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July 18, 2012 Ref.: 2010-084

Mr. Pete Jones
On-Scene Coordinator
USDA Forest Service, Region 6
645 Washington Street
Ashland, Oregon 97520

Technical Memorandum
June 2012 Site Inspection Report
Blue Ledge Mine
Rogue River-Siskiyou National Forest

Dear Mr. Jones:

Engineering/Remediation Resources Group, Inc. (ERRG) is submitting this technical memorandum summarizing the site inspection performed on June 1, 2012 and any maintenance activities conducted since the last inspection on May 1, 2012 at the Blue Ledge Mine site. ERRG performed the site inspection in coordination with operations, maintenance, and monitoring (OM&M) requirements for the Blue Ledge Mine site under the U.S. Department of Agriculture Forest Service (Forest Service) Contract No. GS-10F-0294R, Delivery Order No. AG-0489-D-10-0126. For a full list of elements inspected, please see the attached site inspection checklist (Enclosure 1), overall site map (Enclosure 2), photographic log (Enclosure 3), maintenance checklist (Enclosure 4), and Apex Labs analysis report (Enclosure 5).

Background

In 2010, ERRG was contracted to perform a removal action to remove waste rock from four waste rock piles (WRPs) near the mine adits. The waste rock was relocated to a newly constructed on-site repository. The repository was capped after the waste rock had been removed from the WRPs. Disturbed soil areas within the reclamation areas were re-vegetated with native species. Nine pH treatment and sediment basins were constructed below the WRPs to capture sediment and to treat mine drainage prior to discharge into Joe Creek. ERRG was contracted to perform OM&M of the repository cap and structures constructed to control erosion and treat mine drainage, as outlined in the Removal Action Work Plan (Work Plan)[1]. The Work Plan specifies that site inspections will be performed after rain events generating greater than 0.5 inches of precipitation, as recorded by nearby representative weather stations, and on a monthly basis when the site is accessible, which is generally between April through October.

During each site inspection, ERRG reviews the following elements:

[1] ERRG, 2010. "Removal Action Work Plan Non-Time-Critical Removal Action for Former Blue Ledge Mine Site, Siskiyou County, California."

- Integrity of the reclamation areas
- Areas where erosion or deterioration has occurred since the last site visit
- Condition of the erosion control and sediment control measures
- Integrity of constructed site elements (documented via photographs)
- Condition of reclamation plantings
- Needed maintenance and repairs

Summary of Site Inspection

ERRG inspected all reclamation areas during this June 2012 site inspection. The reclamation areas were observed to be intact and in good functioning condition. Generally, the best management practices (BMPs) to control erosion were in good condition. No additional erosion had occurred since the May 2012 inspection in all reclamation areas.

The repository had no additional erosion. During the May 2012 inspection, the repository's anchor trench drain outlets were discovered to be covered by soil that had eroded from the repository slope below the access road. In May 2012, all anchor trench drain outlets were exposed, and the drain outlets were still exposed during the June 2012 site inspection. The repository does not require any additional erosion control measures.

No additional erosion was observed on the incoming Forest Road 1060 and haul roads. Overall, the roads were in very good shape, except for small areas noted in previous inspections that require maintenance. The stockpile areas and WRPs 1, 2, 3, and 4 also had no new erosion. All sediment basins had the same amount of sediment as was reported during previous inspections.

The pH of water in the basins was low because water flow through the basins was primarily from mine drainage and a seasonally declining flow of surface water. The following table shows the pH for water in all sediment treatment basins. No water was flowing from WRP 2 through basins 2A and 2B, thus no samples were collected during this site inspection.

Table 1. pH of Sediment Treatment Basins

WRP 1		WRP 2		WRP3	
1A	5.0	2A-below[1]	NS	3A-below	5.3
1B	5.0	2A-above[2]	NS	3B-above	6.5
1C	5.0	2B-below	NS		
1D	5.0	2B-above	NS		
1E	5.0				
1F-below	5.0				
1F-above	4.0				

Notes:

1 = sample was collected just below the basin

2 = sample was collected in the basin.

NS = no sample was collected because water was not present in the treatment basin.

Based on the sample results, the pH of the water in basins 1A through 1F does not appear to be reacting with the limestone. Limestone fouling will be evaluated during clean out of the accumulated sediment in August 2012. If the limestone has fouled, it will be replaced. The pH is above the pH reading of 3.74 measured during fall 2011 in the main drainage[2]. It is expected that the pH will continue to decrease as the flow of water decreases. It is unlikely that sediment is being transported to Joe Creek because no additional sediment has accumulated in the sediment basins.

Some of the reclamation area plantings did not survive over the winter. The final determination of plant survival will not be made until late September 2012. Fewer than 25 of 4,992 plants on the repository and 5 of the 443 plants on the Repository Stockpile Area have died. Water has accumulated under the bark mulch areas on the repository and saturated the upper soil layer, which may hinder the survival of reclamation plantings. A site meeting to review the repository conditions will be conducted in July 2012 to develop the strategy for reclamation plantings on the repository.

Approximately 100 plants out of 1,366 plants on the north stockpile have died. It appeared that animals had browsed on many plants throughout the repository and north stockpile. Most trees and shrubs planted under cover trees appeared very healthy. Plants in more exposed areas showed signs of stress, but have not died.

Plants in the South Storage Area appeared to be healthy and growing with no mortality. Many maple trees have started to grow from seeds dropped by neighboring maple trees. An estimated 5 out of the 237 plants on the Rock Stockpile Area have died.

Plants on WRP 1, 2, and 4 are just beginning spring growth, and mortality rates appear to be low in these areas. Plants on WRP 3 have significant plant mortality. Up to 30 percent of the plants (primarily Douglas Fir) have died on WRP 3. It should be noted, however, that 53% more plants than originally specified were planted at WRP 3.

Site access gates and locks are in good condition, and no evidence of unauthorized access was observed during this site inspection. For a full list of elements inspected, please see the attached site inspection checklist (Enclosure 1), and photographic log (Enclosure 3).

ERRG also performed routine maintenance and applied Big Game Repellant throughout the site on May 5, 2012. During the May 2012 maintenance period, the on-site laborer inadvertently pumped water from the repository sump to patent lands at the edge of the repository. As a result, samples were collected of the pumped water to ensure the patent lands had not been impacted by metals at elevated concentrations. Sample results indicated that all metals results, except for cadmium, were less than U.S. Environmental Protection Agency (EPA) maximum contaminant levels (MCLs) for drinking water. Cadmium was detected at a concentration of 42.8 micrograms per liter (µg/L), which exceeded the EPA MCL of 5.0 µg/L. Because most metals results were less than their respective EPA MCLs, it is unlikely that the inadvertent pumping event impacted the patent lands and that further investigation or cleanup is required. To avoid future inadvertent events, a maintenance checklist has been developed to provide additional direction and improved oversight of personnel during maintenance activities. The maintenance checklist is attached in Enclosure 4. Refer to sample BL-RS-0502-2012 in Enclosure 5 for more information. Data from additional analyses of the scheduled stream and drinking water samples will be presented in the Spring 2012 Biannual Report.

[2] ERRG, 2012. Section 6, Removal Action Monitoring Activities, in "Remedial Action Completion Report, Non-Time-Critical Removal Action for Blue Ledge Mine Site, Siskiyou County, California." February.

ERRG

The repository sump water level dropped to 268 inches in June from the May 2012 reading of 267 inches. Pumping of the repository sump had little impact on the over-volume of the leachate in the repository.

Maintenance requiring the use of heavy equipment will be performed in August 2012, in conjunction with removal of sediment from the treatment basins. Repair and maintenance of minor erosion noted above will be performed during subsequent site inspections.

If you have any questions or need additional information, please do not hesitate to contact me at (206) 512-3171 or mike.hudson@errg.com.

Sincerely,

Mike Hudson
Project Manager

MH/kj

Enclosure 1 – June 2012 Blue Ledge Mine Inspection Checklist
Enclosure 2 – Site Map
Enclosure 3 – June 2012 Inspection Photographic Log
Enclosure 4 – Maintenance Task List
Enclosure 5 – Laboratory Analysis

cc: ERRG Project File

Enclosure 1. June 2012 Blue Ledge Mine Inspection Checklist

BLUE LEDGE MINE
INSPECTION CHECKLIST

MONTHLY INSPECTION
Month: June**, Year:** 2012

BLUE LEDGE MINE MONTHLY INSPECTION CHECKLIST
Month: June **Year:** 2012

Blue Ledge Mine Removal Project
Siskiyou County, California
Operation, Maintenance, and Monitoring Period

NOTE: All photographs associated with this checklist were taken on June 1, 2012; Refer to Enclosures 2, 3, and 4 in the inspection letter.

Repository

1. Inspect the silt fence, wattles, and other BMPs at the Repository and Repository Stockpile Area (see Figure P-2). Do BMPs require repair or replacement? ☐ Yes* ☒ No

**If yes, repair or replace damaged components and make recommendations to reduce future damage. A listing of approved BMPs for implementation is shown in Appendix G of the SWPPP.*

Comments: _____

2. Inspect repository cover soil. Is there evidence of excessive or preferential erosion (see Figure P-2)? ☐ Yes* ☒ No

**If yes, notify project manager and place temporary BMPs to minimize further erosion until a solution can be found. A listing of approved BMPs for implementation is shown in Appendix G of the SWPPP.*

Comments: No new erosion or any excessive erosion has occurred since the last inspection.

3. Inspect the repository access road (see Figure P-2). Are there any areas of excessive erosion or other areas where the road requires repair? ☒ Yes* ☐ No

**If yes, notify project manager of potential need for repair.*

Comments: Excessive erosion has not occurred. Rills have developed on the road by the rock stockpile that will require maintenance as reported in previous inspections.

4. Inspect repository leachate sump tank and cap (see Figure P-2). Is the sump and cap in good condition and locked? Is liquid present in the sump? ☒ Yes ☐ No*

**If no, take several pictures of damage and make repairs to fix or secure prior to leaving site (if possible). If liquid is in the sump, measure the depth (requires a minimum 25-foot tape measure). Collection of a liquid sample may be required for profiling and disposal.*

Comments: Water depth was 57 inches, with top level of liquid at 268 inches from lip.

5. Inspect anchor trench drainage pipes and the repository underdrain where they daylight (see Figure P-2). Is the screening damaged or is there evidence of the pipes being blocked? ☐Yes* ☒No

**If yes, unblock pipe and/or repair screen.*

Comments: All drains were clear, no damage occurred to any screen, and no blockage of any drains.

