

**GROUNDWATER ASSESSMENT AND SPLP
TESTING
GRANDVIEW MINE SITE
METALINE FALLS, WASHINGTON**

**PREPARED FOR:
TECK AMERICAN INCORPORATED
URS PROJECT NO. 36310064**



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1.0 INTRODUCTION

This letter report presents the results of our installation and sampling of four groundwater monitoring wells and the collection of 13 mine tailing and waste rock samples for Synthetic Precipitation Leaching Procedure (SPLP) testing at the historic Grandview Mine Site near Metaline Falls, Washington (Site). Currently, Teck American Incorporated (Teck) is participating with other Respondents in an Administrative Order on Consent (AOC) with the U.S. Environmental Protection Agency, Region 10 (EPA) to conduct an Engineering Evaluation and Cost Analysis (EE/CA) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for the Site. Results of this groundwater assessment and SPLP testing will be used to determine suitable Site closure under EE/CA criteria.

Field activities in support of this limited assessment were conducted in accordance with the following:

1. *Second Draft Work Plan, Groundwater Assessment and SPLP Testing, Grandview Mine Site, Metaline Falls, Washington*, dated May 25, 2010
2. *Final Draft Work Plan*, letter to Mr. Gary Uphoff, Project Coordinator, Grandview Mine Respondents, dated July 26, 2010

These documents comprise the Work Plan and describe rational, methodology, and data quality requirements of this assessment.

1.1 Background

The Site is comprised of three general areas including an Upper Mine Area, a Lower Mill Area, and a Tailings Accumulation Area. The Upper Mine Area includes a collapsed adit, a former shop, a core shack and foundations of former buildings. The Lower Mill Area includes buildings, staging areas, equipment associated with a former mill, a miners' dry, a former laboratory, rock crushing equipment, a water tank, a former power substation, remnants of several buildings, and waste rock source areas. The Tailings Accumulation Area is located down slope of the mine area, near the community of Pend Oreille Village, and includes an accumulation of mill tailings from the former Grandview Mill. Mining activities reportedly occurred at the Site during the late 1920s to 1964. The Site is presented on the Site Location Map, Figure 1.

1.2 Assessment Summary

Remediation of historic mining and milling residues (source areas) is required to protect human health and the environment at the Site. Source areas include waste rock in the Upper Mine Area, waste rock in the Lower Mill Area, and mill tailings in the Tailings Accumulation Area. The proposed removal action under consideration includes the consolidation and capping of the source materials at the Site in a repository to be constructed at the Lower Mill Area. Prior to this assessment, the quality of shallow groundwater beneath and downgradient of the source areas was unknown. In addition, the leaching potential of these source area residuals (waste rock and mill tailings) had not been characterized. The quality of groundwater near source areas and the

potential for leaching of metals from source materials are data gaps for evaluation of the cover requirements for the repository. The activities conducted during this assessment address these data gaps.

URS, on behalf of the Respondents, contracted and oversaw the installation of monitoring wells in the vicinity of the tailings and waste rock source areas. As part of this assessment, an upgradient monitoring well was installed at the Site to document background concentrations of contaminants of concern in groundwater. Each monitoring well was installed in accordance with Washington State requirements for resource protection wells (WAC 173-160). Unfiltered groundwater samples from the monitoring wells were collected and analyzed for select total metals including antimony, arsenic, barium, beryllium, cadmium, total chromium, copper, lead, mercury, selenium, silver and zinc. Groundwater analytical results for each analyte were compared to groundwater decision criteria defined in the Work Plan.

The leaching potential of total metals from waste rock and tailings using SPLP testing also was conducted. Four 5-point composite soil samples were collected from representative areas from both the Upper Mine Area waste rock and from the Tailings Accumulation Area tailings. Five 5-point composite soil samples also were collected from the Lower Mill Area waste rock. Samples were collected using split spoon sampler, hand tools, hand-auger, and/or shovel test pit methods. These composite samples were analyzed by SPLP methods for antimony, arsenic, barium, beryllium, cadmium, total chromium, copper, lead, mercury, selenium, silver, and zinc. Results of SPLP testing were compared to SPLP decision criteria defined in the Work Plan.

1.3 Scope of Work

The following was conducted as part of this groundwater assessment and SPLP testing study:

1. Conducted a pre-work Site visit to field locate and mark each of the four monitoring wells and thirteen SPLP sample locations. Locations were provided to Respondents and EPA for review and comment prior to the initiation of field activities.
2. Prepared a health and safety plan (HASP) in accordance with WAC 296-62 and CFR 1910.120.
3. Contacted the one-call utility locating service in advance of field work to locate public utilities in the area of our explorations.
4. Subcontracted Environmental West Exploration, a Spokane-based water well driller licensed in the State of Washington to drill one soil boring within the boundaries of the Tailings Accumulation Area (MW-1), one soil boring adjacent and downgradient to the Tailings Accumulation area (MW-2); one soil boring in the Lower Mill Area (MW-3); and one soil boring upgradient and east of the Lower Mill Area (MW-4) to represent background groundwater quality. Each of these soil borings was drilled using air-rotary methods.

5. Collected soil samples at approximately 5-foot-depth intervals from the upper and lower portions of each monitoring well/soil boring for soil logging. Each sample was logged and field screened for potential impacts using visual methods.
6. Collected four 5-point composite samples each from the Tailings Accumulation Area and Upper Mine Area, and five 5-point composite samples from the Lower Mill Area using hand-auger, hand, and/or shovel methods for analysis by SPLP methods (EPA Methods 1312, 6020 and 7470A) for antimony, arsenic, barium, beryllium, cadmium, total chromium, copper, lead, mercury, selenium, silver and zinc. Composite soil samples were also collected during drilling of MW-1 and MW-3 in the Tailings Accumulation Area and Lower Mill Area, respectively, to evaluate these areas as described in Table 2. Locations of SPLP samples are shown on Site Plan – Lower Mill Area, Figure 2; Site Plan - Tailings Accumulation Area, Figure 3; and Site Plan – Upper Mine Area, Figure 4.
7. Drill cuttings were placed on the ground near each soil boring to later be incorporated into the cleanup action.
8. Installed a two-inch diameter polyvinyl chloride (PVC) monitoring well in each of the four boreholes. Each well was constructed as a resource protection monitoring well in accordance with Washington State law. Each well was completed with flush-mount locking monuments.
9. Developed each monitoring well using surge and pump methods. Monitoring wells were generally developed until well water flowed clear (MW-2, MW-3 and MW-4) or until the well was purged dry (MW-1).
10. Collected groundwater samples from each monitoring well. Prior to sampling, the depth to water in each well was measured relative to top-of-casing using a water level indicator. Low-flow methods were used to collect the groundwater samples.
11. Submitted each groundwater sample to a TestAmerica, a Washington State accredited laboratory for analysis of antimony, arsenic, barium, beryllium, cadmium, total chromium, copper, lead, mercury, selenium, silver, and zinc by EPA 200 series methods.

