	<0.005	0.02
SP-WC-400	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-WC-400	8/13/2003	Dissolved	N	e <0.0003	e 0.0104	<0.0001	0.0107	B 0.0031	B 0.00062	--	--	<0.0001	<0.0005	B 0.0035	q 0.0055
SP-WC-400	8/13/2003	Total	N	qe% 0.0013	0.066	<0.0001	q 0.0124	0.0016	0.0039	0.00038	0.0035	N <0.0001	<0.0005	0.0065	q 0.0473
SP-WC-400	10/28/2003	Dissolved	N	<0.0004	0.0078	<0.0001	0.0109	B 0.0018	0.0039	--	--	<0.0001	W <0.0003	B 0.0027	0.0141
SP-WC-400	10/28/2003	Dissolved	D	<0.0004	0.0066	<0.0001	0.0109	B 0.0018	0.0038	--	--	<0.0001	<0.0003	B 0.0027	0.0117
SP-WC-400	10/28/2003	Total	N	B 0.00069	0.057	<0.0001	0.0118	B 0.0013	0.0043	B 0.00029	0.004	<0.0001	<0.0003	0.0055	0.0464
SP-WC-400	10/28/2003	Total	D	--	--	--	--	--	0.0043	--	--	--	--	--	--
SP-WC-400	5/17/2004	Dissolved	N	W <0.001	0.0037	<0.0002	--	B 0.0063	0.0041	--	--	--	--	--	0.0125
SP-WC-400	5/17/2004	Total	N	W <0.001	0.011	<0.0002	--	<0.0013	0.0041	--	--	--	--	--	0.0187
SP-WC-400	8/25/2004	Dissolved	N	B 0.00048	0.037	<0.0001	--	0.0183	N 0.0039	--	--	--	--	--	Be 0.0047

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SP-WC-400	8/25/2004	Total	N	B 0.0025	0.199	B 0.0001	--	0.0323	e 0.0059	--	--	--	--	--	0.191
SP-WC-750	6/5/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-WC-750	6/5/2003	Total	N	<0.002	<0.01	<0.0002	<0.005	<0.01	--	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SP-WC-750	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-WC-750	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SP-WC-750	8/14/2003	Dissolved	N	We <0.0003	B 0.0014	<0.0001	0.0086	B 0.0012	<0.0002	--	--	<0.0001	<0.0005	B 0.0017	<0.0018
SP-WC-750	8/14/2003	Total	N	e% <0.0003	0.00084	<0.0001	q 0.0096	<0.001	0.00051	<0.0002	0.00051	N <0.0001	<0.0005	0.0016	<0.0018
DIAMOND CREEK															
SW-DMC-200	5/18/2003	Dissolved	N	<0.002	<0.01	<0.0001	<0.005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SW-DMC-200	5/18/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-DMC-200	8/14/2003	Dissolved	N	Be 0.00039	e 0.0036	<0.0001	0.0082	B 0.0013	<0.0002	--	--	W <0.0001	<0.0005	B 0.00033	<0.0018
SW-DMC-200	8/14/2003	Dissolved	D	B 0.0007	0.0045	<0.0001	B 0.0076	B 0.0016	<0.0002	--	--	W <0.0001	<0.0005	B 0.00032	<0.0018
SW-DMC-200	8/14/2003	Total	N	qe% 0.00083	0.0071	<0.0001	q 0.0094	<0.001	--	--	--	N <0.0001	<0.0005	0.00038	<0.0018
SW-DMC-200	8/14/2003	Total	D	0.0012	0.0068	<0.0001	0.0092	<0.001	--	--	--	N <0.0001	<0.0005	0.00028	<0.0018
STEWART CANYON															
SW-ST-500	8/15/2003	Dissolved	N	W <0.0003	0.0035	<0.0001	0.0106	<0.001	B 0.00066	--	--	<0.0001	<0.0005	B 0.0019	B 0.0036
SW-ST-500	8/15/2003	Total	N	BW 0.00044	0.0152	<0.0001	0.0082	<0.001	N 0.0012	--	--	<0.0001	B 0.00088	B 0.0021	0.0145
SW-ST-500	5/18/2004	Dissolved	N	<0.001	B 0.0013	<0.0002	--	B 0.0069	0.0028	--	--	--	--	--	B 0.0042
SW-ST-500	5/18/2004	Total	N	W <0.001	0.0081	<0.0002	--	<0.0013	0.0076	--	--	--	--	--	0.0163
SW-ST-500	8/26/2004	Dissolved	N	<0.0004	0.002	<0.0001	--	0.0152	N 0.0024	--	--	--	--	--	Be 0.0039
SW-ST-500	8/26/2004	Total	N	<0.0004	0.017	<0.0001	--	B 0.0036	e 0.003	--	--	--	--	--	0.0268
SW-ST-700	8/26/2004	Dissolved	N	<0.0004	<0.001	<0.0001	--	0.0129	BN 0.00059	--	--	--	--	--	e <0.0002
SW-ST-700	8/26/2004	Dissolved	D	<0.0004	<0.001	<0.0001	--	0.013	BN 0.00072	--	--	--	--	--	<0.0002
SW-ST-700	8/26/2004	Total	N	<0.0004	B 0.0012	<0.0001	--	<0.0013	Be 0.00088	--	--	--	--	--	<0.0002

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SW-ST-700	8/26/2004	Total	D	<0.0004	B 0.001	<0.0001	--	<0.0013	B 0.00047	--	--	--	--	--	B 0.00025
SP-ST-100	8/15/2003	Dissolved	N	W <0.0003	B 0.0012	<0.0001	0.0119	<0.001	<0.0002	--	--	<0.0001	<0.0005	B 0.0025	<0.0018
SP-ST-100	8/15/2003	Total	N	W <0.0003	B 0.0012	<0.0001	0.0089	<0.001	BN 0.00061	<0.0002	B 0.00061	<0.0001	<0.0003	B 0.0025	<0.0018
SP-ST-100	5/18/2004	Dissolved	N	W <0.001	<0.001	<0.0002	--	B 0.0043	0.0028	--	--	--	--	--	B 0.00093
SP-ST-100	5/18/2004	Total	N	W <0.001	<0.001	<0.0002	--	<0.0013	0.0017	--	--	--	--	--	B 0.0016
SP-ST-100	8/26/2004	Dissolved	N	<0.0004	<0.001	<0.0001	--	0.0136	N 0.0011	--	--	--	--	--	Be 0.00082
SP-ST-100	8/26/2004	Total	N	<0.0004	<0.001	<0.0001	--	<0.0013	Be 0.00092	--	--	--	--	--	B 0.00064
SP-ST-200	8/15/2003	Dissolved	N	W <0.0003	B 0.0013	<0.0001	0.0108	<0.001	B 0.00023	--	--	<0.0001	<0.0005	0.0021	<0.0018
SP-ST-200	8/15/2003	Total	N	<0.0003	B 0.0013	<0.0001	B 0.008	<0.001	BN 0.00064	<0.0002	B 0.00064	<0.0001	B 0.00088	B 0.0019	<0.0018
SP-ST-200	5/18/2004	Dissolved	N	<0.001	<0.001	<0.0002	--	B 0.0051	0.0022	--	--	--	--	--	B 0.00064
SP-ST-200	5/18/2004	Total	N	W <0.001	B 0.0016	<0.0002	--	<0.0013	0.0024	--	--	--	--	--	B 0.0013
SP-ST-200	8/26/2004	Dissolved	N	<0.0004	<0.001	<0.0001	--	0.0128	N 0.001	--	--	--	--	--	Be 0.00024
SP-ST-200	8/26/2004	Total	N	<0.0004	<0.001	<0.0001	--	<0.0013	e 0.0016	--	--	--	--	--	B 0.00028
LAMB CANYON															
SW-LC-500	8/15/2003	Dissolved	N	W <0.0003	B 0.0018	<0.0001	0.0105	<0.001	B 0.00061	--	--	<0.0001	<0.0005	B 0.0019	B 0.0026
SW-LC-500	8/15/2003	Total	N	W <0.0003	0.0201	<0.0001	0.0082	<0.001	BN 0.00038	--	--	<0.0001	<0.0003	B 0.0022	0.0134
CLEAR CREEK															
SW-CL-800	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-CL-800	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
WHITE DUGWAY CREEK															
SW-WD-800	7/29/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--
SW-WD-800	7/29/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
WARM CREEK															
SW-WM-800	7/30/2003	Dissolved	N	--	--	--	--	--	--	--	--	--	--	--	--

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**
SW-WM-800	7/30/2003	Total	N	--	--	--	--	--	--	--	--	--	--	--	--
PRESERVATIVE BLANK															
SW-OC-200	5/20/2003	Dissolved	B	<0.002	<0.01	<0.0001	<0.005	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.01
SW-OC-200	5/20/2003	Total	B	--	--	--	--	--	--	--	--	--	--	--	--
SW-OC-200	8/14/2003	Dissolved	B	B 0.00093	<0.0007	<0.0001	<0.0005	B 0.003	<0.0002	--	--	W <0.0001	<0.0005	<0.0002	0.0118
SW-OC-200	8/14/2003	Total	B	0.001	<0.0007	<0.0001	0.00056	<0.001	--	--	--	N <0.0001	<0.0005	<0.0002	0.0106
SW-OC-200	10/30/2003	Dissolved	B	--	--	--	--	--	--	--	--	--	--	--	--
SW-OC-200	10/30/2003	Total	B	B 0.0012	B 0.0013	<0.0001	B 0.00071	<0.001	B 0.00028	--	--	<0.0001	<0.0003	<0.0002	0.0125
SW-OC-200	5/19/2004	Dissolved	B	<0.0007	<0.001	<0.0002	--	<0.0013	<0.0003	--	--	--	--	--	<0.0002
SW-OC-200	5/19/2004	Total	B	<0.0007	<0.001	<0.0002	--	<0.0013	e%< 0.0003	--	--	--	--	--	B 0.0022

TABLE A-3
SUMMARY OF SURFACE WATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.0025h**	**NE**	**1.2e-5**	**NE**	**0.16h**	**0.005**	**NE**	**NE**	**0.0034h**	**0.0063**	**NE**	**0.105h**

Notes:

B	Not detected above quantitation limit but present above method detection limit (SVL).
D	Field duplicate sample
J	Estimated value (Northern Analytical).
N	Located in the QC column indicates natural sample.
N	Located in analyte column indicates percent recovery not within control limits 75-125% (SVL).
NE	Not Established
M	Duplicate precision goal not met (SVL).
W	Post-digestion spike recovery out of control limits 85-115% (SVL).
<	Indicates analyte not detected above laboratory practical quantification limit (PQL).
(mg/L)	Milligrams per liter
*	Dulicate analysis not within control limits (SVL).
(1)	Verified by a second analysis (Northern Analytical).
--	Field data or laboratory samples were not collected or analyzed.
H	Sample analyzed out of holding time.
e	Field duplicate results exceed acceptable limits - PQL based determination.
e%	Field duplicate results exceed acceptable limits - relative percent difference determination.
q	Associated values are estimates - field blank showed evidence of contamination.
**	The surface water standards value is the lowest concentration for cold water biota for Criteria Maximum Concentration (CMC), Criteria Continuous Concentration (CCC), or human consumption of organisms. Standards from IDAPA 58.01.02.210 + 250. For Idaho, water quality standards are based on the dissolved fraction for metals in surface water (except total fraction for selenium and mercury as CCC). Standard values followed by an "h" indicate the aquatic life criteria are expressed as a function of total hardness and water effect ratio (WER). Hardness dependent standards are calculated for each watershed based on the average observed hardness. Standards shown are based on a hardness of 100 mg/L.
	Shading indicates results above Idaho DEQ Standards, regardless of physical state (Total or Dissolved).
+	Chromium standard of 0.01 mg/l is for Chromium VI; the chromium III standard is 0.18 mg/l for CCC and is hardness dependent.

Summary of Sediment Data

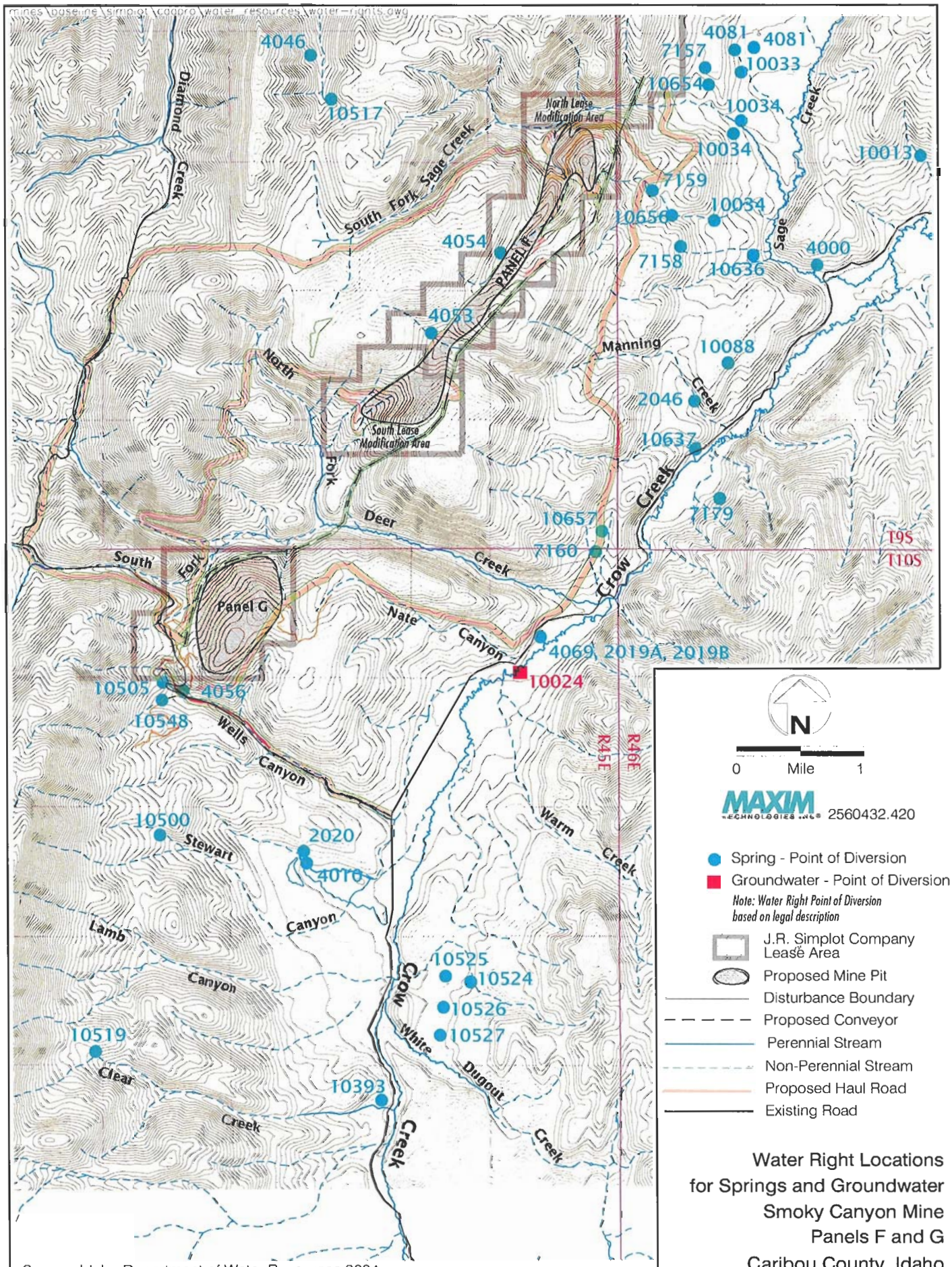
TABLE I-1
SUMMARY OF SEDIMENT DATA
ANALYSIS FOR TOTAL METALS
PANELS F AND G
BASELINE STUDY