6. Inspect the repository stormwater drain ditch (see Figure P-2). Is the stormwater drain ditch damaged or is there evidence of any portion of the stormwater drain ditch being blocked? ☐Yes* ☒No

**If yes, unblock ditch.*

Comments: _____

7. Inspect plants in the repository and repository stockpile area (see Figure P-3). Is there evidence that animals have browsed on the plants? ☐Yes* ☒No

**If yes, reapply Big Game Repellant to prevent further browsing. A listing of grass seeds, fertilizers, animal repellants, and other reclamation products is shown in Appendix G of the SWPPP.*

Comments: No new evidence of browsing after application of Big Game Repellant on May 5, 2012.

8. Have plants died in the Repository and Repository Stockpile Areas (see Figure P-3)? ☒Yes* ☐No

**If yes, estimate number of plants and record it in the comments. The total number of plants installed at the repository and repository stockpile areas are shown in enclosure : Site Map.*

Comments: Approximately 25 plants of 4992 have died.

9. Inspect Flexterra and grass seeded areas on the repository (see Figure P-3). Are any repairs needed or invasive species present? ☐Yes* ☒No

**If yes, identify areas for repair or pull weeds and dispose of properly.*

Comments: No invasive species were present. Seed and fertilizer were hand applied to thin areas on the repository face.

North Storage Area

1. Inspect road leading to the Repository and North Storage Area (see Figure P-2). Is there evidence of excessive erosion? Are the water bars damaged? ☒Yes* ☐No

**If yes, apply temporary BMPs and make recommendations for repair. A listing of approved BMPs for implementation is shown in Appendix G of the SWPPP.*

Comments: No excessive or additional erosion has occurred in the North Storage Area. Some rills in the access road will be repaired during the summer maintenance activities. The water bars are not damaged.

2. Inspect the silt fence, wattles, and other BMPs at the North Storage Area (see Figure P-4). Do BMPs require repair or replacement? ☐Yes* ☒No

**If yes, repair or replace damaged components and make recommendations to reduce future damage. A listing of approved BMPs for implementation is shown in Appendix G of the SWPPP.*

Comments: _____

3. Inspect Flexterra and grass seeded areas on the North Storage Area (see Figure P-4). Are any repairs needed or any invasive species present? ☐Yes* ☒No

**If yes, identify areas for repair or pull weeds and dispose of properly.*

Comments: _____

4. Inspect plants in the North Storage Area (see Figure P-4). Have animals browsed on the plants? ☒Yes* ☐No

**If yes, reapply Big Game Repellant to prevent further browsing. A listing of grass seeds, fertilizers, animal repellents, and other reclamation products is shown in Appendix G of the SWPPP.*

Comments: Appllied Big Game Repellent to reduce further browsing.

5. Have any plants died in the North Storage Area (see Figure P-4)? ☒Yes* ☐No

**If yes, estimate number of plants and record it in the comments. The total number of plants installed at the North Storage Area is shown on Figure P-4.*

Comments: Approximately 100 of 1,366.

South Storage Area

1. Inspect the silt fence, wattles, and other BMPs at the South Storage Area (see Enclosure 2). Do BMPs require repair or replacement? ☐Yes* ☒No

**If yes, repair or replace damaged components and make recommendations to reduce future damage. A listing of approved BMPs for implementation is shown in Appendix G of the SWPPP.*

Comments: No repairs required.

2. Inspect plants in the South Storage Area. Have animals browsed on plants? ☐Yes* ☒No

**If yes, reapply Big Game Repellent to prevent further browsing. A listing of grass seeds, fertilizers, animal repellents, and other reclamation products is shown in Appendix G of the SWPPP.*

Comments: _____

3. Have any plants died in the South Storage Area (see Figure P-5)? ☐Yes* ☒No

**If yes, estimate number of plants and record it in the comments. The total number of plants installed at the South Storage Area is shown on Figure P-5.*

Comments: _____

4. Inspect Flexterra and grass seeded areas along Joe Creek (see Figure P-5). Are any repairs needed or any invasive species present? ☐Yes* ☒No

**If yes, identify areas for repair or pull weeds and dispose of properly.*

Comments: _____

Rock Stockpile Area

1. Inspect the silt fence, wattles, and other BMPs at the Rock Stockpile Area (see Figure P-6). Do BMPs require repair or replacement? ☐Yes* ☒No

**If yes, repair or replace damaged components and make recommendations to reduce future damage. A listing of approved BMPs for implementation is shown in Appendix H of the SWPPP.*

Comments: No BMP maintenance required after adding slash to slope.

2. Inspect plants in the Rock Stockpile Area (see Figure P-6). Have animals browsed on the plants? ☐Yes* ☒No

**If yes, reapply Big Game Repellent to prevent further browsing. A listing of grass seeds, fertilizers, animal repellents, and other reclamation products is shown in Appendix G of the SWPPP.*

Comments: No browsing evident after application of Big Game Repellant in May 2012.

3. Have any plants died in the Rock Stockpile Area (see Figure P-6)? ☒Yes* ☐No

**If yes, estimate number of plants and record it in the comments. The total number of plants installed at the south storage area is shown on Figure P-6.*

Comments: An estimated 5 out of 237 plants have died.

4. Inspect Flexterra and grass seeded areas (see Figure P-6). Are any repairs needed or any invasive species present? ☐Yes* ☒No

**If yes, identify areas for repair or pull weeds and dispose of properly.*

Comments: _____

Forest Service Roads and Haul Roads

1. Are there areas of Forest Service Road 1060 that have experienced excessive erosion? ☒Yes* ☐ No

**If yes, document road condition with photographs and install temporary BMPs to help minimize further erosion. A listing of approved BMPs for implementation is shown in Appendix G of the SWPPP.*

Comments: Excessive erosion has not occurred. Several rills have developed over the winter that will require repair during the summer maintenance period. The rill by the large water bar is the largest rill.

2. Are culverts along Forest Service Road 1060 marked and draining properly? ☒Yes ☐No*

**If no, perform necessary maintenance or repair to culvert to return to good working condition.*

Comments: The culverts have been cleared adequately for drainage.

3. Inspect haul roads 1, 2, 3, and 4; the miner's trail parking area; and the decommissioned haul roads 2 and 4 (see Figure P-2). Are there areas of excessive erosion? Are water bars damaged? ☒Yes* ☐No

**If yes, place temporary BMPs and repair damaged water bars. A listing of approved BMPs for implementation is shown in Appendix G of the SWPPP.*

Comments: Several areas of erosion on the side bank of Haul Road 4 (see photographic log). These areas will require additional berms, water bars, and maintenance on the side bank to reduce further erosion.

4. Inspect BMPs along Haul Roads 1, 2, 3, and 4; the miner's trail parking area; and the decommissioned Haul Roads 2 and 4 (see Figure P-2). Are BMPs in good condition? ☒Yes ☐No*

**If no, repair and/or replace BMPs as necessary. A listing of approved BMPs for implementation is shown in Appendix G of the SWPPP.*

Comments: Repairs were made to silt fences. No additional repairs are required.

5. Inspect areas of Haul Roads 1, 2, 3, and 4; the miner's trail parking area; and the decommissioned Haul Roads 2 and 4 (see Figure P-2). Record grass growth progress. Are there bare areas that require reseeding? ☐Yes* ☒No

**If yes, reseed bare areas. A listing of grass seeds, fertilizers, animal repellents, and other reclamation products is shown in Appendix G of the SWPPP.*

Comments: _____

Waste Rock Pile 1

1. Inspect log wattles, straw wattles, and other BMPs at the reclamation areas on WRP 1 (See Enclosure 2). Are all BMPs in good condition? ☒Yes ☐No*

**If no, repair and/or replace BMPs as necessary. A listing of approved BMPs for implementation is shown in Appendix G of the SWPPP.*

Comments: No repairs are needed.

2. Inspect Flexterra and grass seeded areas at the reclamation areas on WRP 1 (see Enclosure 2). Are any repairs needed or any invasive species present? ☐Yes* ☒No

**If yes, identify areas for repair or pull weeds and dispose of properly.*

Comments: _____

3. Inspect plants at the reclamation areas on WRP 1 (see Enclosure 2). Have animals browsed on the plants? ☐Yes* ☒No

**If yes, reapply Big Game Repellent to prevent further browsing. A listing of grass seeds, fertilizers, animal repellents, and other reclamation products is shown in Appendix G of the SWPPP.*

Comments: _____

4. Have any plants at the reclamation areas died on WRP 1 (see Enclosure 2)? Have animals browsed on the plants? ☒Yes* ☐No

**If yes, estimate number of plants and record it in the comments. The total number of plants installed at WRP 1 is shown on Enclosure 2.*

Comments: Apply Big Game Repellant to discourage more browsing. An approximate 4 out of 241 plants have died.

5. Are there areas of excessive erosion on WRP 1 (see Enclosure 2)? ☒Yes* ☐No

**If yes, apply temporary BMPs. A listing of grass seeds, fertilizers, animal repellents, and other reclamation products is shown in Appendix G of the SWPPP.*

Comments: A small landslide has deposited sediment into sediment treatment basin 1F. No excessive erosion requiring additional BMPs has occurred on WRP 1.

6. Inspect each sediment treatment basin at WRP 1 (see Enclosure 2). For each basin, record the volume of sediment accumulated (as a percentage of capacity), the amount of fouled limestone (in inches), and the pH of water as listed below (if any). Record and photograph any excessive erosion in or around the sediment basin.

   Sediment Treatment Basin 1A (closest to the Joe Creek):

   Accumulated sediment: 30%

   Fouled limestone: N/A

   pH below basin 1A: 5.0

   Water depth: 12 inches deep

   Excessive erosion around the basin? ☐Yes* ☒No

   Sediment Treatment Basin 1B:

   Accumulated sediment: 15%

   Fouled limestone: N/A

   pH below basin 1B: 5.0

   Water depth: 6 inches deep; flow is no longer running around the liner

   Excessive erosion around the basin? ☐Yes* ☒No

Sediment Treatment Basin 1C:

Accumulated sediment: 50%

Fouled limestone: N/A

pH below basin 1C: 5.0

Water depth: 10 inches deep

Excessive erosion around the basin? ☐Yes* ☒No

Sediment Treatment Basin 1D:

Accumulated sediment: 35%

Fouled limestone: N/A

pH below basin 1D: 5.0

Water depth: 10 inches deep

Excessive erosion around the basin? ☐Yes* ☒No

Sediment Treatment Basin 1E:

Accumulated sediment: 90%

Fouled limestone: N/A

pH below basin 1E: 5.0

Water depth: 4 inches deep

Excessive erosion around the basin? ☐Yes* ☒No

Sediment Treatment Basin 1F:

Accumulated sediment: 100% due to landslide and sediment

Fouled limestone: N/A

pH below basin 1F: 5.0

pH above basin 1F: 5.0

Water depth: 2 inches deep.