2.0 SITE CONDITIONS AND SAMPLING METHODOLOGY

In accordance with the Work Plan, the groundwater assessment portion of this study was conducted by drilling four soil borings and installing groundwater monitoring wells in each of the borings. Three of the monitoring wells were installed at locations within or near mine and mill waste source areas including the Tailings Accumulation Area (MW-1 and MW-2) and Lower Mill Area (MW-3). These monitoring wells were installed to measure groundwater impacts resulting from historic accumulations of mine and mill waste. A fourth monitoring well was installed upgradient of source areas (MW-4) to evaluate background groundwater conditions.

The SPLP testing portion of this study was conducted in accordance with the Work Plan and included collecting 13 composite samples of waste rock and potentially-impacted soil near mine

and mill waste source areas. Monitoring well and SPLP sample locations are shown in Figures 2 through 4. The following sections further describe site conditions and sampling methodology.

2.1 Groundwater Sample Collection and Analyses

Soil boring MW-1 was drilled on August 4 and 5, 2010 to a depth of 26.5 feet below ground surface (bgs). During drilling, silt- and sand-sized tailings were encountered to a depth of approximately 12 feet bgs; between 12 and 17 feet bgs a fine sand-sized material was encountered that appeared more oxygenated and was difficult to distinguish between tailings or native soil. For the purposes of this assessment the material was considered to be tailings. Native sandy silt was encountered below 17 feet bgs, and groundwater was encountered at 22 feet bgs. A telescoping method was used to drill MW-1; an 8-inch casing was used to advance the soil boring through tailings material to a depth of about 17 feet bgs and a 6-inch casing was used to advance the soil boring to the final depth. This telescoping procedure was used to limit the potential for cross-contamination of underlying soil and to provide a larger surface seal.

Soil boring MW-2 was drilled on August 3 and 4, 2010 to a depth of 80 feet bgs. During drilling alternating layers of gravels and sands were encountered to the completed depth. Groundwater was observed in a sand layer at a depth of approximately 71 feet bgs during drilling.

Soil boring MW-3 was drilled on August 3, 2010 to a depth of 50 feet bgs. A mismatch of the hammer and subsequent unthreading of the drill rods rendered this boring unsuitable for the construction of a monitoring well. This boring was abandoned in accordance with Washington State Department of Ecology guidelines and a new boring was installed 15 feet to the southeast (crossgradient). The new boring was advanced to 65 feet bgs. Alternating layers of silts, silty sands and sand were encountered during installation of this boring. Groundwater was observed in a sand layer at a depth of approximately 55 feet bgs during drilling.

Monitoring well MW-4 was drilled on August 2, 2010 to a depth of 30 feet bgs. Soils encountered during drilling were alternating layers of silts, silty sands and sand. Groundwater was observed in a silty sand layer at a depth of approximately 17 feet bgs during drilling. Soil boring logs and well completion diagrams are presented in Appendix A.

Groundwater samples were collected from MW-2, MW-3 and MW-4 using a Grundfos Rediflow II pump on August 5 and August 6, 2010. A groundwater sample could not be collected from MW-1 on August 6, 2010 because the well did not sufficiently recharge after development; therefore, the groundwater sample was collected using a peristaltic pump on August 18, 2010. A Horiba U-22 multi-parameter water quality meter and a flow through cell were used to record groundwater quality parameters during purging activities prior to sampling. Because of the limited quantity of water observed in MW-1, water quality parameters were not collected from this well. Water quality parameters are presented in Groundwater Quality Parameters, Table 1.

Groundwater samples were collected in laboratory prepared sample containers and placed on ice pending delivery to the laboratory. Groundwater samples were submitted under chain of custody to TestAmerica in Spokane, Washington for analysis of Total Metals by EPA Methods 200.8 and 245.1.

2.2 Sample Collection and Analyses -- SPLP

One composite soil sample each was collected for SPLP analysis during drilling of soil borings MW-1 and MW-3. The composite sample collected during the drilling of MW-1 (TASB-1-6.0-14.0) consisted entirely of mill tailings from between approximately 5.5 to 14.0 feet bgs. The composite sample collected during the drilling of MW-3 (LMSB-5-0.5-10.5) was collected between approximately 0.5 to 12.5 feet bgs; the near surface sub-composite sample for LMSB-5 was collected with a shovel at a depth of 0.5 feet bgs.

Test pits LMTP-1, LMTP-2 and LMTP-4 were excavated from the exposed face of waste rock piles. A trench approximately 1-foot in depth was excavated starting near the top of each pile, with the depth increasing towards the bottom. Each trench measured approximately 3 feet in length. All material collected for these three composite samples consisted of waste rock.

Test pit LMTP-3 was excavated to a depth of 3 feet bgs using a shovel and hand auger. One composite sample was collected from this test pit. The upper 1 foot of the excavation consisted of waste rock, with the remainder consisting of native silty sand beneath the waste rock.

Test pit TAHA-1 was excavated to a depth of 3 feet bgs using a hand auger. Sample material consisted of mill tailings.

The two-point composite sample TAHA-2 was collected by compositing the five-point composite samples collected during the excavation of TAHA-2a and TAHA-2b. Both excavations were completed to a depth of 2 feet bgs using a hand auger. Material in each sub-composite sample consisted of mill tailings from the total depth explored.

Test pit TAHA-3 was collected from the exposed face of a cut bank exposing mill tailings. The excavating was approximately 1-foot in depth and 3-feet in length. All material collected consisted of mill tailings.

Test pit UMTF-1 was relocated while in the field. It appeared that the original location targeted during the pre-field site visit was entirely native soil and the sample location was moved to a location which consisted of waste rock. The excavation was completed to a depth of 2.7 feet bgs using shovel, breaker bar and hand auger. The entire sample consisted of waste rock.