Site		Date	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Boron (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium All (mg/kg)	Selenium IV (mg/kg)	Selenium VI (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
DEER CREEK																							
SW-DC-400	N	8/13/2003	11000	N <0.44	4.4	107	0.61	13.1	4.7	51.7	17	16000	8.4	1020	B 0.02	51.1	N 0.79	0.55	0.24	0.65	<0.39	48	278
SW-DC-500	N	8/12/2003	12800	N 0.57	5.4	106	0.7	18.9	6	78.6	19.9	17700	10.3	1090	B 0.02	45.3	N 1.3	0.8	0.54	0.59	<0.39	61.6	246
NORTH FORK DEER CREEK																							
SW-NFDC-500	N	8/13/2003	15000	N 0.64	7.1	250	0.78	11.9	2.4	31.8	21.5	27700	15.5	5020	B 0.02	47.5	N 0.5	0.25	0.25	0.66	<0.39	39.6	187
SW-NFDC-900	N	8/13/2003	14300	N 0.51	5.4	138	0.84	22.2	6.7	102	24	21400	10	1850	B 0.03	63.5	N 1.1	0.81	0.3	B 0.49	<0.39	90.2	313
SOUTH FORK DEER CREEK																							
SW-SFDC-800	N	8/13/2003	11300	N <0.44	5.2	149	0.6	8.1	8.6	37.7	13.3	15300	10.6	1730	B 0.02	52.6	N 0.76	0.43	0.33	B 0.49	<0.39	40.3	386

Notes:

<	Indicates analyte not detected above laboratory practical quantification limit (PQL).
(mg/L)	Milligrams per kilogram
N	Located in Site column indicates natural sample.
N	Located in analyte column indicates percent recovery not within control limits 75-125% (SVL).
D	Field duplicate sample.
B	Not detected above quantification limit but present above method detection limit (SVL).

Summary of Water Rights Points of Diversion



Source: Idaho Department of Water Resources 2004
See Table J-1 for descriptions of water rights by number.

Water Right Locations
for Springs and Groundwater
Smoky Canyon Mine
Panels F and G
Caribou County, Idaho
FIGURE J-1

Table J-1

Summary of Water Rights Points Of Diversion

Panels F and G Project

Baseline Study

Township, Range, Sec., Qrtr.	Water Right No.	Source	Diversion Rate (cfs)	Use	Owner
10S 45E 1 SESWSW	10024	Groundwater	0.04	Domestic	Riede
10S 45E 23 NWNW	10068	Crow Creek	0.02	Stock	USFS
10S 45E 5 NWSW	10081	Deer Creek South Frk	0.02	Stock	USFS
10S 45E 6 SWNE	10081	Deer Creek South Frk	0.02	Stock	USFS
10S 45E 26 SWNW	10393	Spring	0.02	Administrative	USFS
10S 45E 16 SWNW	10500	Spring	0.02	Stock	USFS
10S 45E 12 SWNE	10504	Books Creek	0.02	Stock	USFS
10S 45E 7 NESW	10504	Books Creek	0.02	Stock	USFS
10S 45E 9 NENW	10505	Spring	0.02	Stock	USFS
10S 45E 16 SESW	10516	Unnamed Stream	0.02	Stock	USFS
10S 45E 22 SWNW	10516	Unnamed Stream	0.02	Stock	USFS
10S 45E 20 SESE	10519	Spring	0.02	Stock	USFS
10S 45E 23 NENE	10522	Unnamed Stream	0.02	Stock	USFS
10S 45E 23 SENE	10523	Unnamed Stream	0.02	Stock	USFS
10S 45E 23 NENW	10523	Unnamed Stream	0.02	Stock	USFS
10S 45E 23 SENE	10524	Spring	0.02	Stock	USFS
10S 45E 23 SWNE	10525	Spring	0.02	Stock	USFS
10S 45E 23 NWSE	10526	Spring	0.02	Stock	USFS
10S 45E 23 NWSE	10527	Spring	0.02	Stock	USFS
10S 45E 23 NWSW	10529	White Dugway Creek	0.02	Stock	USFS
10S 45E 30 NWSE	10529	White Dugway Creek	0.02	Stock	USFS
10S 45E 9 NWNE	10548	Spring	0.02	Stock	USFS
10S 45E 12 NWSE	2019A	Books Spring	1.46	Domestic-irrigation	Books
10S 45E 12 SWSW	2019A	Warm Creek	0.94	Domestic-irrigation	Books
10S 45E 12 SWSW	2019B	Warm Creek	0.94	Domestic-irrigation	Books
10S 45E 12 NWSE	2019B	Books Spring	1.46	Domestic-irrigation	Books
10S 45E 15 SWNE	2020	Alleman Spring	1.5	Domestic-irrigation	Alleman
10S 45E 26 SWNW	2020	Crow Creek	1.5	Domestic-irrigation	Alleman
10S 45E 26 SENW	4007	Crow Creek	3	Irrigation-stock	Stewart
10S 45E 22 SENW	4008	Unnamed Stream	2	Irrigation-stock	Stewart
10S 45E 15 SESW	4009	Unnamed Stream	2	Irrigation-stock	Stewart
10S 45E 15 SWNE	4010	Alleman Spring	3	Irrigation-stock	Stewart
10S 45E 11 SWSE	4041	Crow Creek	1.6	Irrigation	Alleman
10S 45E 23 NENE	4042	Unnamed Stream	1.12	Irrigation-stock	Alleman
10S 45E 3 NENE	4049	Nate Canyon	0.02	Stock	USFS
10S 45E 9 NWNE	4056	Spring	0.02	Stock	USFS
10S 45E 1 NESW	4062	Books Creek	2.8	Irrigation-stock	Nate
10S 45E 11 NENE	4063	Waste Water	1.14	Irrigation-stock	Nate
10S 45E 11 SWSE	4064	Crow Creek	2.8	Irrigation	Nate
10S 45E 12 SWNW	4064	Warm Creek	2.8	Irrigation	Nate
10S 45E 12 NWNW	4064	Books Creek	2.8	Irrigation	Nate
10S 45E 14 NENW	4067	--	3	Irrigation-stock	Nate
10S 45E 14 NWSW	4067	--	3	Irrigation-stock	Nate
10S 45E 11 NWSE	4068	Crow Creek	5	Irrigation-stock	Nate

Table J-1

Summary of Water Rights Points Of Diversion

Panels F and G Project

Baseline Study

Township, Range, Sec., Qrtr.	Water Right No.	Source	Diversion Rate (cfs)	Use	Owner
10S 45E 11 SWSE	4068	Crow Creek	5	Irrigation-stock	Nate
10S 45E 1 NESW	4069	Bocks Spring	1	Irrigation-stock	Nate
10S 45E 1 SWSW	7176	Crow Creek	0.03	Irrigation	Riede
10S 46E 15 SESE	10071	Rock Creek	0.02	Stock	USFS
9S 45E 15 SWNE	10076	Sage Creek	0.02	Stock	USFS
9S 45E 7 NENW	10076	Sage Creek	0.02	Stock	USFS
9S 45E 34 SWSW	10081	Deer Creek South Frk	0.02	Stock	USFS
9S 45E 20 SWNW	10082	Deer Creek	0.02	Stock	USFS
9S 45E 29 NESE	10082	Deer Creek	0.02	Stock	USFS
9S 45E 15 NESE	10517	Hill Spring	0.02	Stock	USFS
9S 45E 36 SESE	10657	Spring	0.02	Stock	USFS
9S 45E 16 SWNE	11482	Diamond Creek	0.02	Stock	USFS
9S 45E 31 SWNW	11482	Diamond Creek	0.02	Stock	USFS
9S 45E 16 SWNE	11490	Diamond Creek	0.02	Stock	USFS
9S 45E 20 NWNE	11490	Deer Creek	0.02	Stock	USFS
9S 45E 15 NWNE	4046	Spring	0.02	Stock	USFS
9S 45E 26 SWNE	4053	Little Basin Spring	0.02	Stock	USFS
9S 45E 24 SWNE	4054	Panther Spring	0.02	Stock	USFS
9S 45E 25 NESE	4055	Manning Creek	0.02	Stock	USFS
9S 45E 36 SESE	7160	Spring	0.02	Stock	USFS
9S 46E 21 NESENW	10013	Spring	0.06	Domestic-stock	Box Ranch
9S 46E 18 SENENE	10033	Spring	0.02	Domestic	Hoopes
9S 46E 18 SENENE	10034	Spring	0.02	Stock	Hoopes
9S 46E 18 SENESE	10034	Spring	0.02	Stock	Hoopes
9S 46E 19 SWSENE	10034	Spring	0.02	Stock	Hoopes
9S 46E 28 NWSE	10071	Rock Creek	0.02	Stock	USFS
9S 46E 31 SWNE	10073	Crow Creek	0.02	Stock	USFS
9S 46E 18 NESE	10086	Sage Creek	0.02	Stock	USFS
9S 46E 18 NWSE	10086	Sage Creek	0.02	Stock	USFS
9S 46E 30 NESE	10088	Sage Spring	0.02	Stock	USFS
9S 46E 30 SESW	10515	Unnamed Stream	0.02	Stock	USFS
9S 46E 19 SESE	10636	Spring	0.02	Stock	USFS
9S 46E 31 NENW	10637	Spring	0.02	Stock	USFS
9S 46E 19 SWSW	10638	Unnamed Stream	0.02	Stock	USFS
9S 46E 18 NWNE	10654	Spring	0.02	Stock	USFS
9S 46E 19 SESE	10655	Unnamed Stream	0.02	Stock	USFS
9S 46E 19 SENW	10656	Spring	0.02	Stock	USFS
9S 46E 19 NWSE	11750	Unnamed Stream	0.02	Stock	USFS
9S 46E 30 SWSE	2046	Spring	0.02	Domestic-stock	Tolman-Farrell
9S 46E 20 NWSE	4000	Fox Spring	0.02	Domestic	Kennington
9S 46E 28 NENW	4016	Rock Creek	5	Irrigation-recreation	Hartman Ranch
9S 46E 20 SESW	4017	Sage Creek	1.4	Irrigation	Box Ranch
9S 46E 29 SWNE	4018	Crow Creek	0.9	Irrigation	Kennington
9S 46E 20 NESW	4019	Sage Creek	1.2	Irrigation	Kennington

Table J-1

Summary of Water Rights Points Of Diversion

Panels F and G Project

Baseline Study

Township, Range, Sec., Qrtr.	Water Right No.	Source	Diversion Rate (cfs)	Use	Owner
9S 46E 20 NESW	4020	Sage Creek	1.6	Irrigation	Kennington
9S 46E 29 SWNE	4021	Crow Creek	1.5	Irrigation	Kennington
9S 46E 29 SWNE	4022	Crow Creek	1.1	Irrigation	Kennington
9S 46E 17 NWNW	4081	Spring	5.06	Irrigation-stock	Petersen
9S 46E 18 NENE	4081	Spring	5.06	Irrigation-stock	Petersen
9S 46E 19 SESE	7137	Unnamed Stream	0.02	Stock	USFS
9S 46E 31 NENW	7138	Unnamed Stream	0.02	Stock	USFS
9S 46E 19 SWSW	7139	Unnamed Stream	0.02	Stock	USFS
9S 46E 18 NWNE	7157	Spring	0.02	Stock	USFS
9S 46E 19 NWSE	7158	Spring	0.02	Stock	USFS
9S 46E 19 NENW	7159	Spring	0.02	Stock	USFS
9S 46E 32 SENE	7166	Unnamed Stream	0.02	Stock	USFS
9S 46E 31 NENWSE	7178	Many Spring Creek	5	Fish	Whintey
9S 46E 31 NWNESE	7179	Spring	0.04	Domestic	Whitney

Notes:

Sec. Section

Qrtr. Quarter section

cfs Cubic feet per second

Source: Idaho Department of Water Resources, 2003.