Excessive erosion around the basin? ☒Yes* ☐No

Waste Rock Pile 2

1. Inspect wattles, silt fence, and other BMPs at the reclamation areas on WRP 2 (see Figure P-8). Are all BMPs in good condition? ☒Yes ☐No*

**If no, repair and/or replace BMPs as necessary. A listing of approved BMPs for implementation is shown in Appendix G of the SWPPP.*

Comments: _____

2. Inspect plants at the reclamation areas on WRP 2 (see Figure P-8). Have animals browsed on the plants? ☐Yes* ☒No

**If yes, reapply Big Game Repellent to prevent further browsing. A listing of grass seeds, fertilizers, animal repellents, and other reclamation products is shown in Appendix G of the SWPPP.*

Comments: _____

3. Have any plants at the reclamation areas died on WRP 2 (see Figure P-8)? ☐Yes* ☒No

**If yes, estimate number of plants and record it in the comments. The total number of plants installed at WRP 2 is shown on Figure P-8.*

Comments: No plants noted dead

4. Are there areas of excessive erosion on WRP 2? ☐Yes* ☒No

**If yes, apply temporary BMPs. A listing of grass seeds, fertilizers, animal repellants, and other reclamation products is shown in Appendix G of the SWPPP.*

Comments: No areas have excessive erosion, but the sediment basins have accumulated significant sediment.

5. Inspect each sediment treatment basin at WRP 2 (see Figure P-8). For each basin, record the volume of sediment accumulated (as a percentage of capacity), the amount of fouled limestone (in inches), and the pH of the water as listed below (if any). Record and photograph any excessive erosion in or around the sediment basin.

   Sediment Treatment Basin 2A:

   Accumulated sediment: 50% – half full of slide debris

   Fouled limestone: N/A

   pH below basin 2A: Not sampled

   pH above basin 2A: Not sampled

   Water depth: No water in basin to sample

   Excessive erosion around the basin? ☐Yes* ☒No

   Sediment Treatment Basin 2B:

   Accumulated sediment: 50% – half full of slide debris

   Fouled limestone: N/A

   pH below basin 2B: Not sampled

   pH above basin 2B: Not sampled

   Water depth: No water in basin to sample

   Excessive erosion around the basin? ☐Yes* ☒No

Waste Rock Pile 3

1. Inspect log wattles, straw wattles, and other BMPs at the reclamation areas on WRP 3 (see Figure P-8). Are all BMPs in good condition? ☐Yes ☒No*

**If no, repair and/or replace BMPs as necessary. A listing of approved BMPs for implementation is shown in Appendix G of the SWPPP.*

Comments: Some wattles require repair and some areas under the log wattles that need to filled in.

2. Inspect plants at the reclamation areas on WRP 3 (see Figure P-8). Have animals browsed on the plants? ☐Yes* ☒No

**If yes, reapply Big Game Repellent to prevent further browsing. A listing of grass seeds, fertilizers, animal repellents, and other reclamation products is shown in Appendix G of the SWPPP.*

Comments: No browsing has occurred on plants.

3. Have any plants at the reclamation areas died on WRP 3 (see Figure P-8)? ☐Yes* ☐No

**If yes, estimate number of plants and record it in the comments. The total number of plants installed at WRP 3 is shown on Figure P-8.*

Comments: An estimated 300 plants out of 1,067 plants have died.

4. Are there areas of excessive erosion on WRP 3? ☐Yes* ☒No

**If yes, apply temporary BMPs. A listing of grass seeds, fertilizers, animal repellants, and other reclamation products is shown in Appendix G of the SWPPP.*

Comments: No areas of excessive erosion were observed.

5. Inspect each sediment treatment basin at WRP 3 (see Figure P-8). For each basin, record the volume of sediment accumulated (as a percentage of capacity), the amount of fouled limestone (in inches), and the pH of the water as listed below (if any). Record and photograph any excessive erosion in or around the sediment basin.

   Sediment Treatment Basin 3:

   Accumulated sediment: <25%

   Fouled limestone: N/A

   pH below basin 3: 5.3

   pH above basin 3: 6.5

   Water depth: 1 inch deep

   Excessive erosion around the basin? ☐Yes* ☒No

Waste Rock Pile 4

1. Inspect log wattles, straw wattles, and other BMPs at the reclamation areas on WRP 4 (see Enclosure 2). Are all BMPs in good condition? ☐Yes ☒No*

**If no, repair and/or replace BMPs as necessary. A listing of approved BMPs for implementation is shown in Appendix G of the SWPPP.*

Comments: Two wattles need to be restaked.

2. Inspect plants at the reclamation areas on WRP 4 (see Enclosure 2). Have animals browsed on the plants? ☐Yes* ☒No

**If yes, reapply Big Game Repellent to prevent further browsing. A listing of grass seeds, fertilizers, animal repellents, and other reclamation products is shown in Appendix G of the SWPPP.*

Comments: No browsing has occurred since application of Big Game Repellant on May 5, 2012.

3. Have any plants at the reclamation areas died on WRP 4 (see Enclosure 2)? ☐Yes* ☐No

**If yes, estimate number of plants and record it in the comments. The total number of plants installed at WRP 4 is shown on Figure P-8.*

Comments: Approximately 50 out of 768 plants have died.

4. Are there areas of excessive erosion on WRP 4? ☐Yes* ☒No

**If yes, apply temporary BMPs. A listing of grass seeds, fertilizers, animal repellants, and other reclamation products is shown in Appendix G of the SWPPP.*

Comments: _____

5. Inspect the reinforced slope stability fabric area at WRP 4 (see Enclosure 2). Is the fabric in good condition? ☒Yes ☐No*

**If no, perform maintenance or repair.*

Comments: _____

Additional Notes (Time, temperature, wind direction, evidence of unauthorized access, condition of green gate, locks, and other observations)

The weather was sunny. The temperature was approximate 60°F, and the gates were in good condition with no unauthorized access noted.

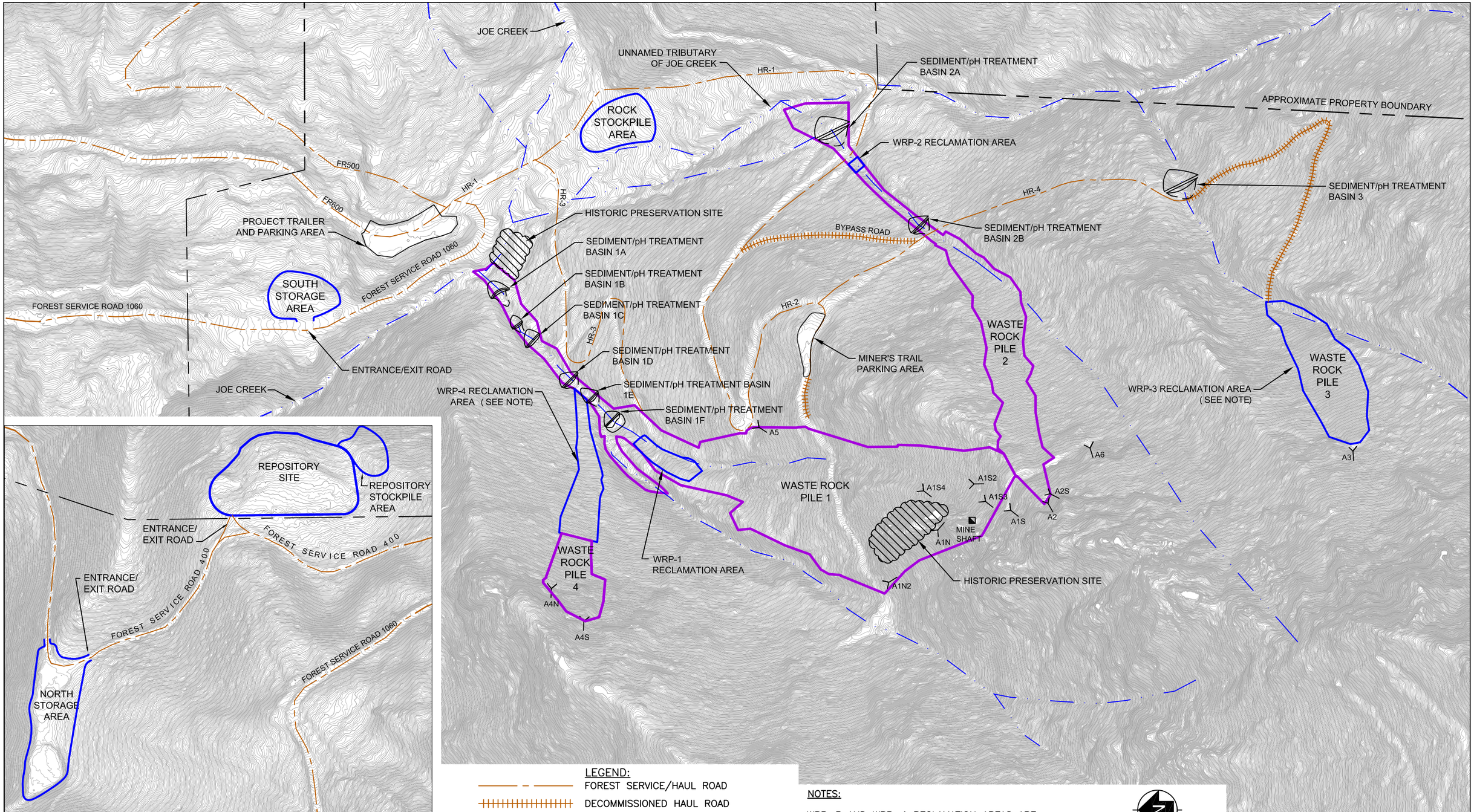
Randy West
Name of Inspector(s)

Engineering/Remediation Resources Group, Inc. (ERRG)
Company

Signature of Inspector

6-1-2012
Date of Inspection

Enclosure 2. Overall Site Plan



SOURCE: URS BLUE LEDGE MINE REMOVAL ACTION, DRAWING NO. 101, SHEET 7 OF 60, CAD FILE NO. 101, DATED: 2/2010.