Test pit UMTF-2 was excavated to a depth of 3 feet bgs. This location was near the top of a historic conveyor belt and consisted of waste rock to the depth explored. The sample was collected using shovel, breaker bar and hand auger.

Test pit UMTF-3 was excavated to a depth of 3 feet bgs using shovel, breaker bar and hand auger. Sample material consisted of waste rock to the depth explored.

Test pit UMTF-4 was excavated to a depth of 1.5 feet bgs with a shovel and hand auger. Waste rock was encountered from the ground surface to a depth of 0.8 feet bgs. Native silt was encountered below this depth. The sample consisted of waste rock and native silt.

A total of thirteen composite waste rock and soil samples were collected during this task of the assessment; eleven from test pits and one each from soil borings MW-1 and MW-3. These samples were collected from each exploration at specific depth intervals as defined in the Work Plan. New nitrile disposable gloves were used by the URS geologist to collect each sample. Each SPLP sample was composited as described in the Work Plan and placed in laboratory prepared sample jars. The sample jars were labeled and placed in a cooler containing ice. After sampling was completed, each test pit was backfilled with the excavated soil. Sampling equipment was decontaminated between sample locations. Soil samples were submitted under chain of custody to the TestAmerica Laboratory in Spokane, Washington for SPLP analysis by EPA Methods 1312, 6020 and 7470A. Test Pit Logs, Appendix B, detail soil conditions, sub-composite collection depths and other general conditions observed during excavation.

3.0 RESULTS

URS conducted a data quality review of the laboratory results in accordance with the Work Plan and Standard Operating Procedure 5 – Data QC Review and Validation of Laboratory Data. A narrative of the data quality review is presented in the *Summary Data Quality Review, Grandview Mine Assessment, August 2010 presented in Appendix C*. The data reported by the laboratory, as qualified by a URS chemist as described in the Appendix C, is considered to be usable for meeting the assessment objectives. Laboratory analytical results are discussed below.

3.1 Groundwater

Four groundwater samples were submitted for total metals analysis. Analytical results are summarized in Table 2, Summary of Metals Concentrations in Groundwater. Analytical result for total metals indicate that contaminants of concern were not detected in groundwater samples at concentrations exceeding groundwater decision criteria limits defined in the Work Plan. Laboratory analytical reports documenting the results of these analyses are presented in Appendix C.

3.2 Soil SPLP

Thirteen mine waste and soil samples were submitted for SPLP analysis. Analytical results are summarized in Table 3, Summary of Synthetic Precipitate Leaching Procedure Metals Concentration in Soil. Analytical results for SPLP metals concentrations indicate that contaminants of concern were not detected in the samples at concentrations exceeding SPLP decision criteria limits defined in the Work Plan. Laboratory analytical reports documenting the results of these analyses are presented in Appendix C.

4.0 FINDINGS

URS collected four groundwater samples from monitoring wells located adjacent to and upgradient of Grandview Mine site contaminant source areas. None of the groundwater samples contain total metals concentrations exceeding groundwater decision criteria limits defined in the Work Plan.

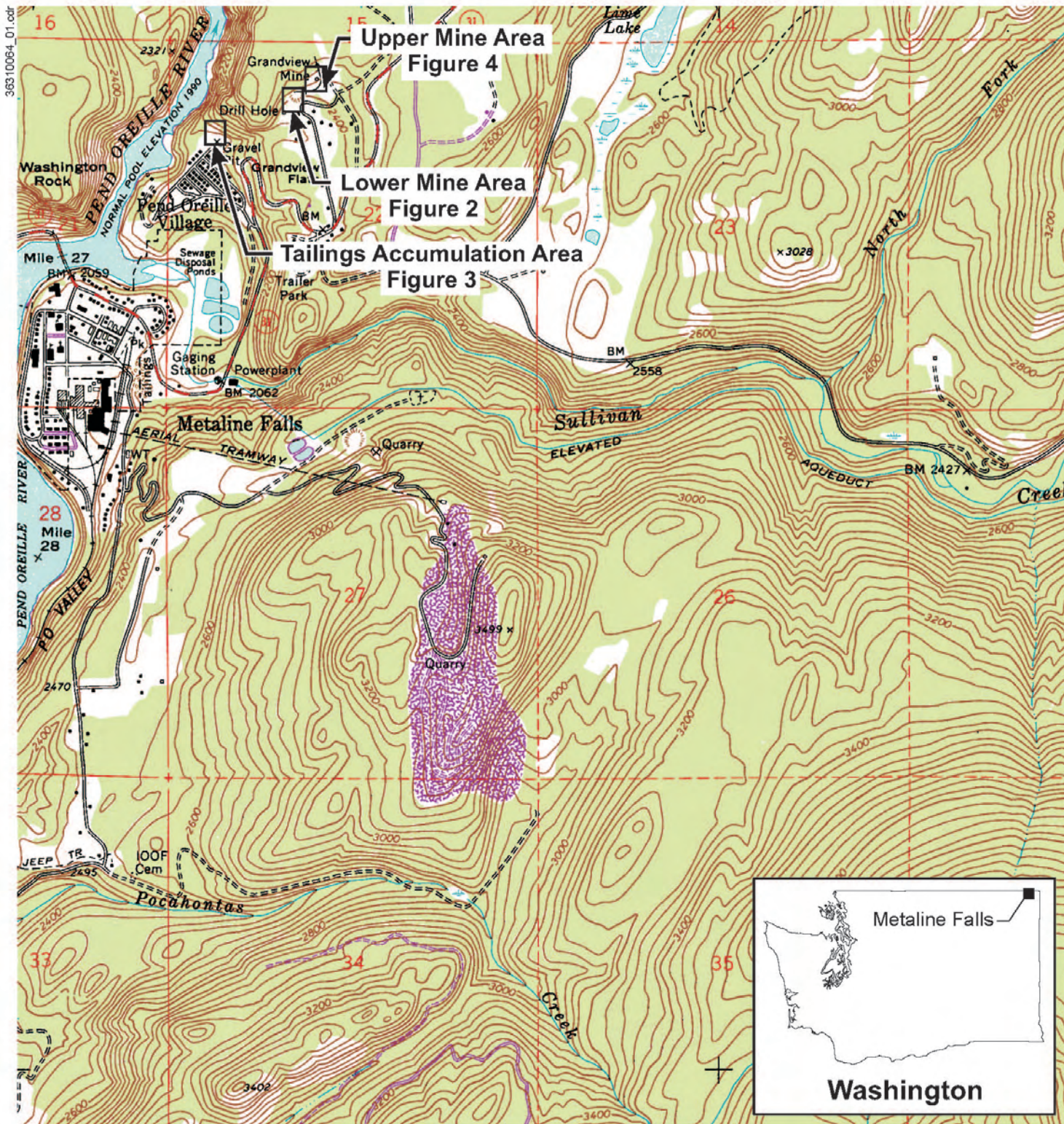
URS collected thirteen mine waste and soil samples from representative locations in each of the three Grandview Mine site contaminant source areas. None of the mine waste and soil samples contained SPLP concentrations exceeding SPLP decision criteria limits defined in the Work Plan.