Summary of Groundwater Data

TABLE B-1
SUMMARY OF GROUNDWATER DATA
FIELD MEASUREMENTS AND PHYSICAL PARAMETERS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Depth to Water*** (ft)	Temp. (C)	Field pH	Lab pH	Field Conductivity (umhos/cm)	Lab Conductivity (umhos/cm)	Field ORP (mV)	Field DO (mg/L)	Lab Turbidity (NTU)	Total Dis-solved Solids (mg/L)	Total Sus-pended Solids (mg/L)
IDAHO DEQ Standards**			**NE**	**6.5 - 8.5**	**6.5 - 8.5s**	**NE**	**NE**	**NE**	**NE**	**NE**	**500s**	**NE**
PANEL F (MANNING CREEK LEASE AREA)												
MC-MW-1	10/19/2003	145.1	--	--	--	--	--	--	--	--	--	--
MC-MW-1	10/30/2003	148.11	6.3	7.85	8.01	239	365	102.5	7.04	H 101	236	60
MC-MW-1	5/19/2004	145.94	--	--	8.09	--	330	--	--	0.742	192	<5
MC-MW-1	6/24/2004	145.79	7.49	7.46	8.02	327	344	116	9.54	H 0.137	228	<5
MC-MW-1	8/25/2004	--	--	--	--	--	--	--	--	--	--	--
MC-MW-2	10/14/2003	57.49	5	7.3	7.31	75	76	8	9	H 985	139	1350
MC-MW-2	10/29/2003	59.99	--	--	--	--	--	--	--	--	--	--
MC-MW-2	5/18/2004	42.24	--	--	--	--	--	--	--	--	--	--
MC-MW-2	6/30/2004	43.77	6.47	6.06	7.02	60	67	73	8.95	eH10.81	65.349	e<5
MC-MW-2	8/25/2004	49.25	--	--	--	--	--	--	--	--	--	--
MC-MW-3	10/14/2003	Dry	--	--	--	--	--	--	--	--	--	--
MC-MW-3	10/29/2003	Dry	--	--	--	--	--	--	--	--	--	--
MC-MW-3	5/18/2004	23.7	--	--	--	--	--	--	--	--	--	--
MC-MW-3	8/25/2004	Dry	--	--	--	--	--	--	--	--	--	--
MC-MW-4	10/14/2003	44.56	12	7.7	7.83	439	409	-31	8.5	H 1080	231	155
MC-MW-4	10/29/2003	45.54	--	--	--	--	--	--	--	--	--	--
MC-MW-4	5/18/2004	29.42	--	--	--	--	--	--	--	--	--	--
MC-MW-4	6/24/2004	31.78	8.1	7.42	7.93	460	494	-91.8	*0.29	H 3.48	260	<5
MC-MW-4	8/25/2004	36.8	--	--	--	--	--	--	--	--	--	--
MC-MW-5	10/14/2003	85.84	3	7.2	7.38	173	191	15	3.9	H 52.8	118	40
MC-MW-5	10/29/2003	88.44	--	--	--	--	--	--	--	--	--	--
MC-MW-5	5/18/2004	54.66	--	--	--	--	--	--	--	--	--	--
MC-MW-5	6/24/2004	47.91	9.46	5.43	6.96	163	73	152	8.89	H 6	37	<5
MC-MW-5	8/25/2004	74.9	--	--	--	--	--	--	--	--	--	--
MC-MW-5	10/5/2004	--	--	--	7.27	--	240	--	--	--	151	5
PANEL G (DEER CREEK LEASE AREA)												
DC-MW-1	10/9/2003	6.84	12	6.2	7.16	259	199	54	3.6	H 6456	H 168	H 4760
DC-MW-1	10/29/2003	7.49	--	--	--	--	--	--	--	--	--	--
DC-MW-1	5/19/2004	1.74	--	--	--	--	--	--	--	--	--	--
DC-MW-1	6/23/2004	3.34	6.4	5.79	7.31	167	137	183.2	3.55	H 654	100	1066
DC-MW-1	8/25/2004	6.2	--	--	--	--	--	--	--	--	--	--

TABLE B-1
SUMMARY OF GROUNDWATER DATA
FIELD MEASUREMENTS AND PHYSICAL PARAMETERS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Depth to Water*** (ft)	Temp. (C)	Field pH	Lab pH	Field Conductivity (umhos/cm)	Lab Conductivity (umhos/cm)	Field ORP (mV)	Field DO (mg/L)	Lab Turbidity (NTU)	Total Dis-solved Solids (mg/L)	Total Sus-pended Solids (mg/L)
IDAHO DEQ Standards**			**NE**	**6.5 - 8.5**	**6.5 - 8.5s**	**NE**	**NE**	**NE**	**NE**	**NE**	**500s**	**NE**
DC-MW-2	10/12/2003	63.14	6	7.6	7.83	485	498	8	4.7	H 494	417	633
DC-MW-2	10/29/2003	62.63	--	--	--	--	--	--	--	--	--	--
DC-MW-2	5/19/2004	57.74	--	--	--	--	--	--	--	--	--	--
DC-MW-2	6/30/2004	57.25	7.56	8.1	8.21	420	467	18.5	*0.41	eH3.88	236	e51
DC-MW-2	8/25/2004	60.91	--	--	--	--	--	--	--	--	--	--
DC-MW-3	10/11/2003	94.74	6	8.5	8.18	480	495	38	1.8	H 9.56	253	27
DC-MW-3	10/29/2003	94.92	--	--	--	--	--	--	--	--	--	--
DC-MW-3	5/19/2004	95.83	--	--	--	--	--	--	--	--	--	--
DC-MW-3	6/30/2004	93.45	6.4	10.19	10.24	388	390	-67.3	1.69	eH8.42	181	e86
DC-MW-3	8/25/2004	94.4	--	--	--	--	--	--	--	--	--	--
DC-MW-4	10/12/2003	103.96	8	7.9	7.96	313	322	4	3	H 86.1	168	106
DC-MW-4	10/29/2003	104.99	--	--	--	--	--	--	--	--	--	--
DC-MW-4	5/19/2004	105.9	--	--	--	--	--	--	--	--	--	--
DC-MW-4	6/30/2004	105.5	6.91	8.36	8.3	291	299	-84	*0.5	eH0.942	158	e10
DC-MW-4	8/25/2004	104.45	--	--	--	--	--	--	--	--	--	--
DC-MW-5	10/10/2003	302.95	8	7.3	7.97	397	400	-100	7.2	H 9.81	248	<5
DC-MW-5	10/29/2003	>300	--	--	--	--	--	--	--	--	--	--
DC-MW-5	5/19/2004	300.8	--	--	--	--	--	--	--	--	--	--
DC-MW-5	6/25/2004	295.1	5.76	7.4	7.94	386	413	59.6	3.46	H 4.47	218	<5
DC-MW-5	8/25/2004	297.45	--	--	--	--	--	--	--	--	--	--
DC-MW-5	10/15/2004	--	--	--	7.86	--	406	--	--	--	355	5
DC-MW-6	10/9/2003	2.96	10	7.3	7.5	427	453	360	3.7	H 2050	H 284	H 2256
DC-MW-6	10/29/2003	4.25	--	--	--	--	--	--	--	--	--	--
DC-MW-6	5/19/2004	3.99	--	--	--	--	--	--	--	--	--	--
DC-MW-6	6/23/2004	3.23	10.59	6.84	7.56	326	328	101	9.1	H 162.5	232	243
DC-MW-6	8/25/2004	5.55	--	--	--	--	--	--	--	--	--	--

TABLE B-1
SUMMARY OF GROUNDWATER DATA
FIELD MEASUREMENTS AND PHYSICAL PARAMETERS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Depth to Water*** (ft)	Temp. (C)	Field pH	Lab pH	Field Conductivity (umhos/cm)	Lab Conductivity (umhos/cm)	Field ORP (mV)	Field DO (mg/L)	Lab Turbidity (NTU)	Total Dis-solved Solids (mg/L)	Total Sus-pended Solids (mg/L)
IDAHO DEQ Standards**			**NE**	**6.5 - 8.5**	**6.5 - 8.5s**	**NE**	**NE**	**NE**	**NE**	**NE**	**500s**	**NE**

Notes:

***	Depth to water below measuring point.
ft	Feet
(mg/L)	Milligrams per liter
C	Degrees centigrade
(umhos/cm)	Micromhos per centimeter
ORP	Oxygen reduction potential
(mV)	Millivolts
DO	Dissolved oxygen
(NTU)	Nephelometric Turbidity Unit
<	Indicates analyte not detected above laboratory practical quantification limit (PQL).
--	Field data or laboratory samples were not collected or analyzed.
e	Field duplicate results exceed acceptable limits - PQL based determination.
H	Sample analyzed out of holding time.
NE	Not Established
*	Dissolved oxygen measurment may have been affected by nitrogen used to power bladder pump.
**	Standards from IDAPA 58.01.11.200. For Idaho, water quality standards are based on the total fraction for groundwater. Standard values followed by an "s" indicate a secondary standard.
	Shading indicates results above Idaho DEQ Standards.

Well MC-MW-3 and MC-MW-4 formerly known as MC-MW-11 and MC-MW-6, respectively.

TABLE B-2
SUMMARY OF GROUNDWATER DATA
ANALYSIS FOR MAJOR ION AND NUTRIENTS
PANLES F AND G
BASELINE STUDY

Site		Sample Date	Alkalinity Bicarbonate (mg/L)	Alkalinity Carbonate (mg/L)	Alkalinity Total (mg/L)	Ammonia Undistilled (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride Undistilled (mg/L)	Hardness (mg/L)	Magnesium (mg/L)	Nitrate and Nitrite (mg/L)	Phosphorous Ortho (mg/L)	Phosphorous Total (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)
IDAHO DEQ Standards**			**NE**	**NE**	**NE**	**NE**	**NE**	**250s**	**4.0**	**NE**	**NE**	**10**	**NE**	**NE**	**NE**	**NE**	**250s**
PANEL F (MANNING CREEK LEASE AREA)																	
MC-MW-1	N	10/30/2003	184	< 1	184	0.02	49.6	1.06	< 0.1	190	15.9	< 0.02	H 0.05	0.26	2.38	2.97	8.47
MC-MW-1	N	5/19/2004	189	< 1	189	--	46.7	0.65	0.11	172	13.4	--	--	--	0.536	3.03	8.11
MC-MW-1	N	6/24/2004	192	< 1	192	--	49.6	0.94	0.12	186	15.2	--	--	--	0.603	3.15	7.81
MC-MW-2	N	10/14/2003	35.6	< 1	35.6	0.02	27.9	0.87	0.12	--	6.68	0.57	H 0.43	5.609	11.5	1.95	2.55
MC-MW-2	N	6/30/2004	28.9	e< 1	28.9	--	9.33	0.92	0.16	29.4	1.48	--	--	--	0.452	1.29	1.99
MC-MW-4	N	10/14/2003	206	< 1	206	0.11	59.2	2.12	0.16	242	22.9	0.31	H <0.01	0.775	4.95	5.99	25.9
MC-MW-4	N	6/24/2004	273	< 1	273	--	63.6	1.41	0.15	264	25.6	--	--	--	2.35	4.17	22.3
MC-MW-5	N	10/14/2003	80.5	< 1	80.5	< 0.01	44.4	0.69	0.2	137	6.43	0.22	H 0.417	2.815	2.66	2.09	16.8
MC-MW-5	N	6/24/2004	< 30	< 1	30	--	10.1	0.56	0.2	31.6	1.53	--	--	--	0.404	1.45	4.46
MC-MW-5	N	10/5/2004	--	--	--	--	--	0.56	0.2	--	--	--	--	--	--	--	68
PANEL G (DEER CREEK LEASE AREA)																	
DC-MW-1	N	10/9/2003	60.1	< 1	60.1	0.22	49.3	1.34	0.18	204	19.8	25.16	H 0.033	41.546	13.2	3.07	6.84
DC-MW-1	N	6/23/2004	64.3	< 1	64.3	--	26.4	1.09	0.14	113	11.3	--	--	--	6.79	2.6	7.56
DC-MW-2	N	10/12/2003	242	< 1	242	0.02	139	1.95	0.42	460	27.4	0.16	H 0.068	14.171	10.3	5.91	26.6
DC-MW-2	N	6/30/2004	248	e< 1	248	--	89.3	1.87	0.60	299	18.5	--	--	--	2.63	7.63	29.3
DC-MW-3	N	10/11/2003	208	< 1	208	0.11	49.8	2.38	0.24	239	27.9	< 0.02	H <0.01	0.02	3.2	18.3	53.9
DC-MW-3	N	6/30/2004	42	e 1.4	186	--	30	1.81	0.22	153	18.9	--	--	--	7.48	56.8	22.2
DC-MW-3	D	6/30/2004	42.5	146	188	--	32.6	1.86	0.22	163	19.9	--	--	--	7.66	58.8	22.3
DC-MW-4	N	10/12/2003	163	< 1	163	0.02	68.2	2.91	0.11	202	7.74	< 0.02	H <0.01	1.229	1.53	3.49	7.5
DC-MW-4	D	10/12/2003	165	< 1	165	0.02	68.8	2.94	0.11	205	7.95	< 0.02	<0.01	1.25	1.53	3.53	7.54
DC-MW-4	N	6/30/2004	156	e 1.9	158	--	50.6	2.81	0.14	157	7.47	--	--	--	11	6	6.13
DC-MW-5	N	10/10/2003	208	< 1	208	< 0.01	60.4	1.72	0.34	220	16.9	0.15	H <0.01	0.022	B 0.68	2.85	14.2
DC-MW-5	N	6/25/2004	227	< 1	227	--	62.7	1.54	0.42	228	17.5	--	--	--	0.559	2.75	12.5
DC-MW-5	N	10/15/2004	--	--	--	--	--	1.63	0.4	--	--	--	--	--	--	--	12.2
DC-MW-6	N	10/9/2003	164	< 1	164	0.11	157	1.6	0.24	599	50.5	0.5	H 0.067	41.546	40.7	4.83	58.5
DC-MW-6	N	6/23/2004	168	< 1	168	--	70.8	0.84	0.29	254	18.9	--	--	--	9.52	3.32	16.2
PRESERVATIVE BLANK																	
FIELDBLANK	FB	6/24/2004	11.1	< 1	11.1	--	0.009	< 0.2	< 0.1	0.06	0.008	--	--	--	<0.0148	< 0.009	< 0.3

TABLE B-2
SUMMARY OF GROUNDWATER DATA
ANALYSIS FOR MAJOR ION AND NUTRIENTS
PANLES F AND G
BASELINE STUDY

Site		Sample Date	Alkalinity Bicarbonate (mg/L)	Alkalinity Carbonate (mg/L)	Alkalinity Total (mg/L)	Ammonia Undistilled (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride Undistilled (mg/L)	Hardness (mg/L)	Magnesium (mg/L)	Nitrate and Nitrite (mg/L)	Phosphorous Ortho (mg/L)	Phosphorous Total (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Sulfate (mg/L)
IDAHO DEQ Standards**			**NE**	**NE**	**NE**	**NE**	**NE**	**250s**	**4.0**	**NE**	**NE**	**10**	**NE**	**NE**	**NE**	**NE**	**250s**
EQUIPBLANK	B	6/30/2004	--	--	< 1	--	0.55	< 1	< 0.5	1.61	0.06	--	--	--	<0.015	0.02	< 1.5

Notes:

<	Indicates analyte not detected above laboratory practical quantification limit (PQL).
(mg/L)	Milligrams per liter
B	Not detected above quantitation limit but present above method detection limit (SVL).
D	Field duplicate sample
e	Field duplicate results exceed acceptable limits - PQL based determination.
H	Sample analyzed out of holding time.
N	Natural sample
NE	Not Established
**	Standards from IDAPA 58.01.11.200. For Idaho, water quality standards are based on the total fraction for groundwater. Standard values followed by an "s" indicate a secondary standard.
	Shading indicates results above Idaho DEQ Standards.

Well MC-MW-3 and MC-MW-4 formerly known as MC-MW-11 and MC-MW-6, respectively.

-- Field data or laboratory samples were not collected or analyzed.