ERRG Engineering/Remediation Resources Group, Inc.
4585 Pacheco Blvd, Suite 200
Martinez, California 94553
(925) 969-0750

CLIENT: USDA FOREST SERVICE	OVERALL SITE PLAN			
LOCATION: BLUE LEDGE MINE REMOVAL ACTION	DRAWN BY: RDB 11/18/11	CHECKED BY: JGS 11/21/11	PROJECT NO. 2010-084	ENCLOSURE 2

FILE NAME: N:\Graphics\2010\2010-084 USFS Blueledge Mine\N_Maps and Drawings\Final Report\Overall Site Plan 2.dwg LAYOUT NAME: 2 PLOTTED: Tuesday, May 29, 2012 – 11:09am

Enclosure 3. June 2012 Inspection Photographic Log

Photograph 1: Culvert crossing Haul Road 1 after maintenance
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 2: Culvert along FS 1060 road at South Storage Area.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 3: Accumulated sediment and minor bank erosion on haul road 1.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 4: WRP 3.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 5: WRP 3, looking up the slope.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 6: Straw wattle at WRP 3.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 7: Sediment Basin 3
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 8: Sediment Basin 3 erosion controls.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 9: Sediment/Treatment Basin 2B.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 10: Sediment/Treatment Basin 2A.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 11: Channel between sediment basins 2B and 2A.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 12: Rock Stockpile Area.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 13: WRP 4.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 14: WRP 4, with erosion control and reclamation plantings.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 15: WRP 4, looking down to sediment treatment basin 1F.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 16: Sediment basin 1A.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 17: Sediment basin 1B.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 18: Sediment basin 1C.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 19: Sediment basin 1D.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 20: Sediment basin 1E.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 21: Repository slope, looking up from access road.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Photograph 22: Repository Stockpile.
Blue Ledge Mine, Rogue River - Siskiyou National Forest, CA
Photographed by: Randall West (ERRG) Date: June 1, 2012

Enclosure 4. Maintenance Task List

Put grass seed + fertilizer on the bare slopes below the sump.	✓		n	RV
Try putting more grass seed and fertilizer on the thin grass spots to see if that helps. Priority is the slope.				

Maintenance Task List

Task (by area)	*Maintenance Date*	*Notes*	*Picture (y/n)*	*Intials*
Roads				
1060 Road - remove soil and debris from ditch where water crosses road in about 5 places from the green gate to the repository.	✓	there were three places I was able to fix	y	RW
Clean culvert inlet at south stockpile and at HR1 entry near trailer area.	✓		y	RW
Move rocks to allow ponded water at HR1 entry to run into culvert inlet.	✓		y	RW
Fill in rill at big rolling water bar.				
Clean culvert inlet at south stockpile and at HR1 entry near trailer area.	✓		y	RW
Move rocks to allow ponded water at HR1 entry to run into culvert inlet.	✓		y	RW
Repository				
Expose toe drain outlets. Fix damaged screen.	✓		y	RW
Clean up liner scrap and other geotextile trash.	✓		n	RW
Regrade rills in bark below repository road. Lop branches to lay flat on/in bark.				

North Stockpile				
Put slash on rills in the slope west of the rock stockpile. Use existing slash and cut it to lay flat or embed into dirt.	✓		Y	RW
South Stockpile				
Add more straw, slash, regrade bark to cover rills and iron staining.	✓		Y	RW
Re-direct water into drain pipe to stop rills from growing and heal.	✓			
Cleanout sediment behind log and silt fence at entrance.				
Cleanout culvert inlet and fix sediment wattles.	✓		Y	RW
Trailer area				
Place geoxtextile and rip rap over erosion on bank at haul road entrance.				
Repair silt fence at creek crossings				

Measure logs @ N. Stock pile Mark 12" Diameter by 16 foot long log's with paint and count

Aply B.G.R. to #4 and camp ground

(inlet/outlet) cleanout culvert on HR1 below #2 creek crossing

fepair silt fence at creek crossings

fix water bars + rock outlets cleanout sediment if needed

Slash large fills above sediment basin #2

Measure the span for each bridge crossing

count grass seed

Put Seed + fertilizer on Repository Slope

Enclosure 5. Laboratory Analysis

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Monday, June 11, 2012

Kim Jones
Engineering/Remediation Resource Group, Inc
4585 Pacheco Blvd, Suite 200 (Corporate address)
Martinez, CA 94553

RE: Blue Ledge Mine / 2010-084

Enclosed are the results of analyses for work order A12E063, which was received by the laboratory on 5/3/2012 at 9:06:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Darwin Thomas, Business Development Director

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Apex Labs

12232 S.W. Garden Place
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503-718-0333 Fax

Engineering/Remediation Resource Group, Inc	Project: **Blue Ledge Mine**	
4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BL-CS-JC10-050212	A12E063-01	Soil	05/02/12 07:45	05/03/12 11:12
BL-CS-JC09-050212	A12E063-02	Soil	05/02/12 08:10	05/03/12 11:12
BL-CS-JC09-050212 DUP	A12E063-03	Soil	05/02/12 08:10	05/03/12 11:12
BL-CS-JC08-050212	A12E063-04	Soil	05/02/12 08:40	05/03/12 11:12
BL-CS-EC06-050212	A12E063-05	Soil	05/02/12 08:57	05/03/12 11:12
BL-CS-JC01-050212	A12E063-06	Soil	05/02/12 09:57	05/03/12 11:12
BL-CS-JC01-050212 MSMSD	A12E063-07	Soil	05/02/12 09:57	05/03/12 11:12
BL-CS-EC04-050212	A12E063-08	Soil	05/02/12 11:25	05/03/12 11:12
BL-SW-EC06-050212	A12E063-09	Water	05/02/12 10:11	05/03/12 11:12
BL-SW-JC01-050212	A12E063-10	Water	05/02/12 09:54	05/03/12 11:12
BL-SW-EC04-050212	A12E063-11	Water	05/02/12 11:17	05/03/12 11:12
BL-RS-050212	A12E063-12	Water	05/02/12 09:01	05/03/12 11:12

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Engineering/Remediation Resource Group, Inc	Project: **Blue Ledge Mine**	
4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
BL-SW-EC06-050212 (A12E063-09)			**Matrix: Water**					
Batch: 1205121								
Sulfate	**2.48**	---	1.00	mg/L	1	05/05/12 00:33	300.0/9056A	
BL-SW-JC01-050212 (A12E063-10)			**Matrix: Water**					
Batch: 1205121								
Sulfate	**4.42**	---	1.00	mg/L	1	05/05/12 00:53	300.0/9056A	
BL-SW-EC04-050212 (A12E063-11)			**Matrix: Water**					
Batch: 1205121								
Sulfate	**2.67**	---	1.00	mg/L	1	05/05/12 01:13	300.0/9056A	

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4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

ANALYTICAL SAMPLE RESULTS

Dissolved Hardness (Calculated) by EPA 6020

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
BL-SW-EC06-050212 (A12E063-09)			**Matrix: Water**		**Batch: [CALC]**			
Hardness (Calc by 6020) - Dissolved	**37.0**	---	0.456	mg CaCO3/L	1	05/10/12 15:49	6020 Calc	
BL-SW-JC01-050212 (A12E063-10)			**Matrix: Water**		**Batch: [CALC]**			
Hardness (Calc by 6020) - Dissolved	**36.2**	---	0.456	mg CaCO3/L	1	05/10/12 15:59	6020 Calc	
BL-SW-EC04-050212 (A12E063-11)			**Matrix: Water**		**Batch: [CALC]**			
Hardness (Calc by 6020) - Dissolved	**36.7**	---	0.456	mg CaCO3/L	1	05/10/12 16:02	6020 Calc	

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4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
BL-CS-JC10-050212 (A12E063-01)			**Matrix: Soil**					
Batch: 1205141								
Arsenic	ND	---	2.72	mg/kg dry	10	05/10/12 18:19	EPA 6020	
Cadmium	**0.258**	0.136	0.272	"	"	"	"	
Copper	**36.7**	---	2.72	"	"	"	"	
Iron	**12500**	---	136	"	"	"	"	
Lead	**1.84**	---	1.36	"	"	"	"	
Zinc	**27.4**	---	5.44	"	"	"	"	
BL-CS-JC09-050212 (A12E063-02)			**Matrix: Soil**					
Batch: 1205141								
Arsenic	**5.32**	---	2.61	mg/kg dry	10	05/10/12 18:22	EPA 6020	
Cadmium	**0.496**	0.131	0.261	"	"	"	"	
Copper	**154**	---	2.61	"	"	"	"	
Iron	**16000**	---	131	"	"	"	"	
Lead	**9.64**	---	1.31	"	"	"	"	
Zinc	**84.5**	---	5.23	"	"	"	"	
BL-CS-JC09-050212 DUP (A12E063-03)			**Matrix: Soil**					
Batch: 1205141								
Arsenic	**5.07**	---	2.62	mg/kg dry	10	05/10/12 18:25	EPA 6020	
Cadmium	**0.668**	0.131	0.262	"	"	"	"	
Copper	**174**	---	2.62	"	"	"	"	
Iron	**15200**	---	131	"	"	"	"	
Lead	**12.6**	---	1.31	"	"	"	"	
Zinc	**96.2**	---	5.24	"	"	"	"	
BL-CS-JC08-050212 (A12E063-04)			**Matrix: Soil**					
Batch: 1205141								
Arsenic	**17.6**	---	2.12	mg/kg dry	10	05/10/12 18:28	EPA 6020	
Cadmium	**7.95**	0.106	0.212	"	"	"	"	
Copper	**2250**	---	2.12	"	"	"	"	
Iron	**30900**	---	106	"	"	"	"	
Lead	**45.9**	---	1.06	"	"	"	"	
Zinc	**1210**	---	4.24	"	"	"	"	
BL-CS-EC06-050212 (A12E063-05)			**Matrix: Soil**					
Batch: 1205141								
Arsenic	**4.02**	---	2.68	mg/kg dry	10	05/10/12 18:31	EPA 6020	
Cadmium	**0.174**	0.134	0.268	"	"	"	"	