5.0 LIMITATIONS

This letter is intended for the sole use of our client. The scope of services performed may not be appropriate to satisfy the needs of other users, and any use or re-use of this document or the findings, conclusions, or recommendations presented is at the sole risk of the user.

URS' objective is to perform our work with care, exercising the customary thoroughness and competence of environmental and engineering consulting professionals in the relevant disciplines, in accordance with the standard for professional services by a national consulting firm at the time those services are rendered. It is important to recognize that even the most comprehensive scope of services may fail to detect environmental liability on a particular site. Therefore, URS cannot act as insurers and cannot "certify or underwrite" that a site is free of environmental contamination, and no expressed or implied representation or warranty is included or intended in our reports except that our work was performed, within the limits prescribed by our client, with the customary thoroughness and competence of our profession.

FIGURES





SOURCE: Google Earth Pro, 2010 DigitalGlobe

LEGEND

- URS SPLP Sample Location
- ⊕ URS Monitoring Well Location

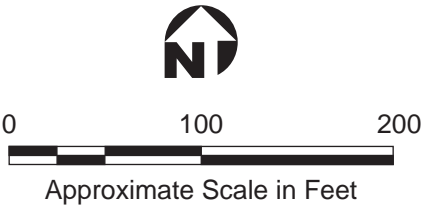



Figure 2
Lower Mine Area




SOURCE: Google Earth Pro, 2010 DigitalGlobe


LEGEND



 URS SPLP Sample Location




 URS Monitoring Well Location



0

100

200



Approximate Scale in Feet

Figure 3
Tailings Accumulation Area



SOURCE: Google Earth Pro, 2010 DigitalGlobe

LEGEND

- URS SPLP Sample Location
- ⊕ URS Monitoring Well Location



0 100 200
Approximate Scale in Feet

TABLES

Table 1
Groundwater Quality Parameters
Grandview Mine Assessment

Monitoring Well ID	Date	Depth to Water	Temperature Celsius	pH	Conductivity (uS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)
MW-1	08/18/10	23.50	-	-	-	-	-	-
MW-2	08/05/10	71.20	11.5	7.06	0.095	20.4	13.16	129
MW-3	08/06/10	55.20	10.7	6.95	0.094	402	12.10	133
MW-4	08/06/10	17.01	8.6	7.10	0.099	error	10.03	140

Notes:

Depth to water measured from top of casing.

- Not Measured.

Groundwater quality parameters measured using a Horiba U-22 with flow through cell

Table 2
Summary of Metals Concentrations in Groundwater (mg/L)
Grandview Mine Assessment
August 2010

Sample Location	Date Collected	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc
Groundwater Criteria (mg/L) ¹		0.006	0.01	2	0.004	0.005	1.3	1.3	0.015	0.002	0.05	5	5
MW-1	8/18/2010	0.00100 U	0.00500 U	0.0744	0.00200 U	0.00100 U	0.0100 U	0.0100 U	0.00116	0.000200 U	0.0462	0.00100 U	0.0500 U
MW-2	8/5/2010	0.00100 U	0.00100 U	0.0357	0.00200 U	0.00100 U	0.00203	0.00200 U	0.00100 U	0.000200 U	0.0213	0.00100 U	0.0100 U
MW-3	8/6/2010	0.00100 U	0.00100 U	0.106	0.00200 U	0.00100 U	0.00343	0.00200 U	0.00100 U	0.000200 U	0.00119	0.00100 U	0.0100 U
	8/6/10 (DUP)	0.00100 U	0.00100 U	0.104	0.00200 U	0.00100 U	0.00365	0.00200 U	0.00100 U	0.000200 U	0.00120	0.00100 U	0.0100 U
MW-4	8/6/2010	0.00100 U	0.00181	0.0990	0.00200 U	0.00100 U	0.00558	0.00398	0.00326	0.000200 U	0.00157	0.00100 U	0.0133

Notes:

DUP - Field duplicate

U - Analyte was analyzed for but not detected above the reporting limit shown.

¹State of Washington Department of Health Maximum Contaminant Levels (MCLs)

Table 3
Summary of Synthetic Precipitate Leaching Procedure (SPLP) Metals Concentrations in Soil (mg/L)
Grandview Mine Assessment
August 2010