TABLE B-3
SUMMARY OF GROUNDWATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**0.2s**	**0.006**	**0.05**	**2.0**	**0.004**	**NE**	**0.005**	**0.1**	**1.3**	**0.3s**
PANEL F (MANNING CREEK LEASE AREA)													
MC-MW-1	10/30/2003	Dissolved	N	B 0.0125	<0.0006	<0.0006	0.033	<0.00006	B 0.0122	<0.00006	<0.0003	<0.0026	<0.0045
MC-MW-1	10/30/2003	Total	N	5.35	<0.0006	BWN 0.0013	0.051	B 0.00015	B 0.0177	0.00014	0.0103	0.0044	4.25
MC-MW-1	5/19/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	<0.0124
MC-MW-1	5/19/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	0.0277
MC-MW-1	6/24/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	<0.0108
MC-MW-1	6/24/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	<0.0108
MC-MW-2	10/14/2003	Dissolved	N	<0.0086	B 0.0017	B 0.00069	B 0.0159	<0.00007	0.0072	<0.0001	<0.0002	<0.0011	B 0.0081
MC-MW-2	10/14/2003	Total	N	39.3	W <0.0006	0.0305	0.25	0.0026	0.102	N 0.0091	0.476	0.0897	67.9
MC-MW-2	6/30/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	<0.011
MC-MW-2	6/30/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	0.344
MC-MW-4	10/14/2003	Dissolved	N	<0.0086	B 0.0019	W <0.0006	0.0745	<0.00007	B 0.0305	<0.0001	B 0.00041	<0.0011	B 0.0075
MC-MW-4	10/14/2003	Total	N	4.98	<0.0006	B 0.002	0.129	B 0.00032	B 0.0246	N 0.00075	0.0271	0.0116	6.93
MC-MW-4	6/24/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	0.177
MC-MW-4	6/24/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	0.298
MC-MW-5	10/14/2003	Dissolved	N	<0.0086	BW 0.0039	0.003	0.0041	<0.00007	<0.0065	0.0014	B 0.0013	<0.0011	B 0.0095
MC-MW-5	10/14/2003	Total	N	6.42	W 0.0023	0.012	0.0281	B 0.00045	B 0.0197	N 0.0072	0.257	0.0318	13.3
MC-MW-5	6/24/2004	Dissolved	N	--	--	--	--	--	--	0.0019	--	--	<0.0108
MC-MW-5	6/24/2004	Total	N	--	--	--	--	--	--	0.0019	--	--	0.171
MC-MW-5	10/5/2004	Dissolved	N	--	--	--	--	--	--	0.0114	--	--	<0.011
MC-MW-5	10/5/2004	Total	N	--	--	--	--	--	--	0.0121	--	--	0.205
PANEL G (DEER CREEK LEASE AREA)													
DC-MW-1	10/9/2003	Dissolved	N	B 0.0112	BW 0.0013	<0.0006	0.0413	<0.00006	<0.012	0.0011	<0.0003	<0.0026	<0.0045
DC-MW-1	10/9/2003	Total	N	80.4	BWN 0.0012	N 0.0185	0.55	E 0.0031	0.0509	0.0118	0.368	0.085	69
DC-MW-1	6/23/2004	Dissolved	N	--	--	--	--	--	--	0.00098	--	--	0.0252
DC-MW-1	6/23/2004	Total	N	--	--	--	--	--	--	0.0058	--	--	27.1
DC-MW-2	10/12/2003	Dissolved	N	B 0.0152	B 0.0012	B 0.0017	0.0198	<0.00006	<0.012	0.002	B 0.0015	<0.0026	<0.0045
DC-MW-2	10/12/2003	Total	N	59.8	BWN 0.0019	WN 0.0318	0.188	E 0.0021	0.0665	0.0188	0.501	0.0571	38
DC-MW-2	6/30/2004	Dissolved	N	--	--	--	--	--	--	0.00044	--	--	<0.011
DC-MW-2	6/30/2004	Total	N	--	--	--	--	--	--	0.00065	--	--	0.107
DC-MW-3	10/11/2003	Dissolved	N	B 0.0109	BW 0.0027	0.0075	0.0725	<0.00006	B 0.0159	<0.0001	<0.0003	<0.0026	<0.0045
DC-MW-3	10/11/2003	Total	N	0.799	BN 0.00065	N 0.0093	0.0895	e <0.00006	B 0.0172	<0.0001	B 0.0033	<0.0026	0.472
DC-MW-3	6/30/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	<0.011

TABLE B-3
SUMMARY OF GROUNDWATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Aluminum (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)
IDAHO DEQ Standard**				**0.2s**	**0.006**	**0.05**	**2.0**	**0.004**	**NE**	**0.005**	**0.1**	**1.3**	**0.3s**
DC-MW-3	6/30/2004	Dissolved	D	--	--	--	--	--	--	<0.0001	--	--	<0.011
DC-MW-3	6/30/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	0.0823
DC-MW-3	6/30/2004	Total	D	--	--	--	--	--	--	<0.0001	--	--	0.0829
DC-MW-4	10/12/2003	Dissolved	N	B 0.015	BW 0.0019	0.0057	0.0198	<0.00006	<0.012	<0.0001	<0.0003	<0.0026	<0.0045
DC-MW-4	10/12/2003	Dissolved	D	B 0.0185	BW 0.0024	0.0063	0.0204	<0.00006	<0.012	<0.0001	<0.0003	<0.0026	<0.0045
DC-MW-4	10/12/2003	Total	N	2.73	BWN 0.0019	N 0.0087	0.0392	e <0.00006	<0.012	0.0037	0.0651	0.0058	2.9
DC-MW-4	10/12/2003	Total	D	2.72	BWN 0.002	N 0.0086	0.0395	e <0.00006	<0.012	0.0037	0.0625	0.0052	3.06
DC-MW-4	6/30/2004	Dissolved	N	--	--	--	--	--	--	<0.0001	--	--	B 0.0135
DC-MW-4	6/30/2004	Total	N	--	--	--	--	--	--	<0.0001	--	--	0.128
DC-MW-5	10/10/2003	Dissolved	N	B 0.0176	B 0.0011	<0.0006	0.0277	<0.00006	<0.012	0.00016	<0.0003	<0.0026	<0.0045
DC-MW-5	10/10/2003	Total	N	0.0242	N <0.0006	N <0.0006	0.0299	e <0.00006	<0.012	0.00034	B 0.0012	<0.0026	2.13
DC-MW-5	6/25/2004	Dissolved	N	--	--	--	--	--	--	0.00069	--	--	<0.0108
DC-MW-5	6/25/2004	Total	N	--	--	--	--	--	--	0.00075	--	--	1.09
DC-MW-5	10/15/2004	Dissolved	N	--	--	--	--	--	--	0.00057	--	--	<0.0124
DC-MW-5	10/15/2004	Total	N	--	--	--	--	--	--	0.00065	--	--	B0.0152
DC-MW-6	10/9/2003	Dissolved	N	B 0.0143	BW 0.0019	B 0.00083	0.0355	<0.00006	B 0.0143	0.00078	<0.0003	<0.0026	<0.0045
DC-MW-6	10/9/2003	Total	N	209	BWN 0.00083	N 0.0625	1.18	E 0.0096	0.241	0.131	1.4	0.324	183
DC-MW-6	6/23/2004	Dissolved	N	--	--	--	--	--	--	0.0011	--	--	0.025
DC-MW-6	6/23/2004	Total	N	--	--	--	--	--	--	0.154	--	--	45.5
PRESERVATIVE BLANK													
EQUIPBLAN	6/30/2004	Dissolved	B	--	--	--	--	--	--	<0.0001	--	--	<0.011
EQUIPBLAN	6/30/2004	Total	B	--	--	--	--	--	--	<0.0001	--	--	<0.011
FIELDBLANK	6/24/2004	Dissolved	FB	--	--	--	--	--	--	W<0.0001	--	--	<0.0108
FIELDBLANK	6/24/2004	Total	FB	--	--	--	--	--	--	<0.0001	--	--	<0.0108

Notes:

D Field duplicate sample.
B Not detected above quantitation limit but present above method detection limit (SVL).
E Estimated value due to presence of interference (SVL).
N Located in QC column indicates natural sample.
N Located in analyte column indicates percent recovery not within control limits 75-125% (SVL)..
NE Not Established.
W Post-digestion spike recovery out of control limits 85-115% (SVL).
-- Field data or laboratory samples were not collected or analyzed.

e Field duplicate results exceed acceptable limits - PQL based determination.
< Indicates analyte not detected above laboratory practical quantification limit (PQL).
(mg/L) Milligrams per liter.
* Duplicate analysis not within control limits (SVL).
** Standards from IDAPA 58.01.11.200. For Idaho, water quality standards are based on the total fraction for groundwater. Standard values followed by an "s" indicate a secondary standard.
Shading indicates results above ID DEQ Standards, regardless of physical state (Total or Dissolved).
Well MC-MW-3 and MC-MW-4 formerly known as MC-MW-11 and MC-MW-6, respectively.

TABLE B-3
SUMMARY OF GROUNDWATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.015**	**0.05s**	**0.002**	**NE**	**0.05**	**NE**	**NE**	**0.1s**	**0.002**	**NE**	**5.0s**
PANEL F (MANNING CREEK LEASE AREA)														
MC-MW-1	10/30/2003	Dissolved	N	<0.0004	0.0034	<0.0001	B 0.002	B 0.00049	--	--	<0.001	B 0.00051	B 0.00029	0.0066
MC-MW-1	10/30/2003	Total	N	0.002	0.0522	<0.0001	<0.001	B 0.00042	--	--	<0.0001	<0.0003	0.0109	* 0.0311
MC-MW-1	5/19/2004	Dissolved	N	<0.0007	B0.0018	<0.0002	<0.0013	B 0.00066	--	--	--	--	--	<0.0002
MC-MW-1	5/19/2004	Total	N	B 0.001	<0.001	<0.0002	<0.0013	<0.0003	--	--	--	--	--	B 0.0015
MC-MW-1	6/24/2004	Dissolved	N	<0.0007	<0.0006	*<0.0002	<0.0017	<0.0003	--	--	--	--	--	<0.0011
MC-MW-1	6/24/2004	Total	N	B 0.00072	<0.0006	*< 0.0002	<0.0017	<0.0003	--	--	--	--	--	<0.0011
MC-MW-2	10/14/2003	Dissolved	N	<0.0004	0.0689	<0.0001	<0.0011	0.0025	--	--	<0.0001	B 0.00053	B 0.0016	0.059
MC-MW-2	10/14/2003	Total	N	0.0265	1.52	0.00049	0.42	0.0231	<0.0002	0.0231	B 0.00034	B 0.0014	0.2	1.48
MC-MW-2	6/30/2004	Dissolved	N	<0.001	<0.0006	<0.0002	B 0.0053	B 0.00088	--	--	--	--	--	0.0052
MC-MW-2	6/30/2004	Total	N	<0.001	SB0.002	<0.0002	B 0.0066	B 0.00095	--	--	--	--	--	S 0.0123
MC-MW-4	10/14/2003	Dissolved	N	<0.0004	0.135	<0.0001	<0.0011	0.0018	--	--	<0.0001	B 0.00058	B 0.00041	0.311
MC-MW-4	10/14/2003	Total	N	0.0101	0.258	<0.0001	0.0114	0.0021	--	--	<0.0001	<0.0003	0.0079	0.327
MC-MW-4	6/24/2004	Dissolved	N	B0.0013	0.0565	*<0.0002	<0.0017	<0.0003	--	--	--	--	--	<0.0011
MC-MW-4	6/24/2004	Total	N	B 0.00072	0.056	*< 0.0002	<0.0017	B 0.00036	--	--	--	--	--	0.0023
MC-MW-5	10/14/2003	Dissolved	N	<0.0004	0.0088	<0.0001	0.0506	0.507	--	--	<0.0001	B 0.00048	0.39	0.309
MC-MW-5	10/14/2003	Total	N	W 0.0037	0.0733	B 0.00014	0.243	0.477	0.072	0.405	0.0025	B 0.00086	0.578	1.5
MC-MW-5	6/24/2004	Dissolved	N	<0.0007	B0.0016	*<0.0002	0.034	0.0262	--	--	--	--	--	0.227
MC-MW-5	6/24/2004	Total	N	<0.0007	0.004	*< 0.0002	0.0325	0.0313	--	--	--	--	--	0.223
MC-MW-5	10/5/2004	Dissolved	N	<0.001	S0.0374	<0.0002	0.69	0.325	--	--	--	--	--	S4.75
MC-MW-5	10/5/2004	Total	N	<0.001	0.0314	<0.0002	0.608	0.342	--	--	--	--	--	3.83
PANEL G (DEER CREEK LEASE AREA)														
DC-MW-1	10/9/2003	Dissolved	N	<0.0004	0.901	<0.0001	B 0.0073	0.0019	--	--	<0.0001	e <0.0003	B 0.001	0.0148
DC-MW-1	10/9/2003	Total	N	0.0403	2.43	B 0.00019	0.13	0.006	--	--	B 0.00082	B 0.0012	0.268	0.585
DC-MW-1	6/23/2004	Dissolved	N	<0.0007	0.467	*<0.0002	B 0.0023	0.0036	--	--	--	--	--	B0.004
DC-MW-1	6/23/2004	Total	N	0.0161	1.27	*< 0.0002	0.0554	0.0078	--	--	--	--	--	0.258
DC-MW-2	10/12/2003	Dissolved	N	<0.0004	0.011	<0.0001	0.0266	0.0086	--	--	<0.0001	Be 0.00031	0.0182	0.138
DC-MW-2	10/12/2003	Total	N	0.012	0.786	0.00043	0.568	0.0123	--	--	0.0021	W 0.0047	0.499	4.01
DC-MW-2	6/30/2004	Dissolved	N	B0.0014	0.0289	<0.0002	0.0239	<0.0003	--	--	--	--	--	0.0277
DC-MW-2	6/30/2004	Total	N	B 0.0018	S0.0392	<0.0002	0.0232	B 0.00036	--	--	--	--	--	S 0.0553
DC-MW-3	10/11/2003	Dissolved	N	<0.0004	0.0267	<0.0001	B 0.0013	0.0011	--	--	<0.0001	e <0.0003	<0.0002	<0.0018
DC-MW-3	10/11/2003	Total	N	B 0.0019	0.0847	<0.0001	<0.001	B 0.00093	<0.0002	B 0.00093	<0.0001	B 0.00091	B 0.00097	0.0226
DC-MW-3	6/30/2004	Dissolved	N	<0.001	<0.0006	<0.0002	<0.0017	<0.0003	--	--	--	--	--	<0.0011