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4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
BL-CS-EC06-050212 (A12E063-05)			**Matrix: Soil**					
Copper	**30.9**	---	2.68	mg/kg dry	10	"	EPA 6020	
Iron	**15900**	---	134	"	"	"	"	
Lead	**3.58**	---	1.34	"	"	"	"	
Zinc	**39.1**	---	5.36	"	"	"	"	
BL-CS-JC01-050212 (A12E063-06)			**Matrix: Soil**					
Batch: 1205141								
Arsenic	ND	---	2.59	mg/kg dry	10	05/10/12 18:34	EPA 6020	
Cadmium	**1.46**	0.130	0.259	"	"	"	"	
Copper	**423**	---	2.59	"	"	"	"	
Iron	**13500**	---	130	"	"	"	"	
Lead	**6.97**	---	1.30	"	"	"	"	
Zinc	**375**	---	5.18	"	"	"	"	
BL-CS-JC01-050212 MSMSD (A12E063-07)			**Matrix: Soil**					
Batch: 1205141								
Arsenic	**5.93**	---	2.22	mg/kg dry	10	05/10/12 18:42	EPA 6020	
Cadmium	**4.17**	0.111	0.222	"	"	"	"	
Copper	**518**	---	2.22	"	"	"	"	
Iron	**16300**	---	111	"	"	"	"	
Lead	**10.6**	---	1.11	"	"	"	"	
Zinc	**797**	---	4.43	"	"	"	"	
BL-CS-EC04-050212 (A12E063-08)			**Matrix: Soil**					
Batch: 1205141								
Arsenic	**5.97**	---	2.39	mg/kg dry	10	05/10/12 18:45	EPA 6020	
Cadmium	**0.335**	0.119	0.239	"	"	"	"	
Copper	**73.7**	---	2.39	"	"	"	"	
Iron	**23200**	---	119	"	"	"	"	
Lead	**5.80**	---	1.19	"	"	"	"	
Zinc	**72.5**	---	4.78	"	"	"	"	

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4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
BL-SW-EC06-050212 (A12E063-09)			**Matrix: Water**					
Batch: 1205201								
Arsenic	ND	---	2.00	ug/L	1	05/10/12 13:50	EPA 6020 (Diss)	
Calcium	**9180**	---	100	"	"	"	"	
Copper	ND	---	2.00	"	"	"	"	
Iron	ND	---	100	"	"	"	"	
Lead	ND	---	1.00	"	"	"	"	
Magnesium	**3420**	---	50.0	"	"	05/10/12 15:49	"	
Zinc	ND	---	4.00	"	"	05/10/12 13:50	"	
BL-SW-EC06-050212 (A12E063-09RE1)			**Matrix: Water**					
Batch: 1205201								
Cadmium	ND	---	0.200	ug/L	1	05/23/12 10:40	EPA 6020 (Diss)	
BL-SW-JC01-050212 (A12E063-10)			**Matrix: Water**					
Batch: 1205201								
Arsenic	ND	---	2.00	ug/L	1	05/10/12 13:53	EPA 6020 (Diss)	
Cadmium	**1.48**	---	0.200	"	"	"	"	
Calcium	**11300**	---	100	"	"	"	"	
Copper	**16.3**	---	2.00	"	"	"	"	
Iron	ND	---	100	"	"	"	"	
Lead	ND	---	1.00	"	"	"	"	
Magnesium	**1920**	---	50.0	"	"	05/10/12 15:59	"	
Zinc	**36.1**	---	4.00	"	"	05/10/12 13:53	"	
BL-SW-EC04-050212 (A12E063-11)			**Matrix: Water**					
Batch: 1205201								
Arsenic	ND	---	2.00	ug/L	1	05/10/12 13:56	EPA 6020 (Diss)	
Calcium	**9260**	---	100	"	"	"	"	
Copper	**2.17**	---	2.00	"	"	"	"	
Iron	ND	---	100	"	"	"	"	
Lead	ND	---	1.00	"	"	"	"	
Magnesium	**3310**	---	50.0	"	"	05/10/12 16:02	"	
Zinc	ND	---	4.00	"	"	05/10/12 13:56	"	
BL-SW-EC04-050212 (A12E063-11RE1)			**Matrix: Water**					
Batch: 1205201								
Cadmium	ND	---	0.200	ug/L	1	05/23/12 10:43	EPA 6020 (Diss)	
BL-RS-050212 (A12E063-12)			**Matrix: Water**					
Batch: 1205201								

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Engineering/Remediation Resource Group, Inc	Project: **Blue Ledge Mine**	
4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
BL-RS-050212 (A12E063-12)			**Matrix: Water**					
Arsenic	ND	---	2.00	ug/L	1	05/10/12 13:59	EPA 6020 (Diss)	
Barium	**27.6**	---	1.00	"	"	"	"	
Cadmium	**42.8**	---	1.00	"	"	"	"	
Chromium	ND	---	2.00	"	"	"	"	
Lead	ND	---	1.00	"	"	"	"	
Mercury	**0.123**	---	0.0800	"	"	"	"	
Selenium	ND	---	4.00	"	"	"	"	R-01
Silver	ND	---	1.00	"	"	"	"	

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4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
BL-CS-JC10-050212 (A12E063-01)			**Matrix: Soil**					
Batch: 1205143								
Total Solids	**77.7**	---	1.00	% by Weight	1	05/08/12 14:15	SM 2540 G	
BL-CS-JC09-050212 (A12E063-02)			**Matrix: Soil**					
Batch: 1205143								
Total Solids	**74.6**	---	1.00	% by Weight	1	05/08/12 14:15	SM 2540 G	
BL-CS-JC09-050212 DUP (A12E063-03)			**Matrix: Soil**					
Batch: 1205143								
Total Solids	**71.8**	---	1.00	% by Weight	1	05/08/12 14:15	SM 2540 G	
BL-CS-JC08-050212 (A12E063-04)			**Matrix: Soil**					
Batch: 1205143								
Total Solids	**82.0**	---	1.00	% by Weight	1	05/08/12 14:15	SM 2540 G	
BL-CS-EC06-050212 (A12E063-05)			**Matrix: Soil**					
Batch: 1205143								
Total Solids	**73.7**	---	1.00	% by Weight	1	05/08/12 14:15	SM 2540 G	
BL-CS-JC01-050212 (A12E063-06)			**Matrix: Soil**					
Batch: 1205143								
Total Solids	**80.2**	---	1.00	% by Weight	1	05/08/12 14:15	SM 2540 G	
BL-CS-JC01-050212 MSMSD (A12E063-07)			**Matrix: Soil**					
Batch: 1205143								
Total Solids	**81.0**	---	1.00	% by Weight	1	05/08/12 14:15	SM 2540 G	
BL-CS-EC04-050212 (A12E063-08)			**Matrix: Soil**					
Batch: 1205143								
Total Solids	**78.8**	---	1.00	% by Weight	1	05/08/12 14:15	SM 2540 G	
BL-SW-EC06-050212 (A12E063-09)			**Matrix: Water**					
Batch: 1205084								
Total Suspended Solids	**11.0**	---	5.00	mg/L	1	05/04/12 15:00	SM 2540 D	
Batch: 1205085								
Total Dissolved Solids	**21.0**	---	10.0	"	"	05/08/12 12:10	SM 2540 C	
Batch: 1205203								
Total Alkalinity	**32.4**	---	20.0	mg CaCO3/L	"	05/10/12 14:07	SM 2320 B	
Bicarbonate Alkalinity	**32.4**	---	20.0	"	"	"	"	
Carbonate Alkalinity	ND	---	20.0	"	"	"	"	
Hydroxide Alkalinity	ND	---	20.0	"	"	"	"	

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4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
BL-SW-JC01-050212 (A12E063-10)			**Matrix: Water**					
Batch: 1205084								
Total Suspended Solids	ND	---	5.00	mg/L	1	05/04/12 13:45	SM 2540 D	
Batch: 1205085								
Total Dissolved Solids	**52.0**	---	10.0	"	"	05/08/12 12:10	SM 2540 C	
Batch: 1205203								
Total Alkalinity	**31.8**	---	20.0	mg CaCO3/L	"	05/10/12 14:07	SM 2320 B	
Bicarbonate Alkalinity	**31.8**	---	20.0	"	"	"	"	
Carbonate Alkalinity	ND	---	20.0	"	"	"	"	
Hydroxide Alkalinity	ND	---	20.0	"	"	"	"	
BL-SW-EC04-050212 (A12E063-11)			**Matrix: Water**					
Batch: 1205084								
Total Suspended Solids	**15.0**	---	5.00	mg/L	1	05/04/12 15:00	SM 2540 D	
Batch: 1205085								
Total Dissolved Solids	**29.0**	---	10.0	"	"	05/08/12 09:05	SM 2540 C	
Batch: 1205203								
Total Alkalinity	**32.7**	---	20.0	mg CaCO3/L	"	05/10/12 14:07	SM 2320 B	
Bicarbonate Alkalinity	**32.7**	---	20.0	"	"	"	"	
Carbonate Alkalinity	ND	---	20.0	"	"	"	"	
Hydroxide Alkalinity	ND	---	20.0	"	"	"	"	
BL-RS-050212 (A12E063-12)			**Matrix: Water**					
Batch: 1205087								
pH	**5.57**	---		pH Units	1	05/03/12 13:50	EPA 150.1	H-06
pH Temperature (deg C)	**20.7**	---		"	"	"	"	H-06

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Engineering/Remediation Resource Group, Inc	Project: **Blue Ledge Mine**	
4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1205121 - Method Prep: Aq							**Water**					
Blank (1205121-BLK1)					Prepared: 05/04/12 16:44		Analyzed: 05/04/12 19:07					
300.0/9056A												
Sulfate	ND	---	1.00	mg/L	1	---	---	---	---	---	---	
LCS (1205121-BS1)					Prepared: 05/04/12 16:44		Analyzed: 05/04/12 19:27					
300.0/9056A												
Sulfate	3.94	---	1.00	mg/L	1	4.00	---	99	90-110%	---	---	
Duplicate (1205121-DUP1)					Prepared: 05/04/12 16:44		Analyzed: 05/04/12 20:08					
QC Source Sample: Other (A12E062-01)												
300.0/9056A												
Sulfate	**23.7**	---	1.00	mg/L	1	---	23.8	---	---	0.6	15%	
Duplicate (1205121-DUP2)					Prepared: 05/04/12 16:44		Analyzed: 05/05/12 01:34					
QC Source Sample: BL-SW-EC04-050212 (A12E063-11)												
300.0/9056A												
Sulfate	**2.66**	---	1.00	mg/L	1	---	2.67	---	---	0.4	15%	
Matrix Spike (1205121-MS1)					Prepared: 05/04/12 16:44		Analyzed: 05/04/12 20:28					
QC Source Sample: Other (A12E062-01)												
300.0/9056A												
Sulfate	28.4	---	1.11	mg/L	1	4.44	23.8	102	80-120%	---	---	
Matrix Spike (1205121-MS2)					Prepared: 05/04/12 16:44		Analyzed: 05/05/12 01:54					
QC Source Sample: BL-SW-EC04-050212 (A12E063-11)												
300.0/9056A												
Sulfate	7.08	---	1.11	mg/L	1	4.44	2.67	99	80-120%	---	---	