Sample Location	Sample Depth (feet bgs)	Date Collected	Antimony	Arsenic	Barium	Beryllium ²	Cadmium	Chromium	Copper	Lead	Mercury	Selenium	Silver	Zinc
SPLP Criteria (mg/L) ¹			0.006	0.01	2	0.004	0.05	1.3	1.3	0.15	0.002	0.05	5	50
LMSB-5	0.5 - 10.5	8/3/2010	0.0100 U	0.0100 U	0.0100 U	0.0200 U	0.0100 U	0.0200 U	0.0200 U	0.0100 U	0.000200 U	0.0100 U	0.0100 U	0.100 U
LMTP-1	0.5 - 3.0	8/3/2010	0.0100 U	0.0100 U	0.0139	0.0200 U	0.0100 U	0.0200 U	0.0200 U	0.128	0.000200 U	0.0100 U	0.0100 U	0.100 U
LMTP-2	0.5 - 3.0	8/3/2010	0.0100 U	0.0100 U	0.0100 U	0.0200 U	0.0100 U	0.0200 U	0.0200 U	0.0100 U	0.000200 U	0.0100 U	0.0100 U	0.100 U
LMTP-3	0.5 - 3.0	8/3/2010	0.0100 U	0.0100 U	0.0921	0.0200 U	0.0279	0.0200 U	0.0200 U	0.141	0.000200 U	0.0100 U	0.0100 U	3.26
LMTP-4	0.5 - 3.0	8/3/2010	0.0100 U	0.0100 U	0.0313	0.0200 U	0.0100 U	0.0200 U	0.0200 U	0.0948	0.000200 U	0.0100 U	0.0100 U	0.100 U
TAHA-1	0.5 - 2.0	8/4/2010	0.0100 U	0.0100 U	0.0281	0.0200 U	0.0100 U	0.0200 U	0.0200 U	0.0330	0.000200 U	0.0100 U	0.0100 U	0.100 U
TAHA-2	0.5 - 2.0	8/4/2010	0.0100 U	0.0100 U	0.0132	0.0200 U	0.0100 U	0.0200 U	0.0200 U	0.0463	0.000200 U	0.0100 U	0.0100 U	0.167
TAHA-3	3.0 - 6.0	8/4/2010	0.0100 U	0.0100 U	0.0230	0.0200 U	0.0100 U	0.0200 U	0.0200 U	0.104	0.000200 U	0.0100 U	0.0100 U	0.699
TASB-4	5.0 - 14.0	8/4/2010	0.0100 U	0.0100 U	0.0276	0.0200 U	0.0100 U	0.0200 U	0.0200 U	0.0243	0.000200 U	0.0100 U	0.0100 U	0.241
UMTP-1	0.5 - 2.7	8/5/2010	0.0100 U	0.0100 U	0.0120	0.0200 U	0.0100 U	0.0200 U	0.0200 U	0.0672	0.000200 U	0.0100 U	0.0100 U	0.100 U
UMTP-2	0.5 - 3.0	8/5/2010	0.0100 U	0.0100 U	0.0817	0.0200 U	0.0100 U	0.0200 U	0.0200 U	0.150	0.000200 U	0.0100 U	0.0100 U	0.110
UMTP-3	0.5 - 3.0	8/5/2010	0.0100 U	0.0100 U	0.0987	0.0200 U	0.0100 U	0.0200 U	0.0200 U	0.0226	0.000200 U	0.0100 U	0.0100 U	0.100 U
UMTP-4	0.5 - 1.0	8/5/2010	0.0100 U	0.0100 U	0.0337	0.0200 U	0.0100 U	0.0200 U	0.0200 U	0.0720	0.000200 U	0.0100 U	0.0100 U	0.100 U

Notes:

bgs - below ground surface

Values in **bold** font indicate that the reported result exceeds the SPLP Criteria.

U - Analyte was analyzed for but not detected above the reporting limit shown.

¹State of Washington Model Toxics Control Act WAC 173-340-747 (7)(c.)

² Beryllium was not detected in any sample at a concentration exceeding the method detection limit of 0.00570 mg/L.

APPENDIX A
BORING LOGS

Project: Grandview Mine
Project Location: Metaline Falls, WA
Project Number: 36310064

Log of Boring MW-1

Sheet 1 of 1

Date(s) Drilled	8/4/10 and 8/5/10	Logged By	GDP	Checked By	RDE
Drilling Method	Tubex	Drilling Contractor	Environmental West Exploration	Total Depth of Borehole	26.5 feet bgs
Drill Rig Type	Mobile B-90	Drill Bit Size/Type	8-inch casing to 17 ft, 6-inch casing to 25 ft	Ground Surface Elevation	
Groundwater Level	22' bgs on 8/6/10	Sampling Method	2" O.D. SPT	Hammer Data	140 lb. 30" drop
Borehole Backfill	Completed as Monitoring Well	Location	Tailings Accumulation Area		

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION	Well Completion Schematic	REMARKS AND WELL DETAILS
		Type	Number	Blows/ 6in.	Recovery (%)					
0							SM/ML	Surface: tailings Gray tailings		14:00 Begin Drilling
5										
				8-7-6	90			Gray silty SAND and sandy SILT (stiff/medium dense) (moist) (tailings) Grades brown Grades orange-brown Grades gray-brown Same as above (stiff/medium dense) (wet at bottom 1.5")		15:00
				N=13						
				4-5-6	100					
				N=11						
10				8-6-4	100			Gray-brown silty fine SAND and sandy SILT (stiff/medium dense) (moist) (tailings)		
				N=10						
				6-6-4	97			Brown silty fine SAND and sandy fine SILT (stiff/medium dense) (moist) (tailings)		
				N=10						
				8-9-7	100		SP	Buff and brown fine SAND (medium dense) (wet) (tailings)		15:30
				N=13						
15										
				13-9-8	91		ML	Brown sandy SILT (stiff) (wet) (native)		15:45
				N=17						8" casing to 17' bgs - switched to 6" casing below 17'
				15-11-10	100			Grading brown SILT (very stiff) (wet) (native)		16:10
				N=21						16:30 End of Shift
20				10-12-12	100			Same as above		8:00 Begin Drilling
				N=24						8:05
				9-10-10	100			Same as above		8:15
				N=20				1" sand lense mid-sample		
25				11-10-12	100			Same as above		8:45
				N=22						11:00 End Drilling
								Boring was completed to 25' bgs and sampled to 26.5' bgs. Boring was completed as 2-inch monitoring well: 0'-18' Hydrated bentonite 18'-25' Sand pack, 10-20 sand 20'-25' Well screen, 10-slot		
30										

22 ft ▼

ENV2 WITH WELL T:\ONEWORLD\36310064 GRANDVIEW MINE\36310064.GPJ URSSEA3B.GLB URSSEA3.GDT 9/16/10

URS

Project: Grandview Mine
Project Location: Metaline Falls, WA
Project Number: 36310064

Log of Boring MW-2

Sheet 1 of 3

Date(s) Drilled	8/3/10 and 8/4/10	Logged By	GDP	Checked By	RDE
Drilling Method	Tubex	Drilling Contractor	Environmental West Exploration	Total Depth of Borehole	80 feet bgs
Drill Rig Type	Mobile B-90	Drill Bit Size/Type	6-inch casing	Ground Surface Elevation	
Groundwater Level	71.20 on 8/5/10	Sampling Method	2" O.D. SPT	Hammer Data	140 lb. 30" drop
Borehole Backfill	Completed as Monitoring Well	Location	Tailings Accumulation Area		