TABLE B-3
SUMMARY OF GROUNDWATER DATA
ANALYSIS FOR METALS
PANELS F AND G
BASELINE STUDY

Site	Sample Date	Type	QC	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Selenium All (mg/L)	Selenium IV (mg/L)	Selenium VI (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
IDAHO DEQ Standard**				**0.015**	**0.05s**	**0.002**	**NE**	**0.05**	**NE**	**NE**	**0.1s**	**0.002**	**NE**	**5.0s**
DC-MW-3	6/30/2004	Dissolved	D	<0.001	<0.0006	<0.0002	<0.0017	<0.0003	--	--	--	--	--	<0.0011
DC-MW-3	6/30/2004	Total	N	W< 0.001	S0.0495	<0.0002	<0.0017	<0.0003	--	--	--	--	--	S< 0.0011
DC-MW-3	6/30/2004	Total	D	<0.001	S0.0544	<0.0002	<0.0017	<0.0003	--	--	--	--	--	S< 0.0011
DC-MW-4	10/12/2003	Dissolved	N	<0.0004	0.0259	<0.0001	B 0.0054	0.0011	--	--	<0.0001	e <0.0003	B 0.00058	0.0104
DC-MW-4	10/12/2003	Dissolved	D	<0.0004	0.0261	<0.0001	B 0.0042	0.0011	--	--	<0.0001	B 0.00031	B 0.00057	0.0106
DC-MW-4	10/12/2003	Total	N	B 0.0016	0.0601	<0.0001	0.0194	0.0078	0.0016	0.0062	B 0.00049	B 0.00046	0.0435	0.138
DC-MW-4	10/12/2003	Total	D	0.002	0.063	<0.0001	0.0204	0.0076	--	--	B 0.00051	<0.0003	0.044	0.14
DC-MW-4	6/30/2004	Dissolved	N	<0.001	0.0138	<0.0002	B 0.0068	<0.0003	--	--	--	--	--	<0.0011
DC-MW-4	6/30/2004	Total	N	B 0.0015	S0.0183	<0.0002	B 0.0057	<0.0003	--	--	--	--	--	S< 0.0011
DC-MW-5	10/10/2003	Dissolved	N	<0.0004	0.018	<0.0001	0.0133	0.0143	--	--	<0.0001	e <0.0003	B 0.0013	0.037
DC-MW-5	10/10/2003	Total	N	<0.0004	0.0213	<0.0001	B 0.0066	0.0142	--	--	<0.0001	<0.0003	0.0155	0.075
DC-MW-5	6/25/2004	Dissolved	N	<0.0007	<0.0006	*<0.0002	0.0136	0.0105	--	--	--	--	--	0.0977
DC-MW-5	6/25/2004	Total	N	B 0.0011	B0.002	*< 0.0002	0.0128	0.0115	--	--	--	--	--	0.113
DC-MW-5	10/15/2004	Dissolved	N	B0.00062	<0.001	<0.0002	0.0131	0.0079	--	--	--	--	--	S0.0937
DC-MW-5	10/15/2004	Total	N	BW 0.00069	<0.001	<0.0002	B 0.0096	0.0097	--	--	--	--	--	0.0861
DC-MW-6	10/9/2003	Dissolved	N	<0.0004	2.12	<0.0001	B 0.0098	0.0015	--	--	W <0.0001	e <0.0003	0.0062	0.022
DC-MW-6	10/9/2003	Total	N	0.095	9.33	0.0011	1.15	0.0422	--	--	W 0.0062	B 0.0026	0.959	5.5
DC-MW-6	6/23/2004	Dissolved	N	<0.0007	0.339	*<0.0002	B 0.0062	0.0017	--	--	--	--	--	0.0064
DC-MW-6	6/23/2004	Total	N	0.021	12.6	*< 0.0002	0.238	0.0121	--	--	--	--	--	1.22
PRESERVATIVE BLANK														
EQUIPBLAN	6/30/2004	Dissolved	B	<0.001	<0.0006	<0.0002	<0.0017	<0.0003	--	--	--	--	--	B0.0029
EQUIPBLAN	6/30/2004	Total	B	0.0011	<0.0006	<0.0002	<0.0017	<0.0003	--	--	--	--	--	0.0016
FIELDBLANK	6/24/2004	Dissolved	FB	<0.0007	<0.0006	*<0.0002	<0.0017	<0.0003	--	--	--	--	--	<0.0011
FIELDBLANK	6/24/2004	Total	FB	<0.0007	<0.0006	*< 0.0002	<0.0017	<0.0003	--	--	--	--	--	<0.0011

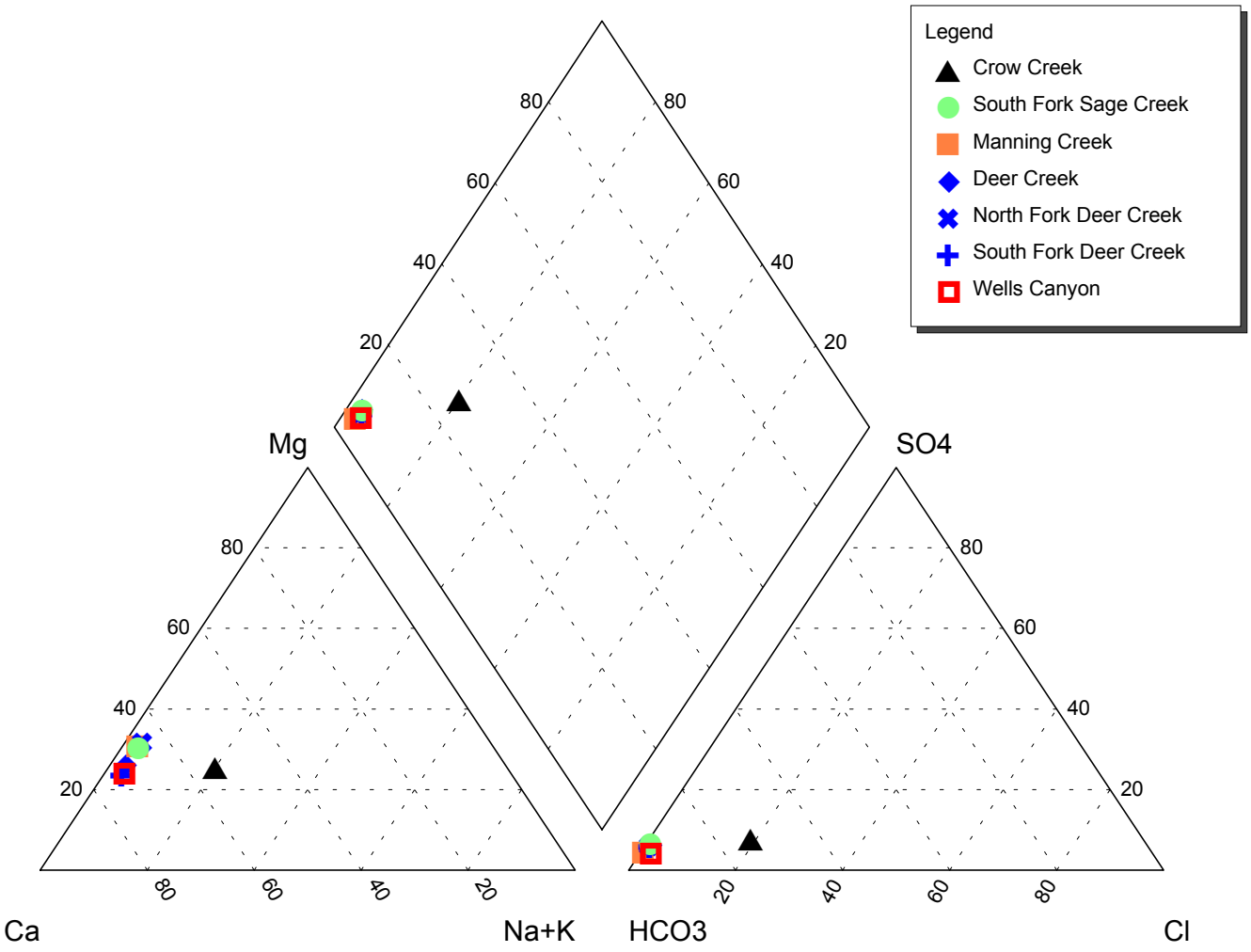
Notes:

- D Field duplicate sample.
- B Not detected above quantitation limit but present above method detection limit (SVL).
- E Estimated value due to presence of interference (SVL).
- N Located in QC column indicates natural sample.
- N Located in analyte column indicates percent recovery not within control limits 75-125% (SVL)..
- NE Not Established.
- S Serial dilution difference is >10% and original sample concentration is >50X the instrument detection limit (SVL).
- W Post-digestion spike recovery out of control limits 85-115% (SVL).
- -- Field data or laboratory samples were not collected or analyzed.
- e Field duplicate results exceed acceptable limits - PQL based determination.
- < Indicates analyte not detected above laboratory practical quantification limit (PQL).
- (mg/L) Milligrams per liter.
- * Duplicate analysis not within control limits (SVL).
- ** Standards from IDAPA 58.01.11.200. For Idaho, water quality standards are based on the total fraction for groundwater. Standard values followed by an "s" indicate a secondary standard.
- Shading indicates results above ID DEQ Standards, regardless of physical state (Total or Dissolved).

Well MC-MW-3 and MC-MW-4 formerly known as MC-MW-11 and MC-MW-6, respectively.

Graphical Plots (Piper and Stiff Diagrams)
Figures H-1 to H-9

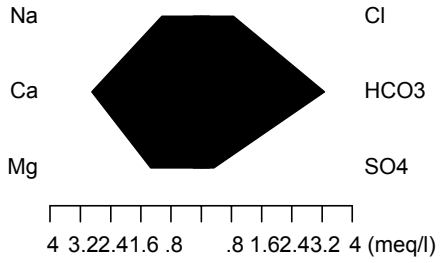
Median Surface Water Quality



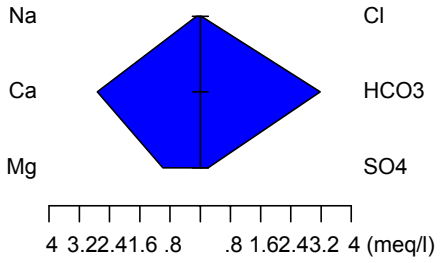
DESCRIPTION: Piper Diagram - Median surface water quality for all stations and samples within the drainage.

MAXIM TECHNOLOGIES INC®	PROJECT: Smoky Canyon Mine Panels F and G	PROJECT NO: 2560432.420
	CLIENT: J.R. Simplot	FIGURE: H-1

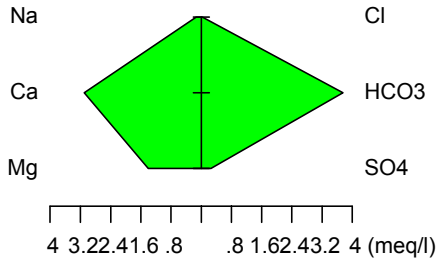
Crow Creek



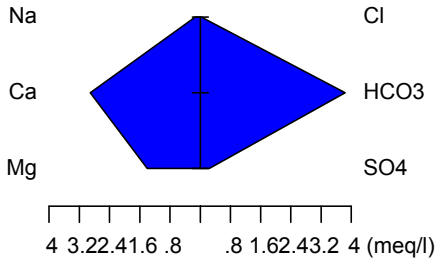
Deer Creek



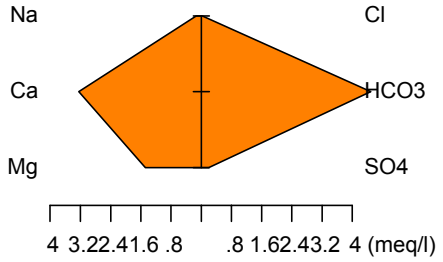
South Fork Sage Creek



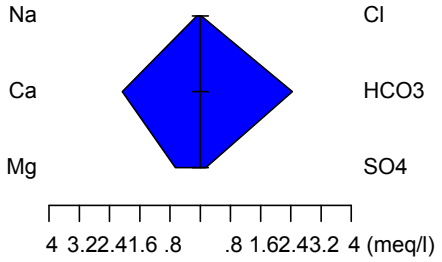
North Fork Deer Creek



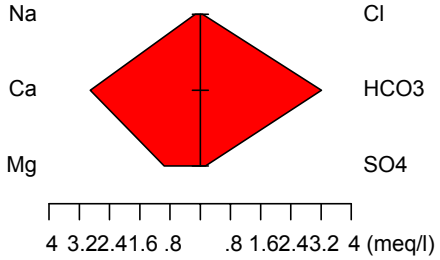
Manning Creek



South Fork Deer Creek

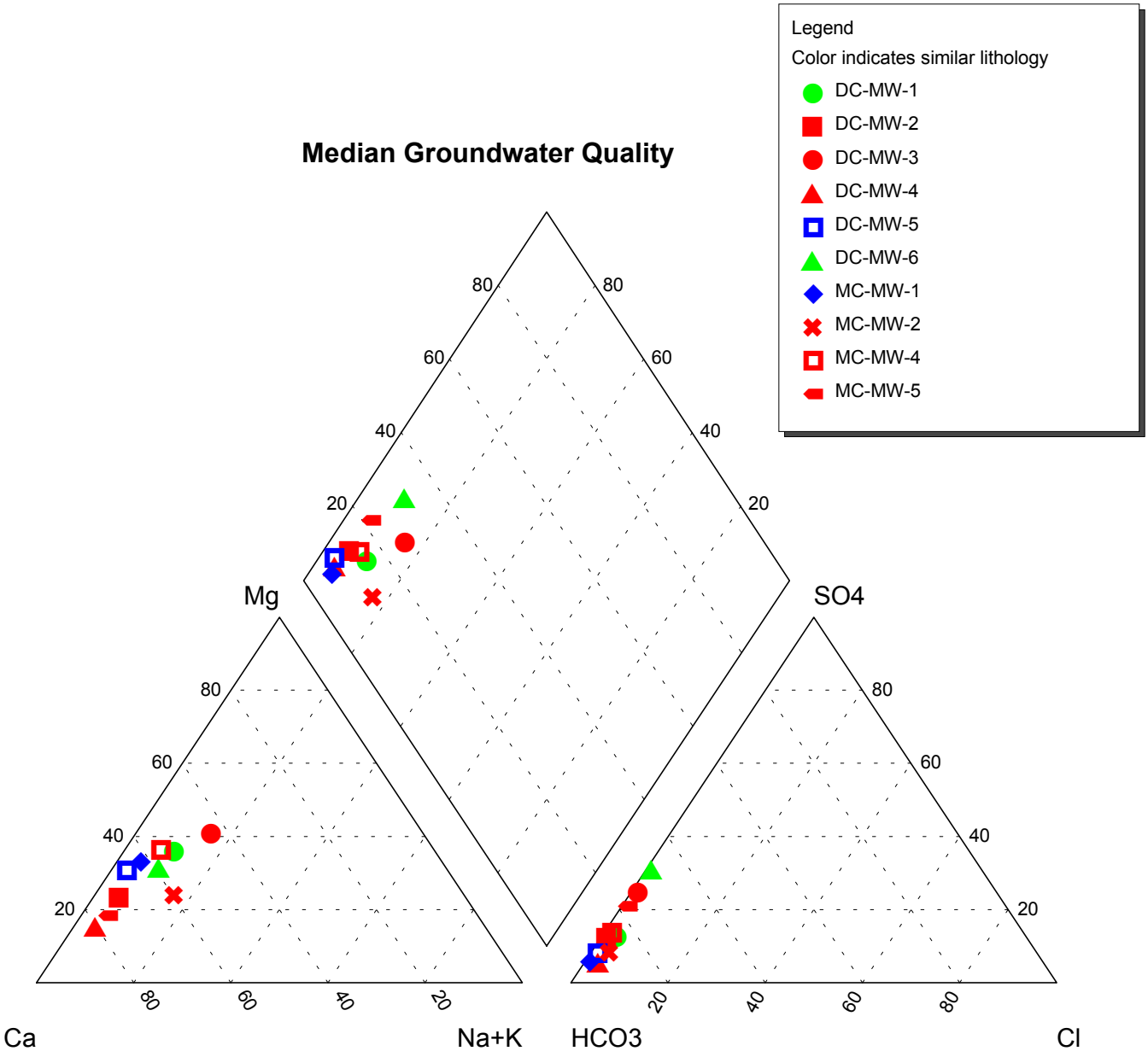


Wells Canyon



DESCRIPTION: Stiff Diagram - Median surface water quality for all stations and samples within the drainage.