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4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1205141 - EPA 3051A							**Soil**					
Blank (1205141-BLK1)					Prepared: 05/07/12 14:03		Analyzed: 05/10/12 17:24					
EPA 6020												
Arsenic	ND	---	2.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Copper	ND	---	2.00	"	"	---	---	---	---	---	---	
Iron	ND	---	100	"	"	---	---	---	---	---	---	
Lead	ND	---	1.00	"	"	---	---	---	---	---	---	
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	
LCS (1205141-BS1)					Prepared: 05/07/12 14:03		Analyzed: 05/10/12 17:31					
EPA 6020												
Arsenic	52.6	---	2.00	mg/kg wet	10	50.0	---	105	80-120%	---	---	
Cadmium	51.4	0.100	0.200	"	"	"	---	103	"	---	---	
Copper	51.3	---	2.00	"	"	"	---	103	"	---	---	
Iron	4860	---	100	"	"	5000	---	97	"	---	---	
Lead	48.8	---	1.00	"	"	50.0	---	98	"	---	---	
Zinc	52.4	---	4.00	"	"	"	---	105	"	---	---	
Duplicate (1205141-DUP1)					Prepared: 05/07/12 14:03		Analyzed: 05/10/12 17:49					
QC Source Sample: Other (A12E010-04)												
EPA 6020												
Arsenic	**3.69**	---	2.58	mg/kg dry	10	---	3.49	---	---	5	40%	
Cadmium	**0.387**	0.129	0.258	"	"	---	0.388	---	---	0.4	40%	
Copper	**31.9**	---	2.58	"	"	---	29.7	---	---	7	40%	
Iron	**35700**	---	129	"	"	---	33400	---	---	7	40%	
Lead	**15.5**	---	1.29	"	"	---	15.8	---	---	2	40%	
Zinc	**81.2**	---	5.16	"	"	---	77.3	---	---	5	40%	
Matrix Spike (1205141-MS1)					Prepared: 05/07/12 14:03		Analyzed: 05/10/12 17:52					
QC Source Sample: Other (A12E010-04)												
EPA 6020												
Arsenic	75.2	---	2.67	mg/kg dry	10	66.9	3.49	107	75-125%	---	---	
Cadmium	69.3	0.134	0.267	"	"	"	0.388	103	"	---	---	
Copper	103	---	2.67	"	"	"	29.7	110	"	---	---	
Iron	43900	---	134	"	"	6690	33400	157	"	---	---	Q-03
Lead	80.9	---	1.34	"	"	66.9	15.8	97	"	---	---	
Zinc	156	---	5.35	"	"	"	77.3	117	"	---	---	

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Engineering/Remediation Resource Group, Inc	Project: **Blue Ledge Mine**	
4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1205141 - EPA 3051A							**Soil**					
Matrix Spike (1205141-MS2)					Prepared: 05/07/12 14:03		Analyzed: 05/10/12 18:48					
QC Source Sample: BL-CS-EC04-050212 (A12E063-08)												
EPA 6020												
Arsenic	61.8	---	2.21	mg/kg dry	10	55.3	5.97	101	75-125%	---	---	
Cadmium	55.9	0.111	0.221	"	"	"	0.335	100	"	---	---	
Copper	108	---	2.21	"	"	"	73.7	61	"	---	---	Q-01
Iron	23800	---	111	"	"	5530	23200	12	"	---	---	Q-01
Lead	55.2	---	1.11	"	"	55.3	5.80	89	"	---	---	
Zinc	111	---	4.42	"	"	"	72.5	69	"	---	---	Q-01
Post Spike (1205141-PS1)					Prepared: 05/11/12 09:17		Analyzed: 05/11/12 10:33					
QC Source Sample: Post Spike (A12E010-04)												
EPA 6020												
Iron	413000	---		ug/L	50	200000	206000	103	80-120%		---	
Post Spike (1205141-PS2)					Prepared: 05/11/12 09:18		Analyzed: 05/11/12 10:36					
QC Source Sample: BL-CS-EC04-050212 (A12E063-08)												
EPA 6020												
Copper	940	---		ug/L	10	435	536	93	80-120%		---	
Iron	253000	---		"	"	87000	169000	97	"		---	
Zinc	978	---		"	"	435	528	104	"		---	

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Engineering/Remediation Resource Group, Inc	Project: **Blue Ledge Mine**	
4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1205201 - Matrix Matched Direct Inject							**Water**					
Blank (1205201-BLK1)					Prepared: 05/10/12 08:22		Analyzed: 05/10/12 12:35					
EPA 6020 (Diss)												
Arsenic	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Barium	ND	---	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	---	1.00	"	"	---	---	---	---	---	---	
Calcium	ND	---	100	"	"	---	---	---	---	---	---	
Chromium	ND	---	2.00	"	"	---	---	---	---	---	---	
Copper	ND	---	2.00	"	"	---	---	---	---	---	---	
Iron	ND	---	100	"	"	---	---	---	---	---	---	
Lead	ND	---	1.00	"	"	---	---	---	---	---	---	
Magnesium	ND	---	50.0	"	"	---	---	---	---	---	---	
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	
Selenium	ND	---	2.00	"	"	---	---	---	---	---	---	
Silver	ND	---	1.00	"	"	---	---	---	---	---	---	
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	
Blank (1205201-BLK2)					Prepared: 05/10/12 08:22		Analyzed: 05/21/12 16:23					
EPA 6020 (Diss)												
Cadmium	ND	---	0.200	ug/L	1	---	---	---	---	---	---	Q-16
LCS (1205201-BS1)					Prepared: 05/10/12 08:22		Analyzed: 05/10/12 12:38					
EPA 6020 (Diss)												
Arsenic	56.1	---	2.00	ug/L	1	55.6	---	101	80-120%	---	---	
Barium	55.2	---	1.00	"	"	"	---	99	"	---	---	
Cadmium	55.9	---	0.200	"	"	"	---	101	"	---	---	
Cadmium	55.9	---	1.00	"	"	"	---	101	"	---	---	
Calcium	5450	---	100	"	"	5560	---	98	"	---	---	
Chromium	56.1	---	2.00	"	"	55.6	---	101	"	---	---	
Copper	56.8	---	2.00	"	"	"	---	102	"	---	---	
Iron	5360	---	100	"	"	5560	---	97	"	---	---	
Lead	54.6	---	1.00	"	"	55.6	---	98	"	---	---	
Magnesium	5640	---	50.0	"	"	5560	---	102	"	---	---	
Mercury	1.07	---	0.0800	"	"	1.11	---	96	"	---	---	
Selenium	28.5	---	2.00	"	"	27.8	---	103	"	---	---	
Silver	27.5	---	1.00	"	"	"	---	99	"	---	---	
Zinc	56.4	---	4.00	"	"	55.6	---	102	"	---	---	

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Engineering/Remediation Resource Group, Inc	Project: **Blue Ledge Mine**	
4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1205201 - Matrix Matched Direct Inject							**Water**					
Duplicate (1205201-DUP1)					Prepared: 05/10/12 08:22		Analyzed: 05/10/12 12:47					
QC Source Sample: Other (A12E062-01)												
EPA 6020 (Diss)												
Arsenic	**6.41**	---	2.00	ug/L	1	---	6.33	---	---	1	20%	
Barium	**85.6**	---	1.00	"	"	---	86.0	---	---	0.5	20%	
Cadmium	ND	---	0.200	"	"	---	0.167	---	---	***	20%	
Cadmium	ND	---	1.00	"	"	---	ND	---	---	---	20%	
Chromium	ND	---	2.00	"	"	---	0.711	---	---	***	20%	
Copper	**4.02**	---	2.00	"	"	---	4.16	---	---	3	20%	
Iron	**572**	---	100	"	"	---	558	---	---	2	20%	
Lead	ND	---	1.00	"	"	---	0.889	---	---	***	20%	
Magnesium	**14700**	---	50.0	"	"	---	14800	---	---	0.5	20%	
Mercury	ND	---	0.0800	"	"	---	ND	---	---	---	20%	
Selenium	ND	---	2.00	"	"	---	ND	---	---	---	20%	
Silver	ND	---	1.00	"	"	---	ND	---	---	---	20%	
Zinc	**204**	---	4.00	"	"	---	201	---	---	2	20%	
Duplicate (1205201-DUP2)					Prepared: 05/10/12 08:22		Analyzed: 05/10/12 15:30					
QC Source Sample: Other (A12E062-01)												
EPA 6020 (Diss)												
Calcium	**80200**	---	500	ug/L	5	---	89300	---	---	11	20%	Q-16
Matrix Spike (1205201-MS1)					Prepared: 05/10/12 08:22		Analyzed: 05/10/12 13:07					
QC Source Sample: Other (A12E062-03)												
EPA 6020 (Diss)												
Arsenic	57.7	---	2.00	ug/L	1	55.6	ND	104	75-125%	---	---	
Barium	62.8	---	1.00	"	"	"	8.10	98	"	---	---	
Cadmium	58.3	---	0.200	"	"	"	ND	105	"	---	---	
Cadmium	58.3	---	1.00	"	"	"	ND	105	"	---	---	
Chromium	55.9	---	2.00	"	"	"	0.589	100	"	---	---	
Copper	55.9	---	2.00	"	"	"	1.91	97	"	---	---	
Iron	5640	---	100	"	"	5560	399	94	"	---	---	
Lead	53.3	---	1.00	"	"	55.6	ND	96	"	---	---	
Magnesium	25500	---	50.0	"	"	5560	19600	106	"	---	---	
Mercury	1.05	---	0.0800	"	"	1.11	ND	95	"	---	---	
Selenium	29.2	---	2.00	"	"	27.8	ND	105	"	---	---	