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION	Well Completion Schematic	REMARKS AND WELL DETAILS
		Type Number	Blows/ 6in.	Recovery (%)	OVM (ppm)					
0							GP/GM	Gray-brown silty GRAVEL with sand, occasional cobbles		4:00 Begin Drilling
5			50/4"	0				No recovery, cobbles and gravels based on cuttings		4:30
10								Rock from ~8.9' to 10.4' No SPT sample attempted		4:45
								COBBLES and BOULDERS based on cuttings		
15			100/5"	60			GP	GRAVEL with trace silt (very dense) (dry)		
								Dark gray COBBLES and BOULDERS based on cuttings		
20			30 50/1"	0				No recovery		5:10 End of Shift 8:00 Begin Drilling
25			40 50/2"	0				No recovery, gray cuttings		8:15
								Grades brown silty GRAVEL with cobbles based on cuttings		
								Grades gray cuttings		
30								Gray rock in shoe (very dense) (dry) based on cuttings		

ENV2 WITH WELL T:\ONEWORLD\36310064 GRANDVIEW MINE\36310064.GPJ URSSEA3B.GLB URSSEA3.GDT 9/16/10

Project: Grandview Mine

Project Location: Metaline Falls, WA

Project Number: 36310064

Log of Boring MW-2

Sheet 2 of 3

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION		REMARKS AND WELL DETAILS
		Type Number	Blows/ 6in.	Recovery (%)	OVM (ppm)					
30	30	27 50/2"	28					Grades brown cuttings		8:25
35	35	29 50/3"	31					Gray-brown sandy GRAVEL with trace silt (very dense) (moist)		8:45
40	40	27 50/4"	60				SP	Fine SAND based on cuttings Gray fine SAND (very dense) (moist)		9:00
45	45	29 50/3"	50					Gray fine SAND with occasional gravel (very dense) (moist)		9:15
50	50	50/3"	0				GP	Becomes GRAVEL No recovery		9:25
55	55	34 50/1"	44					Gray fine to coarse GRAVEL with sand, trace silt (very dense) (moist)		9:45
60	60	30 50/4"	17					Same as above (very dense) (moist)		9:55
65	65									

ENV2 WITH WELL T:\ONEWORLD\36310064 GRANDVIEW MINE\36310064.GPJ URSSEA3B.GLB URSSEA3.GDT 9/16/10

Project: Grandview Mine

Project Location: Metaline Falls, WA

Project Number: 36310064

Log of Boring MW-2

Sheet 3 of 3

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION		REMARKS AND WELL DETAILS
		Type Number	Blows/6in.	Recovery (%)	OVM (ppm)					
65			22-28 30 N=68	68			SW	Gray fine to coarse SAND with trace gravel (very dense) (moist)		
							GP	Becomes gravelly		
70			33 50/4"	49				Gray SAND and GRAVEL (very dense) (moist)	71.2 ft ▼	
								Cuttings become wet		
75			50/6"	74			SP	Gray fine SAND with occasional gravel (very dense) (wet)		
							SW	Grades to SAND based on cuttings		
80								Boring was completed to 80' bgs. Boring was completed as 2-inch monitoring well: 0'-67' Hydrated bentonite 67'-80' Sand pack, 10-20 sand 70'-80' Well screen, 10-slot		12:00 End Drilling
85										
90										
95										
100										

ENV2 WITH WELL T:\ONEWORLD\36310064 GRANDVIEW MINE\36310064.GPJ URSSEA3B.GLB URSSEA3.GDT 9/16/10

Project Number: 36310064

Sheet 1 of 2

[illegible]

ENV2 WITH WELL T:\ONEWORLD\36310064 GRANDVIEW MINE\36310064.GPJ URSSEA3B.GLB URSSEA3.GDT 9/16/10

URS

Project: Grandview Mine

Project Location: Metaline Falls, WA

Project Number: 36310064

Log of Boring MW-3

Sheet 2 of 2

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION		REMARKS AND WELL DETAILS
		Type	Number	Blows / 6in.	Recovery (%)					
30				17-24- 20 N=44	93			Gray fine SAND (dense) (moist)		
35				21-22- 20 N=42	90			Gray fine SAND with occasional fine gravel (dense) (moist)		9:15
40				20-31- 40 N=71	96			Same as above		9:25
45				22- 50/5"	47			Gray fine SAND with occasional fine gravel (dense) (moist)		9:35
50				28-21- 24 N=45	57			Gray fine SAND with occasional gravel (dense) (moist)		9:45
55				30-31- 30 N=61	87			Gray fine SAND (very dense) (wet)	55.2 ft	10:05
60				21-24- 21 N=45	89			Wet cuttings		
								No water, w/e @ 60'		
								Gray-brown fine SAND (dense) (wet)		10:20
65								Boring was completed to 65' bgs. Boring was completed as 2-inch monitoring well: 0'-42' Hydrated bentonite 42'-65' Sand pack, 10-20 sand 45'-65' Well screen, 10-slot		

ENV2 WITH WELL T:\ONEWORLD\36310064 GRANDVIEW MINE\36310064.GPJ URSSEA3B.GLB URSSEA3.GDT 9/16/10

Project: Grandview Mine
Project Location: Metaline Falls, WA
Project Number: 36310064

Log of Boring MW-4

Sheet 1 of 1

Date(s) Drilled	8/2/10	Logged By	GDP	Checked By	RDE
Drilling Method	Tubex	Drilling Contractor	Environmental West Exploration	Total Depth of Borehole	30 feet bgs
Drill Rig Type	Mobile B-90	Drill Bit Size/Type	6-inch casing	Ground Surface Elevation	
Groundwater Level	17.01 on 8/6/10	Sampling Method	2" O.D. SPT	Hammer Data	140 lb. 30" drop
Borehole Backfill	Completed as Monitoring Well	Location	Background		

Elevation, feet	Downhole Depth, feet	SAMPLES				Graphic Log	USCS	MATERIAL DESCRIPTION	Well Completion Schematic	REMARKS AND WELL DETAILS
		Type Number	Blows/ 6in.	Recovery (%)	OVM (ppm)					
0							SM	Brown silty SAND with gravel (loose to medium dense) (moist)		10:00 Begin drilling
5							SM/ML	Brown sandy SILT and silty SAND (loose) (moist)		
			20-20-20 N=40	97			ML	Brown SILT with trace very fine sand (hard) (moist)		10:15
10			16-17-19 N=36	100			SP	Brown fine SAND with trace gravel (dense) (moist)		10:30
15			15-17-20 N=37	100			SM/ML	Brown silty fine SAND (dense) (wet)		
							SP	Brown silty fine SAND and sandy SILT (dense) (wet)		
							SM	Brown fine SAND, trace silt (dense) (wet)		
							SM	Brown silty fine SAND (wet)		17.01 ft ▼
								Water level measures 18.5' during drilling		
20			4-6-10 N=16	94				Brown fine SAND with trace silt (medium dense) (wet)		10:50
25										
30							ML	Gray SILT (wet)		11:00
								Boring was completed to 30' bgs. Boring was completed as 2" monitoring well: 0'-17' Hydrated bentonite 17'-30' Sand pack, 10-20 sand 20'-30' Well screen, 10-slot		11:05
										12:30 End drilling