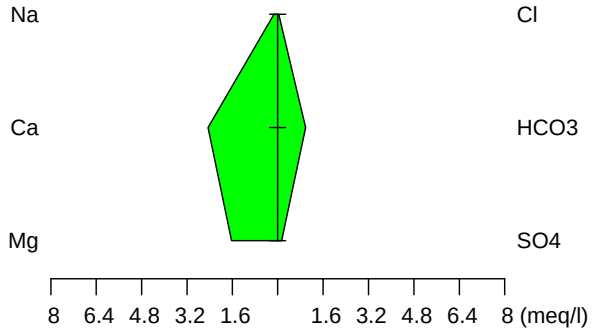
MAXIM TECHNOLOGIES INC®	PROJECT: Smoky Canyon Mine Panels F and G	PROJECT NO: 2560432.420
	CLIENT: J.R. Simplot	FIGURE: H-2



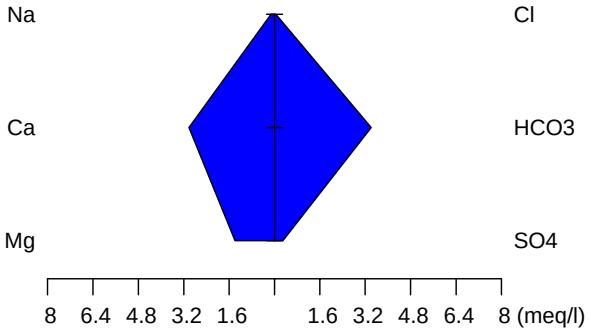
DESCRIPTION: Piper Diagram - Groundwater quality for all wells and samples colored by similar completion lithology.

MAXIM TECHNOLOGIES INC®	PROJECT: Smoky Canyon Mine Panels F and G	PROJECT NO: 2560432.420
	CLIENT: J.R. Simplot	FIGURE: H-3

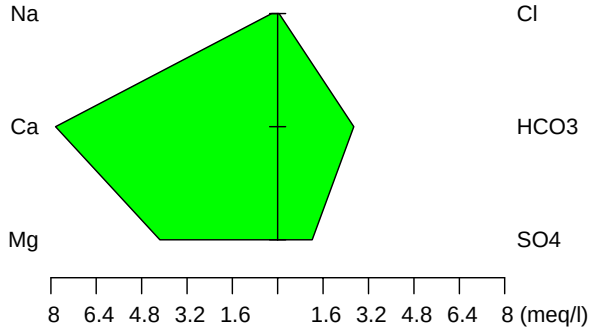
DC-MW-1



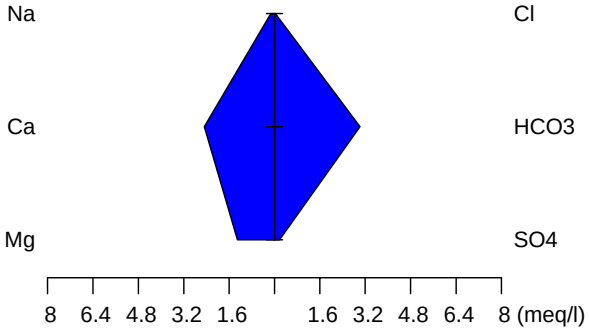
DC-MW-5



DC-MW-6



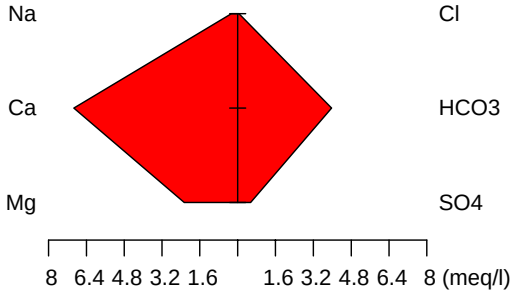
MC-MW-1



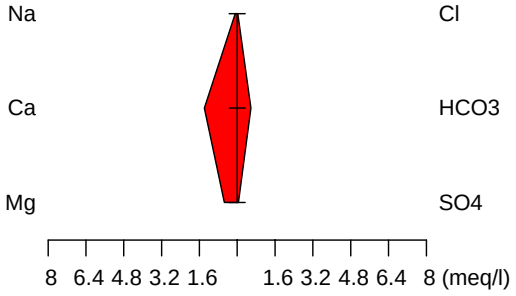
DESCRIPTION: Stiff Diagram - Groundwater quality - Green = Alluvial completion, Blue = Wells Formation completion.

MAXIM TECHNOLOGIES INC®	PROJECT: Smoky Canyon Mine Panels F and G	PROJECT NO: 2560432.420
	CLIENT: J.R. Simplot	FIGURE: H-4

DC-MW-2 (Meade Peak)



MC-MW-2 (Rex Chert)



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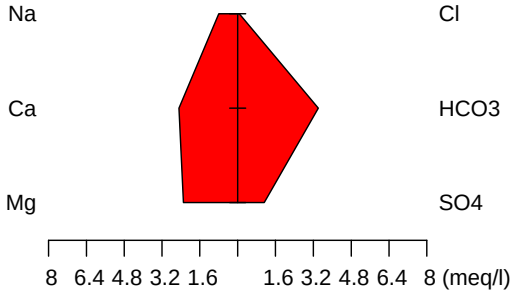

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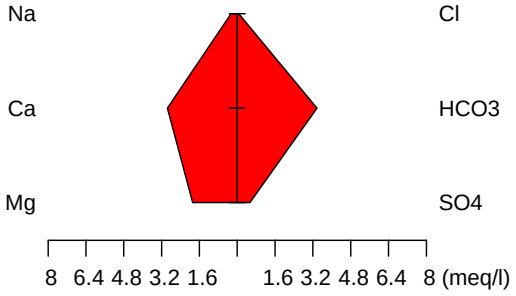

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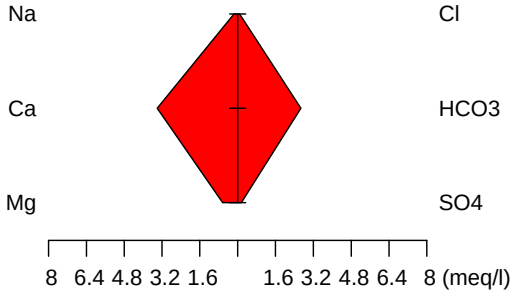
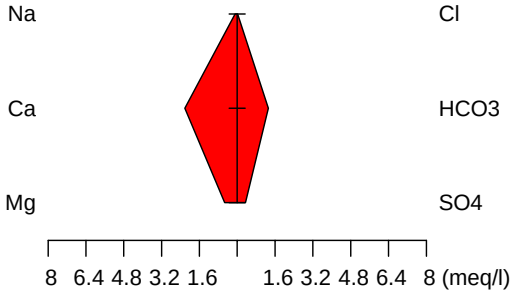
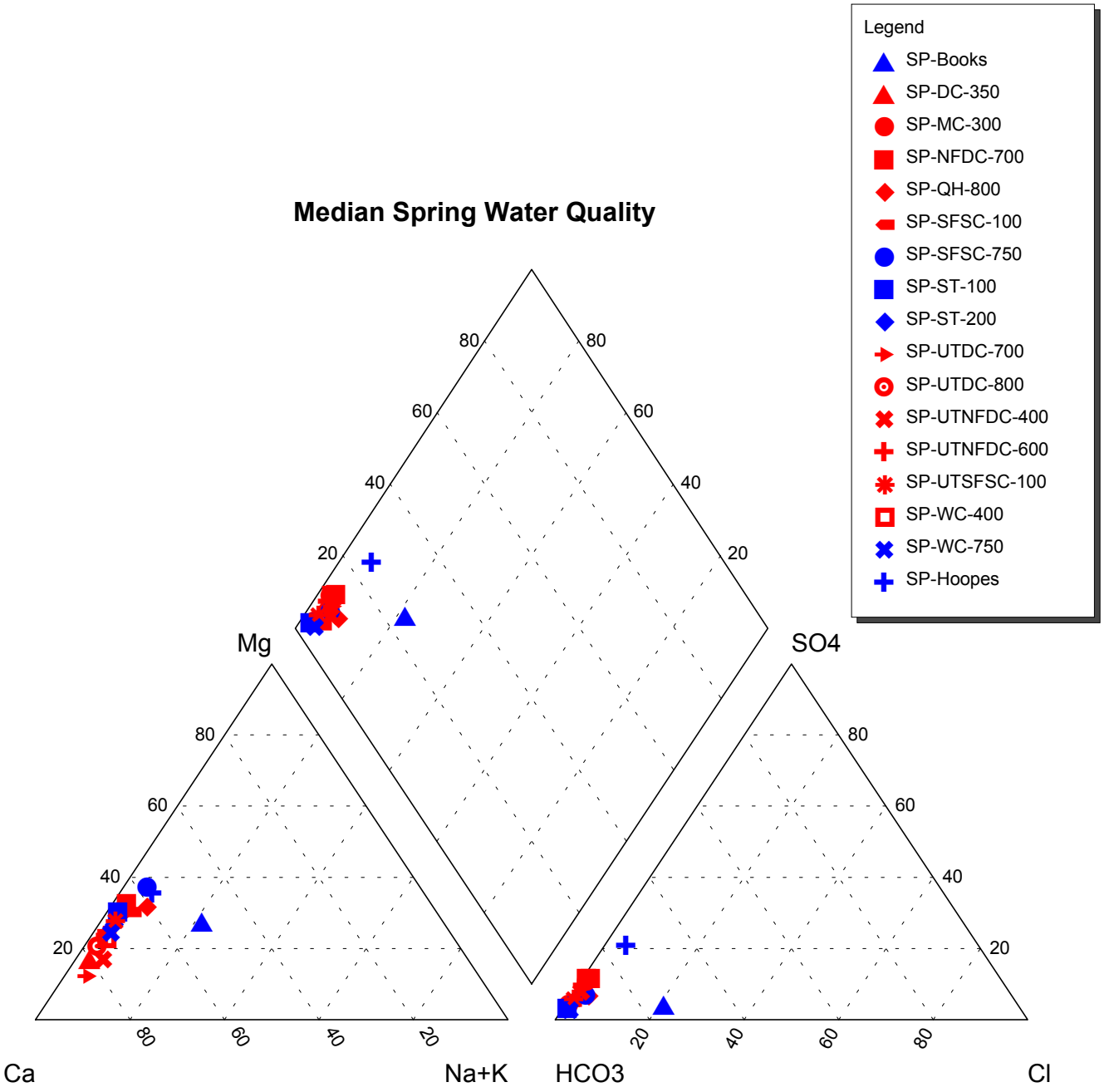


MC-MW-5 (Meade Peak)



DESCRIPTION: Stiff Diagram - Groundwater quality - Rex Chert - Meade Peak Formation completion.

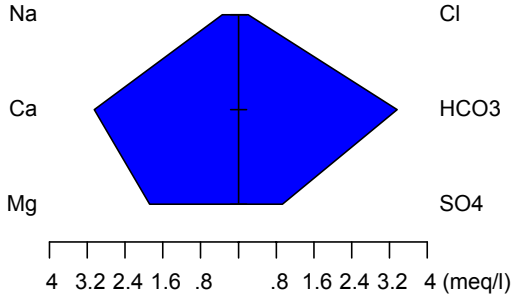
MAXIM TECHNOLOGIES INC®	PROJECT: Smoky Canyon Mine Panels F and G	PROJECT NO: 2560432.420
	CLIENT: J.R. Simplot	FIGURE: H-5



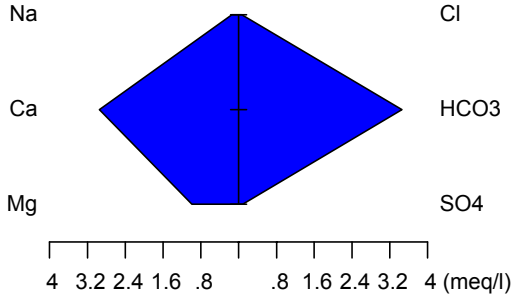
DESCRIPTION: Piper Diagram - Median spring water quality colored by similiar lithology.