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4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1205201 - Matrix Matched Direct Inject							**Water**					
Matrix Spike (1205201-MS1)					Prepared: 05/10/12 08:22		Analyzed: 05/10/12 13:07					
QC Source Sample: Other (A12E062-03)												
Silver	28.0	---	1.00	ug/L	"	"	ND	101	"	---	---	
Zinc	65.8	---	4.00	"	"	55.6	11.0	99	"	---	---	
Matrix Spike (1205201-MS2)					Prepared: 05/10/12 08:22		Analyzed: 05/10/12 14:13					
QC Source Sample: Other (A12E068-04)												
EPA 6020 (Diss)												
Arsenic	57.0	---	2.00	ug/L	1	55.6	ND	103	75-125%	---	---	
Barium	81.6	---	1.00	"	"	"	25.3	101	"	---	---	
Cadmium	56.2	---	0.200	"	"	"	ND	101	"	---	---	
Cadmium	56.2	---	1.00	"	"	"	ND	101	"	---	---	
Calcium	12000	---	100	"	"	5560	5210	122	"	---	---	
Chromium	55.3	---	2.00	"	"	55.6	ND	100	"	---	---	
Copper	57.3	---	2.00	"	"	"	1.71	100	"	---	---	
Iron	5280	---	100	"	"	5560	92.9	93	"	---	---	
Lead	53.2	---	1.00	"	"	55.6	ND	96	"	---	---	
Mercury	1.09	---	0.0800	"	"	1.11	ND	98	"	---	---	
Selenium	26.9	---	2.00	"	"	27.8	ND	97	"	---	---	
Silver	27.4	---	1.00	"	"	"	ND	99	"	---	---	
Zinc	57.6	---	4.00	"	"	55.6	3.31	98	"	---	---	
Matrix Spike (1205201-MS3)					Prepared: 05/10/12 08:22		Analyzed: 05/10/12 15:40					
QC Source Sample: Other (A12E062-03)												
EPA 6020 (Diss)												
Calcium	60500	---	500	ug/L	5	5560	54600	105	75-125%	---	---	Q-16
Matrix Spike (1205201-MS4)					Prepared: 05/10/12 08:22		Analyzed: 05/10/12 16:08					
QC Source Sample: Other (A12E068-04)												
EPA 6020 (Diss)												
Magnesium	7670	---	50.0	ug/L	1	5560	1860	104	75-125%	---	---	Q-16

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Engineering/Remediation Resource Group, Inc	Project: **Blue Ledge Mine**	
4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1205084 - Total Suspended Solids							**Water**					
Blank (1205084-BLK1)					Prepared: 05/04/12 09:55		Analyzed: 05/04/12 13:45					
SM 2540 D												
Total Suspended Solids	ND	---	5.00	mg/L	1	---	---	---	---	---	---	
Duplicate (1205084-DUP1)					Prepared: 05/04/12 09:55		Analyzed: 05/04/12 13:45					
QC Source Sample: Other (A12E062-01)												
SM 2540 D												
Total Suspended Solids	ND	---	5.00	mg/L	1	---	ND	---	---	---	20%	
Duplicate (1205084-DUP2)					Prepared: 05/04/12 09:55		Analyzed: 05/04/12 15:00					
QC Source Sample: BL-SW-EC04-050212 (A12E063-11)												
SM 2540 D												
Total Suspended Solids	**9.00**	---	5.00	mg/L	1	---	15.0	---	---	50	20%	Q-37
Reference (1205084-SRM1)					Prepared: 05/04/12 09:55		Analyzed: 05/04/12 15:00					
SM 2540 D												
Total Suspended Solids	96.0	---		mg/L	1	100		96	90-110%	---	---	

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4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1205085 - Total Dissolved Solids							**Water**					
Blank (1205085-BLK1)					Prepared: 05/04/12 09:40		Analyzed: 05/07/12 11:55					
SM 2540 C												
Total Dissolved Solids	ND	---	10.0	mg/L	1	---	---	---	---	---	---	
Duplicate (1205085-DUP1)					Prepared: 05/04/12 09:40		Analyzed: 05/07/12 09:05					
QC Source Sample: Other (A12E062-01)												
SM 2540 C												
Total Dissolved Solids	**284**	---	10.0	mg/L	1	---	277	---	---	2	20%	
Duplicate (1205085-DUP2)					Prepared: 05/04/12 09:40		Analyzed: 05/08/12 12:10					
QC Source Sample: BL-SW-EC04-050212 (A12E063-11)												
SM 2540 C												
Total Dissolved Solids	**54.0**	---	10.0	mg/L	1	---	29.0	---	---	60	20%	Q-37
Reference (1205085-SRM1)					Prepared: 05/04/12 09:40		Analyzed: 05/08/12 09:05					
SM 2540 C												
Total Dissolved Solids	988	---		mg/L	1	1000		99	90-110%	---	---	

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Engineering/Remediation Resource Group, Inc	Project: **Blue Ledge Mine**	
4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1205087 - Method Prep: Aq							**Water**					
Duplicate (1205087-DUP1)					Prepared: 05/03/12 13:04		Analyzed: 05/03/12 13:51					
QC Source Sample: BL-RS-050212 (A12E063-12)												
EPA 150.1												
pH	**5.54**	---		pH Units	1	---	5.57	---	---	0.5	10%	
pH Temperature (deg C)	**20.3**	---		"	"	---	20.7	---	---	2	30%	
Duplicate (1205087-DUP2)					Prepared: 05/03/12 16:40		Analyzed: 05/03/12 17:52					
QC Source Sample: Other (A12E078-09)												
EPA 150.1												
pH	**6.96**	---		pH Units	1	---	6.92	---	---	0.6	10%	
pH Temperature (deg C)	**22.2**	---		"	"	---	22.3	---	---	0.4	30%	
Reference (1205087-SRM1)					Prepared: 05/03/12 13:04		Analyzed: 05/03/12 13:48					
EPA 150.1												
pH	6.00	---		pH Units	1	6.00		100	98.4-101.7%	---	---	
Reference (1205087-SRM2)					Prepared: 05/03/12 13:04		Analyzed: 05/03/12 13:55					
EPA 150.1												
pH	7.96	---		pH Units	1	8.00		100	98.74-101.26%	---	---	
Reference (1205087-SRM3)					Prepared: 05/03/12 16:40		Analyzed: 05/03/12 17:34					
EPA 150.1												
pH	5.98	---		pH Units	1	6.00		100	98.4-101.7%	---	---	
Reference (1205087-SRM4)					Prepared: 05/03/12 16:40		Analyzed: 05/03/12 17:47					
EPA 150.1												
pH	8.05	---		pH Units	1	8.00		101	98.74-101.26%	---	---	
Reference (1205087-SRM5)					Prepared: 05/03/12 16:40		Analyzed: 05/03/12 17:59					
EPA 150.1												
pH	5.96	---		pH Units	1	6.00		99	98.4-101.7%	---	---	

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Engineering/Remediation Resource Group, Inc	Project: **Blue Ledge Mine**	
4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1205183 - Total Solids (Dry Weight)							**Soil**					
Duplicate (1205183-DUP1)					Prepared: 05/09/12 10:52		Analyzed: 05/10/12 15:30					
QC Source Sample: Other (A12E145-01)												
SM 2540 G												
Total Solids	**63.5**	---	1.00	% by Weight	1	---	64.8	---	---	2	20%	
Duplicate (1205183-DUP2)					Prepared: 05/09/12 10:52		Analyzed: 05/10/12 15:30					
QC Source Sample: Other (A12E145-11)												
SM 2540 G												
Total Solids	**88.6**	---	1.00	% by Weight	1	---	90.0	---	---	2	20%	

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Engineering/Remediation Resource Group, Inc	Project: **Blue Ledge Mine**	
4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1205203 - Method Prep: Aq							**Water**					
Blank (1205203-BLK1)					Prepared: 05/10/12 09:22		Analyzed: 05/10/12 14:07					
SM 2320 B												
Total Alkalinity	ND	---	20.0	mg CaCO3/L	1	---	---	---	---	---	---	
Bicarbonate Alkalinity	ND	---	20.0	"	"	---	---	---	---	---	---	
Carbonate Alkalinity	ND	---	20.0	"	"	---	---	---	---	---	---	
Hydroxide Alkalinity	ND	---	20.0	"	"	---	---	---	---	---	---	
LCS (1205203-BS1)					Prepared: 05/10/12 09:22		Analyzed: 05/10/12 14:07					
SM 2320 B												
Total Alkalinity	183	---	20.0	mg CaCO3/L	1	191	---	96	85-115%	---	---	
Bicarbonate Alkalinity	ND	---	20.0	"	"	0.000100	---		0-200%	---	---	
Carbonate Alkalinity	169	---	20.0	"	"	191	---	88	"	---	---	
Hydroxide Alkalinity	ND	---	20.0	"	"	0.000100	---		"	---	---	
Duplicate (1205203-DUP1)					Prepared: 05/10/12 09:22		Analyzed: 05/10/12 14:07					
QC Source Sample: Other (A12E062-10)												
SM 2320 B												
Total Alkalinity	ND	---	20.0	mg CaCO3/L	1	---	ND	---	---	---	20%	
Bicarbonate Alkalinity	ND	---	20.0	"	"	---	ND	---	---	---	20%	
Carbonate Alkalinity	ND	---	20.0	"	"	---	ND	---	---	---	20%	
Hydroxide Alkalinity	ND	---	20.0	"	"	---	ND	---	---	---	20%	

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4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1205108 - Total Solids (Dry Weight)							**Soil**					
Duplicate (1205108-DUP1)					Prepared: 05/04/12 11:14		Analyzed: 05/07/12 10:27					
QC Source Sample: Other (A12E061-05)												
Apex SOP												
% Solids	**94.0**	---	1.00	% by Weight	1	---	93.1	---	---	1	20%	
Duplicate (1205108-DUP2)					Prepared: 05/04/12 11:14		Analyzed: 05/07/12 10:27					
QC Source Sample: BL-CS-EC04-050212 (A12E063-08)												
Apex SOP												
% Solids	**71.8**	---	1.00	% by Weight	1	---	78.8	---	---	9	20%	
Duplicate (1205108-DUP3)					Prepared: 05/04/12 11:14		Analyzed: 05/07/12 10:27					
QC Source Sample: Other (A12E075-10)												
Apex SOP												
% Solids	**94.1**	---	1.00	% by Weight	1	---	94.0	---	---	0.1	20%	
Duplicate (1205108-DUP4)					Prepared: 05/04/12 11:14		Analyzed: 05/07/12 10:27					
QC Source Sample: Other (A12E096-07)												
Apex SOP												
% Solids	**86.5**	---	1.00	% by Weight	1	---	84.2	---	---	3	20%	

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4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

SAMPLE PREPARATION INFORMATION

Anions by EPA 300.0/9056A (Ion Chromatography)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1205121							
A12E063-09	Water	300.0/9056A	05/02/12 10:11	05/04/12 16:44	10mL/10mL	10mL/10mL	1.00
A12E063-10	Water	300.0/9056A	05/02/12 09:54	05/04/12 16:44	10mL/10mL	10mL/10mL	1.00
A12E063-11	Water	300.0/9056A	05/02/12 11:17	05/04/12 16:44	10mL/10mL	10mL/10mL	1.00