ENV2 WITH WELL T:\ONEWORLD\36310064 GRANDVIEW MINE\36310064.GPJ URSSEA3B.GLB URSSEA3.GDT 9/16/10

URS

APPENDIX B

TEST PIT LOGS

TEST PIT LOG

TEST PIT NO. LMTP-1

Page ___1___ of ___1___

Project: Grandview Mine SPLP Assessment	Client: Teck American Incorporated
URS Project No.: 36310068	Excavator Equipment: Shovel
Location: Lower Mine Area	Date Excavated: 08/03/10
Prepared by: GDP	Lat/Longitude 48.87138N, -117.35919W NAD83
Date: 09/09/10	Sample ID LMTP-1-0.5-3.0

DEPTH	SUB SAMPLE #	ASTM (SOIL TYPE)	SAMPLE DESCRIPTION Color/Consistency/Moisture/other(grain size, shape etc)	NOTES/REMARKS
0.0 – 0.5		GM	Light gray, fine to coarse gravel with sand and silt occ cobble, dry (fill)	Waste Rock
0.5 – 1.0	1	GM	Same as above	Waste Rock
1.0 – 1.5	2	GM	Same as above	Waste Rock
1.5 – 2.0	3	GM	Same as above	Waste Rock
2.0 – 2.5	4	GM	Same as above	Waste Rock
2.5 – 3.0	5	GM	Same as above	Waste Rock



TEST PIT LOG

TEST PIT NO. LMTP-2

Page ___1___ of ___1___

Project: Grandview Mine SPLP Assessment	Client: Teck American Incorporated
URS Project No.: 36310068	Excavator Equipment: Shovel
Location: Lower Mine Area	Date Excavated: 08/03/10
Prepared by: GDP	Lat/Longitude 48.87104N, -117.35986W/ 48.87104N NAD 83
Date: 09/09/10	Sample ID LMTP-2-0.5-3.0

DEPTH	SUB SAMPLE #	ASTM (SOIL TYPE)	SAMPLE DESCRIPTION Color/Consistency/Moisture/other(grain size, shape etc)	NOTES/REMARKS
0.0 – 0.5		GM	Light gray, fine to coarse gravel with sand and silt occ cobble, dry (fill)	Waste Rock
0.5 – 1.0	1	GM	Same as above	Waste Rock
1.0 – 1.5	2	GM	Same as above	Waste Rock
1.5 – 2.0	3	GM	Same as above	Waste Rock
2.0 – 2.5	4	GM	Same as above	Waste Rock
2.5 – 3.0	5	GM	Same as above	Waste Rock



TEST PIT LOG

TEST PIT NO. LMTP-3

Page ___1___ of ___1___

Project: Grandview Mine SPLP Assessment	Client: Teck American Incorporated
URS Project No.: 36310068	Excavator Equipment: Shovel
Location: Lower Mine Area	Date Excavated: 08/03/10
Prepared by: GDP	Lat/Longitude 48.87041N, -117.35956W NAD83
Date: 09/09/10	Sample ID LMTP-3-0.5-3.0

DEPTH	SUB SAMPLE #	ASTM (SOIL TYPE)	SAMPLE DESCRIPTION Color/Consistency/Moisture/other(grain size, shape etc)	NOTES/REMARKS
0.0 -0.5		GM	Light gray, fine to coarse gravel with sand and silt occ cobble, dry (fill)	Waste Rock
0.5 – 1.0	1	GM	Same as above	Waste Rock
1.0 – 1.5	2	SM	Brown, silty sand w/occ gravel, moist (native)	
1.5 – 2.0	3	SM	Same as above	
2.0 – 2.5	4	SM	Same as above	
2.5 – 3.0	5	SM	Same as above	



Project: Grandview Mine SPLP Assessment	Client: Teck American Incorporated
URS Project No.: 36310068	Excavator Equipment: Shovel
Location: Lower Mine Area	Date Excavated: 08/03/10
Prepared by: GDP	Lat/Longitude: 48.87107N, -117.35934W NAD83
Date: 09/09/10	Sample ID LMTP-4-0.5-3.0

DEPTH	SUB SAMPLE #	ASTM (SOIL TYPE)	SAMPLE DESCRIPTION Color/Consistency/Moisture/other(grain size, shape etc)	NOTES/REMARKS
0.0 – 0.5		GM	Light gray, fine to coarse gravel with sand and silt occ cobble, dry (fill)	Waste Rock
0.5 – 1.0	1	GM	Same as above	Waste Rock
1.0 – 1.5	2	GM	Same as above	Waste Rock
1.5 – 2.0	3	GM	Same as above	Waste Rock
2.0 – 2.5	4	GM	Same as above	Waste Rock
2.5 – 3.0	5	GM	Same as above	Waste Rock