MAXIM TECHNOLOGIES INC®	PROJECT: Smoky Canyon Mine Panels F and G	PROJECT NO: 2560432.420
	CLIENT: J.R. Simplot	FIGURE: H-6

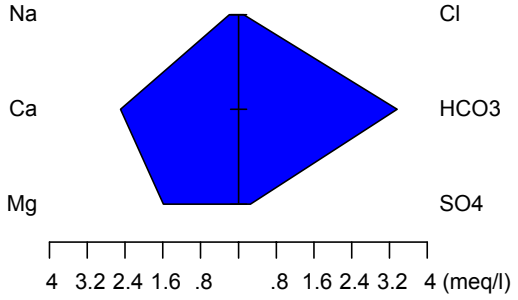
SP-Hoopes



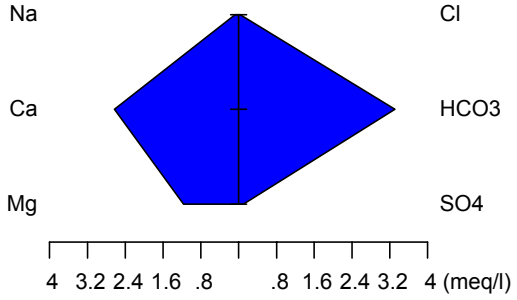
SP-WC-750



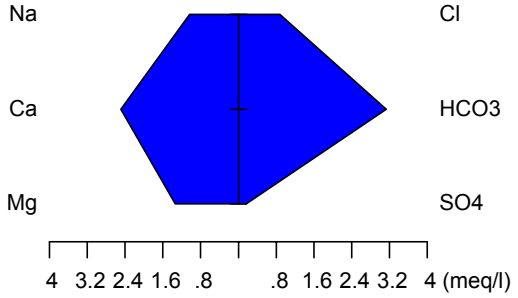
SP-SFSC-750



SP-ST-100



SP-Books



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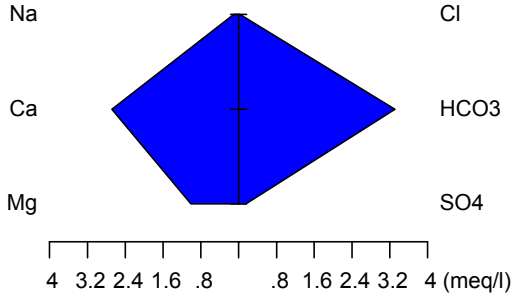
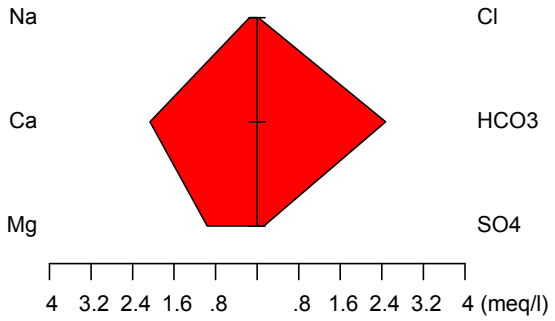


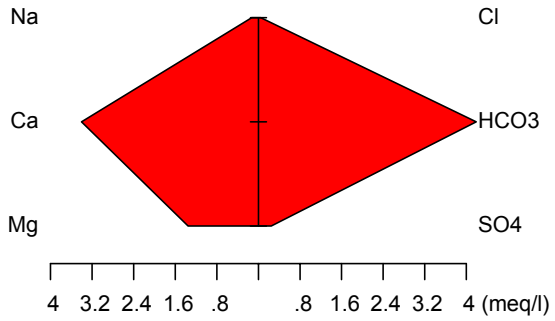
DESCRIPTION: Stiff Diagram - Median spring water quality. Blue indicates Wells Formation as source.

MAXIM TECHNOLOGIES INC®	PROJECT: Smoky Canyon Mine Panels F and G	PROJECT NO: 2560432.420
	CLIENT: J.R. Simplot	FIGURE: H-7

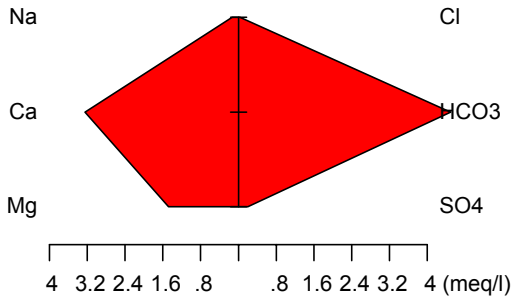
SP-SFSC-100



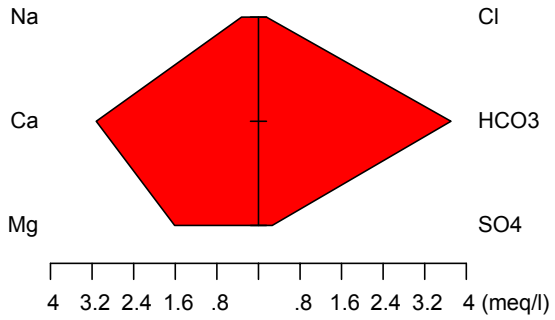
SP-UTSFSC-100



SP-MC-300



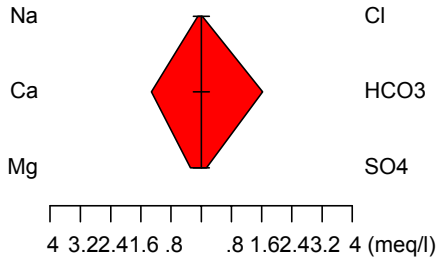
SP-QH-800



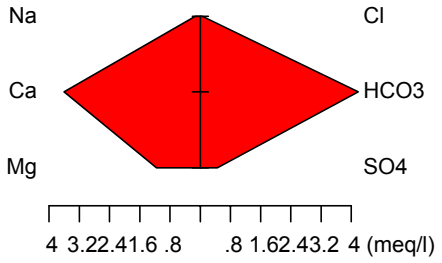
DESCRIPTION: Stiff Diagram - Median spring water quality. Panel F Lease Area. Red indicates source not likely Wells Fm.

MAXIM TECHNOLOGIES INC®	PROJECT: Smoky Canyon Mine Panels F and G	PROJECT NO: 2560432.420
	CLIENT: J.R. Simplot	FIGURE: H-8

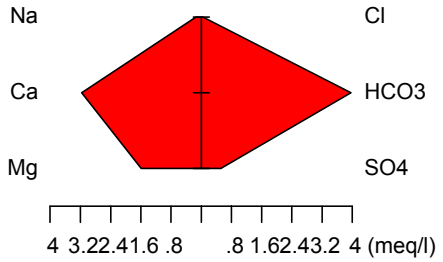
SP-UTNFDC-400



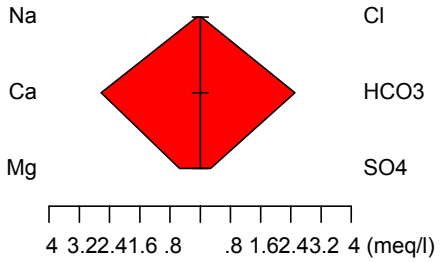
SP-UTNFDC-600



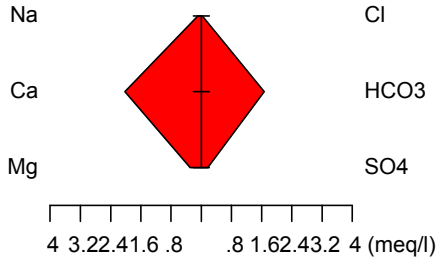
SP-NFDC-700



SP-DC-350



SP-UTDC-700



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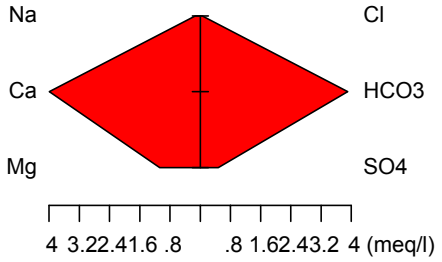
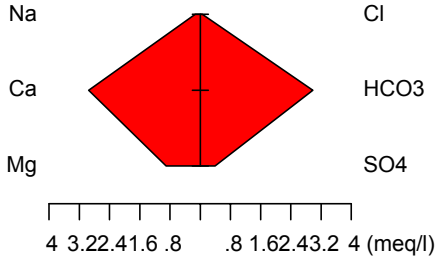


SP-WC-400



DESCRIPTION: Stiff Diagram - Median spring water quality. Panel G Lease Area. Red indicates source not likely Wells Fm.

MAXIM TECHNOLOGIES INC®	PROJECT: Smoky Canyon Mine Panels F and G	PROJECT NO:
	CLIENT: J.R. Simplot	FIGURE: H-9

Appendix 3B
Spawning Gravel Requirements for Cutthroat Trout

Spawning Gravel Requirements for Cutthroat Trout
Technical Memo

1.0 Introduction

Cutthroat trout spawn under specific stream conditions related to water temperature, substrate (gravel) characteristics, and other physical cues (e.g., water velocity). Female salmonids construct nests by first clearing away fine sediment to create a pocket that contains less sediment than the surrounding gravel (Hartman & McMahon 2004). Sediment intrusion into the nest can reduce intra-gravel permeability, thereby limiting the supply of oxygen to developing embryos (Reiser & White 1988). Numerous early (pre-1970) field and laboratory studies established that the amount of "fines" or fine sediments (usually < 6 mm in diameter) in spawning gravel is directly related to embryo mortality (reviewed in Chapman 1988), and the requirements of spawning trout (most often steelhead or rainbow) with regard to precise sediment content in gravel have since been studied extensively.

2.0 Cutthroat trout

Thurow and King (1994) first described the spawning requirements of Yellowstone cutthroat trout in southeast Idaho with regard to precise sediment content. They characterized spawning sites of Yellowstone cutthroat trout in a Snake River tributary (Pine Creek, southeast Idaho) and found that, on average, 20% of the gravel substrate was smaller than 6.35 mm and 5% was less than 0.85 mm. In general, cutthroat trout in their study spawned over substrate with a wider range of particle sizes (0.06-100 mm in diameter) than those found in the literature (Thurow & King 1994). Other studies (cited in Thurow & King) find that cutthroat prefer gravels from 19-76 mm (Cope 1957), 12-85 mm (Varley & Gresswell 1988), or 15-60 mm (Hickman & Raleigh 1982).

3.0 Other trout species in Idaho

Studies of other trout in Idaho add to the consensus that embryo survival is indirectly related to the percentage of fine sediment in spawning gravel, and at similar levels as were found for the Snake River Yellowstone cutthroat. McCuddin (1977) found steelhead survival in natural spawning areas decreased as the proportion of sand in the substrate increased above 10-20%. In that study, any percentage of 6-12 mm particles above 10-15% appeared to reduce survival, as did any percentage of fines (<6 mm) above about 20-25% (McCuddin 1977 *cited in Chapman 1988*). Reiser and White (1988) found a similar threshold for fine sediments. They incubated steelhead trout eggs in 16 mixtures of fine (<0.84 mm) and coarse (0.84-4.6 mm) sediments (representative of those found in the Idaho batholith) into laboratory gravel nests and found that embryos were more sensitive to increases in fines (<0.84 mm). They found a ratio of 30% fine sediment (and 70% gravel) was generally the lethal limit for steelhead embryos. Using sediments "imported" from streams in central Idaho, Tappel and Bjornn (1983) found that 90-93% of the variability in steelhead embryo survival (in the laboratory) was correlated negatively to the percentage of two different particle sizes in gravel: sediment less than 0.85 mm and sediment less than 9.5 mm in diameter, thus medium-sized sediment may also play an important role in survival of some species.

4.0 References

Chapman, D. W. 1988. Critical review of variables used to define effects of fines in redds of large salmonids. Transactions of the American Fisheries Society 117(1): 1-21.

Cope, O. B. 1957. The choices of spawning sites by cutthroat trout. Proceedings of the Utah Academy of Arts and Sciences, Arts, and Letters 34: 73-79. *Cited in Thurow & King 1994*

Hartman, G. F., and T. E. McMahon. 2004. "Aspects of fish reproduction and some implications of forestry activities." In Fishes and Forestry: Worldwide Watershed Interactions and Management, eds. T. G. Northcote and G. F. Hartman. Blackwell Science.

Hickman, T., and R. F. Raleigh. 1982. Habitat suitability index models: cutthroat trout. US Fish and Wildlife Service, Habitat Evaluation Procedures Group, Western Energy and Land Use Team. Fort Collins, Colorado. *Cited in Thurow & King 1994*

McCuddin, M. E. 1977. Survival of salmon and trout embryos and fry in gravel-sand mixtures. Master's Thesis. University of Idaho, Moscow, Idaho. *Cited in Chapman 1988*

Reiser, D. W., and R. G. White. 1988. Effects of two sediment size-classes on survival of steelhead and chinook salmon eggs. North American Journal of Fisheries Management 8: 432-437.

Tappel, P. D., and T. C. Bjornn. 1983. A new method of related size of spawning gravel to salmonid embryo survival. North American Journal of Fisheries Management 3:123-135.

Thurow, R. F., and J. G. King. 1994. Attributes of Yellowstone cutthroat trout redds in a tributary of the Snake River, Idaho. Transactions of the American Fisheries Society 123: 37-50.

Varley, J. D., and R. E. Gresswell. 1988. Ecology, status, and management of the Yellowstone cutthroat trout. American Fisheries Society Symposium 4: 13-24. *Cited in Thurow & King 1994*

Appendix 4A
Watershed Erosion Prediction Project Modeling

Watershed Erosion Prediction Project (WEPP) Modeling
Smoky Canyon Mine
Panels F and G Extension Area

Introduction

Quantifying the amount of soil erosion by water from any given land surface, or quantifying the amount of sediment that would be contributed from an eroded surface to a given stream channel on a storm, annual, or long term basis, is not possible to do with any degree of certainty. The USFS commonly estimates water erosion and sedimentation with a model titled: *Water Erosion Prediction Project* (WEPP), and its various use-specific, stand-alone modules.

The WEPP soil erosion model has been developed by an interagency group of scientists including the USFS, Agricultural Research Service, Natural Resource Conservation Service (NRCS), BLM, and Geological Survey (USDA 2000). This model incorporates processes such as infiltration, runoff, soil detachment, transport and deposition, plant growth, senescence, residue decomposition, effects of tillage processes, and soil consolidation to evaluate erosion and sediment delivery potential. Actual erosion rates are highly variable due to large variations in local topography, climate, soil properties, and vegetative properties.

For the Smoky Canyon Mine Panel F and G Extension Area Environmental Impact Statement (EIS) the WEPP model was used to estimate erosion from the proposed major mine disturbances, and the stand-alone WEPP:Road module, titled "*Interface for Predicting Forest Road Runoff, Erosion and Sediment Delivery*", was used to estimated sedimentation to nearby streams from the proposed transportation alternatives. Custom climate parameters that are characteristic of the area were input into the WEPP module to approximate the most accurate climate conditions.

Model Descriptions, Assumptions, and Inputs

Complete documentation for both the WEPP program itself, and the road module, can be found at http://forest.moscowfsl.wsu.edu/fswepp/. Brief descriptions of the two are provided below. The WEPP documentation states that the accuracy of predicted values obtained by the model or its use-specific modules "are, at best, within plus or minus fifty percent." For this reason, the actual values obtained from the model for this EIS and presented herein should not be the focus of the analysis; instead the relative magnitudes should be used as a means of comparing the various alternatives.

Disturbed WEPP

The Disturbed WEPP (USDA 2000) model was utilized to represent erosion predictions for reclaimed areas during both interim vegetation establishment and at the completion of successful revegetation. Details specific to the Disturbed WEPP model can be found on the website http:/forest.moscowfsl.wsu.edu/fswepp/docs/distweppdoc.html. It should be noted that the WEPP model is not designed for mining disturbance areas of this type or size and the program does not have provisions to allow for the implementation of BMP=s, the degree of coarse fragments in the soil, or other variables which influence erosion and sedimentation.

Input data utilized in WEPP analysis includes 4 different soil textures, 8 different vegetation scenarios, various slope values, length of slope, percent cover, and a model time length of up to 30 years. WEPP simulates the conditions that impact erosion such as vegetation canopy, surface residue, and the soil water content for every day in a multiple-year run (USDA 2000). For each day that has a precipitation event, WEPP determines whether the event is rain or snow, and calculates the infiltration and runoff, routing the runoff over the surface and calculating the erosion or deposition rates for at least 100 points on the hill slope. It then calculates the average sediment yield from the hill slope.