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1205141							
A12E063-01	Soil	EPA 6020	05/02/12 07:45	05/07/12 14:03	0.473g/50mL	0.5g/50mL	1.06
A12E063-02	Soil	EPA 6020	05/02/12 08:10	05/07/12 14:03	0.513g/50mL	0.5g/50mL	0.98
A12E063-03	Soil	EPA 6020	05/02/12 08:10	05/07/12 14:03	0.532g/50mL	0.5g/50mL	0.94
A12E063-04	Soil	EPA 6020	05/02/12 08:40	05/07/12 14:03	0.575g/50mL	0.5g/50mL	0.87
A12E063-05	Soil	EPA 6020	05/02/12 08:57	05/07/12 14:03	0.506g/50mL	0.5g/50mL	0.99
A12E063-06	Soil	EPA 6020	05/02/12 09:57	05/07/12 14:03	0.481g/50mL	0.5g/50mL	1.04
A12E063-07	Soil	EPA 6020	05/02/12 09:57	05/07/12 14:03	0.557g/50mL	0.5g/50mL	0.90
A12E063-08	Soil	EPA 6020	05/02/12 11:25	05/07/12 14:03	0.531g/50mL	0.5g/50mL	0.94

Dissolved Metals by EPA 6020 (ICPMS)

Prep: Matrix Matched Direct Inject

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1205201							
A12E063-09	Water	EPA 6020 (Diss)	05/02/12 10:11	05/10/12 08:22	45mL/50mL	45mL/50mL	1.00
A12E063-09RE1	Water	EPA 6020 (Diss)	05/02/12 10:11	05/10/12 08:22	45mL/50mL	45mL/50mL	1.00
A12E063-10	Water	EPA 6020 (Diss)	05/02/12 09:54	05/10/12 08:22	45mL/50mL	45mL/50mL	1.00
A12E063-11	Water	EPA 6020 (Diss)	05/02/12 11:17	05/10/12 08:22	45mL/50mL	45mL/50mL	1.00
A12E063-11RE1	Water	EPA 6020 (Diss)	05/02/12 11:17	05/10/12 08:22	45mL/50mL	45mL/50mL	1.00
A12E063-12	Water	EPA 6020 (Diss)	05/02/12 09:01	05/10/12 08:22	45mL/50mL	45mL/50mL	1.00

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1205087							
A12E063-12	Water	EPA 150.1	05/02/12 09:01	05/03/12 13:04	20mL/20mL	20mL/20mL	NA
Batch: 1205203							

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4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

SAMPLE PREPARATION INFORMATION

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A12E063-09	Water	SM 2320 B	05/02/12 10:11	05/10/12 09:22	50mL/50mL	50mL/50mL	NA
A12E063-10	Water	SM 2320 B	05/02/12 09:54	05/10/12 09:22	50mL/50mL	50mL/50mL	NA
A12E063-11	Water	SM 2320 B	05/02/12 11:17	05/10/12 09:22	50mL/50mL	50mL/50mL	NA

Prep: Total Dissolved Solids

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1205085							
A12E063-09	Water	SM 2540 C	05/02/12 10:11	05/04/12 09:40	1N/A/1N/A	1N/A/1N/A	NA
A12E063-10	Water	SM 2540 C	05/02/12 09:54	05/04/12 09:40	1N/A/1N/A	1N/A/1N/A	NA
A12E063-11	Water	SM 2540 C	05/02/12 11:17	05/04/12 09:40	1N/A/1N/A	1N/A/1N/A	NA

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1205143							
A12E063-01	Soil	SM 2540 G	05/02/12 07:45	05/07/12 17:50	1N/A/1N/A	1N/A/1N/A	NA
A12E063-02	Soil	SM 2540 G	05/02/12 08:10	05/07/12 17:50	1N/A/1N/A	1N/A/1N/A	NA
A12E063-03	Soil	SM 2540 G	05/02/12 08:10	05/07/12 17:50	1N/A/1N/A	1N/A/1N/A	NA
A12E063-04	Soil	SM 2540 G	05/02/12 08:40	05/07/12 17:50	1N/A/1N/A	1N/A/1N/A	NA
A12E063-05	Soil	SM 2540 G	05/02/12 08:57	05/07/12 17:50	1N/A/1N/A	1N/A/1N/A	NA
A12E063-06	Soil	SM 2540 G	05/02/12 09:57	05/07/12 17:50	1N/A/1N/A	1N/A/1N/A	NA
A12E063-07	Soil	SM 2540 G	05/02/12 09:57	05/07/12 17:50	1N/A/1N/A	1N/A/1N/A	NA
A12E063-08	Soil	SM 2540 G	05/02/12 11:25	05/07/12 17:50	1N/A/1N/A	1N/A/1N/A	NA

Prep: Total Suspended Solids

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1205084							
A12E063-09	Water	SM 2540 D	05/02/12 10:11	05/04/12 09:55	1N/A/1N/A	1N/A/1N/A	NA
A12E063-10	Water	SM 2540 D	05/02/12 09:54	05/04/12 09:55	1N/A/1N/A	1N/A/1N/A	NA
A12E063-11	Water	SM 2540 D	05/02/12 11:17	05/04/12 09:55	1N/A/1N/A	1N/A/1N/A	NA

Lab Filtration

Prep: Lab Filtration

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1205070							
A12E063-09	Water	NA	05/02/12 10:11	05/03/12 14:30	150mL/150mL		NA
A12E063-10	Water	NA	05/02/12 09:54	05/03/12 14:31	150mL/150mL		NA
A12E063-11	Water	NA	05/02/12 11:17	05/03/12 14:33	150mL/150mL		NA
A12E063-12	Water	NA	05/02/12 09:01	05/03/12 14:35	150mL/150mL		NA

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Engineering/Remediation Resource Group, Inc	Project: **Blue Ledge Mine**	
4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

SAMPLE PREPARATION INFORMATION

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Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

Notes and Definitions

Qualifiers:

H-06	This sample was received, or the analysis requested, outside the EPA recommended holding time.
Q-01	Percent recovery and/or RPD is outside acceptance limits.
Q-03	Percent recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-16	Reanalysis of an original Batch QC sample.
Q-37	Sample is non-homogenous. Sample results are Non-Detect and duplicate results have hits greater than the MRL. See Duplicate results.
R-01	The Reporting Limit for this analyte has been raised to account for matrix interference.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepency with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

APEX LABS — **CHAIN OF CUSTODY**

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Lab # A12E063 COC 1 of 2

Company: ERRG | Project Mgr.: Mike Hudson | Project Name: Blue Ledge Mine | Project # 2010-084

Address: 4585 Pacheco Blvd # 200 | Phone: (925) 969-0750 | Fax: (925) 969-0751 | Email: kim.jones@errg.com

Sampled by: Kim Jones

Site Location: OR WA Other: CA

ANALYSIS REQUEST

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs	8270 SIM PAHs	8082 PCBs	8081 Chlor. Pest	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Ag, Na, Tl, V, Zn	TCLP Metals (8)	1200-COLS	1200-Z	% Moisture	Particle Size ASTM D422M
1	BL-CS-TC10-050212	1	5/2/12	7:45	S	3													X				X	X
2	BL-CS-TC09-050212	2	5/2/12	8:10	S	3													X				X	X
3	BL-CS-TC09-050212 DUP	3	5/2/12	8:10	S	3													X				X	X
4	BL-CS-TC08-050212	4	5/2/12	8:40	S	3													X				X	X
5	BL-CS-EC06-050212	5	5/2/12	8:57	S	3													X				X	X
6	BL-CS-TC01-050212	6	5/2/12	9:57	S	3													X				X	X
7	BL-CS-TC01-050212 MS/MSD	7	5/2/12	9:57	S	3													X				X	X
8	BL-CS-EC04-050212	8	5/2/12	11:25	S	3													X				X	X
9																								
10																								

Normal Turn Around Time (TAT) = 7-10 Business Days YES NO

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: _____

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS: Please analyze for metals (As, Cd, Cu, Fe, Pb, Zn) using 6020 CAL

RELINQUISHED BY: Signature: Kim Jones Date: 5/2/12 Printed Name: Kim Jones Company: ERRG

RECEIVED BY: Signature: Kelly Date: 5-3-12 Time: 16:40 Printed Name: Bernadine Hinckley Company: Apex

RELINQUISHED BY: Signature: Printed Name: Company:

RECEIVED BY: Signature: Date: Time: Printed Name: Company:

Shipped via Fedex

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503-718-2323 Phone
503-718-0333 Fax

Engineering/Remediation Resource Group, Inc	Project: **Blue Ledge Mine**	
4585 Pacheco Blvd, Suite 200 (Corporate address)	Project Number: 2010-084	**Reported:**
Martinez, CA 94553	Project Manager: Kim Jones	06/11/12 15:10

APEX LABS — **CHAIN OF CUSTODY**

12232 S.W. Garden Place, Tigard, OR 97223 PH: 503-718-2323 Fax: 503-718-0333

Lab # A12E063 COC 2 of 2

Company: ERRG — Project Mgr: Mike Hudson — Project Name: Blue Ledge Mine — Project # 2010-084

Address: 4585 Pacheco Blvd #200 — Phone: (925) 969-0750 — Fax: (925) 969-0751 — Email: kim.jones@errg.com

Sampled by: Kim Jones

Site Location: OR WA Other: CA

ANALYSIS REQUEST

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOC	8260 RBDM VOCs	8260 BTEX	8270 SVOC	8270 SIM PAHs	8082 PCBs	680 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, Sn, Ti, V, Zn	TOTAL (DISS) TCLP	1200-COLS	1200-Z	Hardness SM 2340B	Alkalinity SM 2320B	TDS SM 2540C	TSS SM 2540D	Sulfate EPA 300	pH
1	BL-SW-EC06-050212	9	5/2/12	11:44	W	2													X			X	X	X	X	X		
2	BL-SW-3C01-050212	10	5/2/12	09:54	W	2													X			X	X	X	X	X		
3	BL-SW-EC04-050212	11	5/2/12	11:17	W	2													X			X	X	X	X	X		
4	BL-RS-050212	12	5/2/12	09:01	W	2											X										X	
5																												
6																												
7																												
8																												
9																												
10																												

Normal Turn Around Time (TAT) = 7-10 Business Days — YES / NO

TAT Requested (circle): 1 Day, 2 Day, 3 Day, 4 DAY, 5 DAY, Other: ____

SPECIAL INSTRUCTIONS: Please analyze for metals (As, Ca, Cu, Fe, Pb, Zn) using 6020 CA-LL

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature] Date: 5/2/12	Signature: [signature] Date: 5-3-12	Signature: Date:
Printed Name: Kim Jones	Printed Name: Hinckley	Printed Name:	Printed Name:
Company: ERRG	Company: APEX	Company:	Company:
Time: 12:40	Time: 9:00	Time:	Time:

Shipped via FedEx

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.