The WEPP models for all disturbed areas for the Proposed Action and Alternatives were run with local climate data in order to take into account annual precipitation patterns, elevation, and temperatures to more accurately calculate the effects of runoff. The Rock:Clime subroutine in WEPP was used to generate a local precipitation and termperature data set by applying adjustments to the program's internal Palisades Dam, Idaho, weather data to better match the reported 30-35 inches of annual precipitation at Smoky Canyon. Analyses are based on 30 years of climate data. Mean annual averages are predicted using the probability of precipitation, type of precipitation, number of storm events, the upland erosion rate and the sediment leaving the profile.

Baseline Disturbed WEPP input parameters for both interim and successful revegetation conditions identify the dominant soil textures in the area as loam and silt loam. Horizontal slope lengths of 50 and 100 feet were utilized for all of the model alternatives. Reclaimed and regraded slopes would be less than 33 percent, with rock cover estimated at 20 or 40 percent, depending upon location.

Modeling for interim revegetation was calculated using 40 percent cover, which is approximately equivalent to the presence of short prairie grass. Interim revegetation conditions also include the establishment of cover crops on temporary growth medium stockpiles.

WEPP prediction parameters for successfully reclaimed mining areas include the baseline parameters identified above, and an average of 70 percent vegetation cover consisting of short prairie grass and tall prairie bunch grasses, which is consistent with the components of the revegetation seed mix.

WEPP:Road

WEPP:Road, was designed to predict erosion and subsequent sediment yield from forest roads based upon general information on climate, soil, road surface, local topography, drain spacing, road design, and ditch condition. These inputs differ in some instances than those required for the main WEPP program described above. Module-specific documentation for the WEPP:Road module can be found on the internet at http://forest.moscowfsl.wsu.edu/fswepp/docs/wroadimg.html.

WEPP:Road presumes three flow segments (a travelway/ditch component, a fill slope, and a forested buffer) to derive average annual sediment yield, in pounds to the nearest stream channel. WEPP:Road does not account for any mass failures, culvert failures, cut slope erosion, or erosion from cross-drain channel structures. It presumes that fill slopes have a 50-percent vegetated ground cover, and that there is a forested buffer between the road fill and the stream channel that has a 100-percent vegetation/litter ground cover. Essentially, WEPP calculates erosion from the road surface and the fill slope, and then uses the buffer slope characteristics to route the eroded material to the stream channel. The sediment delivery ratio varies depending upon the buffer length and slope. The closer a road segment is to a stream, and the larger the road is, the more likely it would be for it to contribute sediments, according to WEPP:Road. Research on sediment transport from forest roads in central Idaho (Ketcheson and Megahan, 1996) shows that source of the eroded material (i.e. fill slopes, cross drains, etc.) also affects transport distances; Seyedbagheri (1996) reported that road size (width, cut/fill lengths, volume of material) affects both unit erosion rate and transport distance.

WEPP:Road allows the user to choose a graveled road surface. This type of surfacing, which is proposed for all road alternatives herein, is one of the more effective treatments in regard to erosion control from roads. Otherwise, the model does not consider any other erosion or sediment control BMPs that may serve to reduce erosion or sediment loading (with the exception of the important BMP of fill slope vegetation, which WEPP:Road assumes as a given). In sum, WEPP:Road assumptions do not always closely match conditions for the proposed roads; in some cases causing an overestimation of sedimentation and in other cases, an underestimation.

For this analysis, the specific inputs to the WEPP:Road module were determined based on the following sources: Chapter 2 road design information (road width, fill slope gradient, surfacing; and road shape/ditch configuration); conceptual design road footprints provided by Simplot (fill slope length and road gradient); soil mapping (USDA 1976; USDA 1990) (to place individual reaches in one of four soil categories allowed by the model); and topographic mapping (buffer length and slope). Model iterations were made over a 15-year period to represent the approximate life of these roads, but it is generally shown that the first year or so after construction represents the greatest erosion potential (Ketcheson and Megahan, 1996). The same climate parameters that were used in Disturbed WEPP were used for WEPP:Road.

WEPP Modeling Results

Erosion from Mine Disturbances

WEPP model predictions for existing conditions indicate that the potential for erosion of a 20-year-old forest on 45 to 55 percent slopes over a 30-year period of time is 3 percent, indicating that one out of 30 years would have erosion. For the same age forest on slope values of 15 to 25 percent, or slopes of 0 to 15 percent, would still only incur erosion approximately 3 percent of the time, or one year out of 30. Changing vegetation for the same slope classes indicates that shrub and grass cover could have erosion occur 70 percent of the time over the 30-year period, or 21 out of 30 years.

Existing slope values in the study area range from 0 to 55 percent, with only 19 percent of the area having slopes less than 20 percent. Approximately 10 percent of the area is in the 45 to 55 percent slope range, and 26 percent is in the 35 to 45 percent slope range. A significant portion of the area contains map units with a wide range of slopes, from 10 to 55 percent, or consists of rock outcrop or disturbed area. Slope values for reclaimed slopes under the Proposed Action and Alternatives would have a range of 1 to 45 percent slope with the majority of reclaimed areas incorporating a gentle 3:1 (Horizontal:Vertical) slope surface during regrading and reclamation activities. Vegetation in the area consists of mixed forests, shrubs, and grasses. WEPP predictions for existing conditions indicate that there would be a 0 to 3 percent probability of erosion, with an average annual upland erosion rate of 0.04 tons per acre.

WEPP predictions for interim vegetation establishment on disturbed mine areas indicate that there would be a 47 to 67 percent chance of erosion during the first three years of reclamation, with an annual upland erosion rate ranging from 0.472 to 1.420 tons per acre. The average annual upland erosion rate for all WEPP model runs for interim vegetation establishment is 0.78 tons per acre.

Disturbed WEPP predictions for successfully established vegetation on areas of reclaimed mine disturbance indicate an annual upland erosion rate that would range from 0.027 to 0.458 tons per acre, with a 17 to 40 percent potential for this degree of erosion to occur. The average annual upland erosion rate for all WEPP model runs for successful vegetation establishment is 0.17 tons per acre.

Sedimentation to Streams from Road Disturbances

The following table shows the WEPP:Road results for the Proposed Action roads and Alternative roads. These numbers show the estimated quantity of eroded material that would make its way through the buffer and into the stream; the predicted quantities of eroded material are also calculated by WEPP:Road, but are not presented directly here. The last row of this table provides a range of values that are +/- 50 percent, which represents the level of model accuracy. As noted above, for these applications of the model, the range is likely to be even greater because the road design differs significantly from model assumptions.

SEDIMENTATION TO STREAMS FROM ROAD EROSION (TONS OF SEDIMENT, ANNUAL AVERAGE)

STREAM	P.A. PANEL F HAUL	P.A. WEST HAUL	ALT. 1	ALT. 2	ALT. 3	ALT. 4	ALT. 5	ALT. 6	ALT. 7	ALT. 8
SOUTH FORK SAGE	1.45	0.5	1.10	0	0	3.5	3.5	0.05	0	1.00
LOWER SAGE*	0.15	0	1.20	1.70	1.70	0	0	0	0.05	0
MANNING	0	0	0	3.75	3.75	0.90	0.90	0	0	0
DIAMOND	0	0	0	0	0	0	0	0	0	0
DEER	0	31.95	0	2.05	5.00	21.55	35.5	1.55	0	7.50
NATE	0	0	0	4.05	4.05	0	0	0	0	0
WELLS	0	0	0	0.05	0.05	0	0	0	2.60	0
CROW**	0	0	0	3.3	2.50	0	0	0	1.15	0
TOTAL	1.60	32.45	2.30	14.90	17.05	25.95	39.90	1.60	3.80	8.50
RANGE	0.8-2.4	16.22-48.67	1.15-3.45	7.45-22.35	8.52-25.58	12.98-38.92	19.95-59.85	0.80-2.4	1.9-5.7	4.25-12.75

*Contributed to Sage Creek downstream of South Fork Sage; does not include quantities listed for South Fork Sage.

**Includes quantities contributed directly to Crow Creek or to one of the small, unnamed tributaries to it; does not include quantities listed for the other named tributaries listed in the table.

Additional Analysis Using WEPP Results

Mine Disturbances

Erosion control is an effective long-term solution to conserve soil resources, whereas sediment control is a short-term remedy to minimize the impact of unavoidable erosion that occurs during the construction period. Calculated erosion figures as determined from the Disturbed WEPP model (USDA 2000) would be reduced or eliminated with implementation of applicable BMPs. Implementation of BMPs would reduce potential for water erosion, control sediment collected in surface runoff, and mitigate the potential effects of erosion and sedimentation. BMPs utilized would consist of measures for sediment collection, erosion control, runon/runoff collection, soil stabilization, slope stabilization on reclaimed areas, seeding and revegetation, overburden dump construction, and range management, including:

- Use of concurrent reclamation techniques and placement of topsoil/growth medium on a prepared surface to provide a suitable seed bed.
- Avoiding the creation of flat or concave surfaces on overburden surfaces to reduce infiltration.
- The placement of check dams in diversion ditches to break the momentum of surface water runoff and reduce the flow velocities.
- Grading slopes to 3H:1V or less in order to reduce the soil loss associated with steeper slopes.
- Regraded areas would be ripped and scarified to reduce soil compaction.
- Reclaimed areas may be fenced as needed to protect vegetation from livestock grazing during the first few years of establishment.

These methods stabilize the reclaimed slopes and facilitate achievement of post-reclamation objectives.

Road Disturbances

In order to account for the fact that a number of BMPs that would be implemented on the proposed roads could either reduce erosion, or reduce the amount of eroded material that can potentially pass through the buffer (by using sediment control up-gradient of the buffer), additional analysis beyond WEPP:Road modeling was done. First, the literature was searched to find documentation on effectiveness of various BMPs used in the most relevant types of applications and in an analogous environment. Ketcheson and Megahan (1996) showed that forest roads in central Idaho that included maximum, intensive erosion control practices reduced erosion rates by 66 percent over similar roads with more typical erosion control. The USFS (1981) reported sediment traps below roads in Idaho that were estimated at 80 percent efficiency, and numerous other individual treatments with percent reduction in erosion of between 10 and 60. Numerous other authors have reported reductions in sedimentation from roads due to BMPs in the range of 75 to 88 percent (Burns et al, 1995; Burroughs and King, 1989; Belt et al 1992). Seyedbagheri (1996) provided qualitative and quantitative effectiveness

information for road BMPs based upon many other researchers' work in Idaho; those results were wide-ranging, but the report generally showed that BMPs are effective. The roads for which these kinds of analyses are available are generally small scale forest roads rather than the very wide haul roads with large areas and volumes of disturbance, which are proposed here. Though the proposed alternate access roads and the proposed alternate conveyor road would have much smaller footprints than the haul roads, they too, are larger than most of the forest roads analyzed in the literature.

Next, using the above effectiveness information as a guide, a percent reduction assumption was made to apply to the Simplot Proposed Action and Alternative roads. As noted above, the scale of road disturbance is related to both unit erosion and transport, so BMPs may be inherently less effective than on smaller scale roads. Similarly, the rugged topography of many of the alternatives would also strain BMPs. Also as noted, WEPP:Road already accounted for graveling, fill slope vegetation cover, and cross drain use. Alternatively, Simplot's use of silt fences, sediment traps, windrows, etc., and a maintenance/inspection schedule that may be better than typical for forest roads, all need to be counted for their potential to reduce sediment loading. An estimate that the calculated erosion (not sedimentation) rates predicted by WEPP:Road could be reduced by 70 percent on haul roads and 75 percent on access roads due to BMPs not otherwise accounted for in the model seems reasonable.

One or the other of those percentage reductions were applied to each road reach in the analysis. Once reduced erosion rates, by reach, were determined, they were further reduced to account for the deposition in the buffer zone between the road and the stream. This latter reduction was done by applying the same percent reduction that resulted from the original WEPP:Road analysis. For example, if a given annual erosion rate on a haul road, as calculated by WEPP:Road, was 5,000 lbs, that number would be reduced to 1,500 lbs. If, in the original analysis, the entire 5,000 lbs was deposited in the buffer, with a resultant sediment loading of 0 lbs, the 1,500 lbs would similarly be reduced to 0. But, if the original analysis showed that 3,000 of the 5,000 eroded lbs reached the stream, the 1,500 lbs would be reduced by the same factor, with the final estimate of 900 lbs reaching the stream from that segment. The results of this analysis are given in the following table, which is also contained in Section 4.3 of the EIS. The implications of these results are described for each road in the appropriate EIS subsection.

REVISION OF SEDIMENT LOADING TO STREAMS FROM ROAD EROSION WITH BMP IMPLEMENTATION (TONS OF SEDIMENT, ANNUAL AVERAGE)

STREAM	P.A. PANEL F HAUL	P.A. WEST HAUL	ALT. 1	ALT. 2	ALT. 3	ALT. 4	ALT.5	ALT.6	ALT. 7	ALT. 8
SOUTH FORK SAGE	0.45	0.15	0.35	0	0	1.05	1.05	0	0	0.20
LOWER SAGE*	0.05	0	0.35	0.50	0.50	0	0	0	0	0
MANNING	0	0	0	1.20	1.10	0.25	0.25	0	0	0
DIAMOND	0	0	0	0	0	0	0	0	0	0
DEER	0	8.30	0	0.60	1.50	6.45	9.35	0.40	0	1.9
NATE	0	0	0	1.20	1.20	0	0	0	0	0
WELLS	0	0	0	0	0	0	0	0	0.65	0
CROW**	0	0	0	1.00	0.75	0	0	0	0.30	0
TOTAL	0.50	8.45	0.70	4.5	5.05	7.75	10.65	0.40	0.95	2.1
RANGE	0.25-0.75	4.22-12.67	0.35-1.05	2.25-6.75	2.52-7.58	3.88-11.62	5.32-16.00	0.20-0.60	0.48-1.42	1.05-3.15

*Contributed to Sage Creek downstream of South Fork Sage; does not include quantities listed for South Fork Sage.

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Discussion of Results

It should be noted that the Disturbed WEPP model does not have provisions to allow for the implementation of BMPs, the degree of other coarse fragments in the soil, or other mitigative variables, which influence erosion and sedimentation. Disturbed WEPP also describes all vegetation in cropland format, which is not directly comparable to reclamation conditions. Rock fragment content over 50 percent is not accepted by WEPP. Above 50 percent, WEPP assumes there is not further impact from increased rock content. Many of the soils in the study area have naturally high coarse fragment content, which is not considered when running WEPP.

The sediment quantities estimated to enter streams from roads presented in the two relevant tables above should not be taken as specific values, but should be used to compare the alternatives. However, some sedimentation to area streams from the Proposed Action and from all alternatives should be expected. Although the BMPs may minimize or reduce this potential, it is not reasonable to expect that all sediment from mining operations and transportation routes can be kept from streams.

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