TEST PIT LOG

TEST PIT NO. TAHA-1

Page ___1___ of ___1___

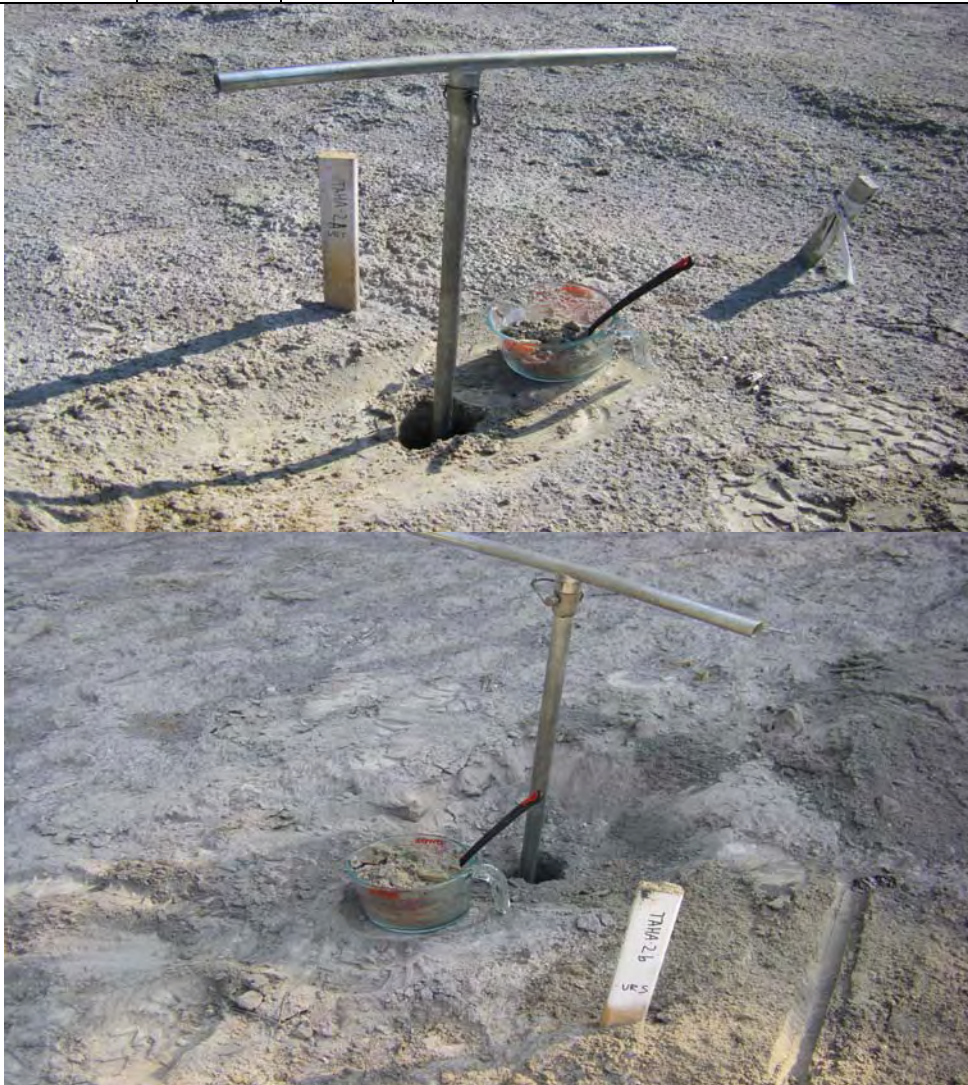
Project: Grandview Mine SPLP Assessment	Client: Teck American Incorporated
URS Project No.: 36310068	Excavator Equipment: Shovel
Location: Tailings Accumulation	Date Excavated: 08/04/10
Prepared by: GDP	Lat/Longitude 48.86960N, -117.36475W NAD83
Date: 09/09/10	Sample ID TAHA-1-0.5 - 2.0

DEPTH	SUB SAMPLE #	ASTM (SOIL TYPE)	SAMPLE DESCRIPTION Color/Consistency/Moisture/other(grain size, shape etc)	NOTES/REMARKS
0.5 – 1.0	1	SM	Gray, fine to coarse sand and silt, dry (fill)	Mill Tailings
1.0 – 1.5	2	SM	Same as above	Mill Tailings
1.5 – 2.0	3	SM	Gray, fine to coarse sand and silt, moist (fill)	Mill Tailings
2.0 – 2.5	4	SM	Same as above	Mill Tailings
2.5 – 3.0	5	SM	Same as above	Mill Tailings



Project: Grandview Mine SPLP Assessment	Client: Teck American Incorporated
URS Project No.: 36310068	Excavator Equipment: Hand auger
Location: Tailings Accumulation	Date Excavated: 08/04/10
Prepared by: GDP	Lat/Longitude: 48.86969N, -117.36421W/ 48.86976N, -117.36412 W NAD83
Date: 09/09/10	Sample ID TAHA-2-0.5-2.0

DEPTH	SUB SAMPLE #	ASTM (SOIL TYPE)	SAMPLE DESCRIPTION Color/Consistency/Moisture/other(grain size, shape etc)	NOTES/REMARKS Same for both TAHA-2a and 2b
0.5 – 1.0	1	SM	Gray, fine to coarse sand and silt, dry (fill)	Mill Tailings
1.0 – 1.5	2	SM	Same as above	Mill Tailings
1.5 – 2.0	3	SM	Gray, fine to coarse sand and silt, moist (fill)	Mill Tailings
2.0 – 2.5	4	SM	Same as above	Mill Tailings
2.5 – 3.0	5	SM	Same as above	Mill Tailings



TEST PIT LOG

TEST PIT NO. TAHA-3

Page __1__ of __1__

Project: Grandview Mine SPLP Assessment	Client: Teck American Incorporated
URS Project No.: 36310068	Excavator Equipment: Shovel
Location: Tailings Accumulation	Date Excavated: 08/04/10
Prepared by: GDP	Lat/Longitude 48.86967N, -117.36391W NAD83
Date: 09/09/10	Sample ID TAHA-3-3.0-6.0

DEPTH	SUB SAMPL E #	ASTM (SOIL TYPE)	SAMPLE DESCRIPTION Color/Consistency/Moisture/other(grain size, shape etc)	NOTES/REMARKS
3.0 – 3.5	1	SM	Gray, fine to coarse sand and silt, dry (fill)	Mill Tailings
3.5 – 4.0	2	SM	Same as above	Mill Tailings
4.0 – 4.5	3	SM	Gray, fine to coarse sand and silt, moist (fill)	Mill Tailings
4.5 – 5.0	4	SM	Same as above	Mill Tailings
5.0 – 5.5	5	SM	Same as above	Mill Tailings
5.5 – 6.0	5	SM	Same as above	Mill Tailings




TEST PIT LOG

TEST PIT NO. UMT-1

Page 1 of 1

Project: Grandview Mine SPLP Assessment			Client: Teck American Incorporated	
URS Project No.: 36310068			Excavator Equipment: Shovel, breaker bar, hand auger	
Location: Upper Mine Area			Date Excavated: 08/05/10	
Prepared by: GDP			Lat/Longitude 48.87169N, -117.35798W NAD83	
Date: 09/09/10			Sample ID UMT-1-0.5-2.7	
DEPTH	SUB SAMPLE #	ASTM (SOIL TYPE)	SAMPLE DESCRIPTION Color/Consistency/Moisture/other(grain size, shape etc)	NOTES/REMARKS
0.5 – 1.0	1	GM	Gray, fine to coarse gravel with sand and silt, dry (fill)	Waste Rock
1.0 – 1.5	2	GM	Same as above	Waste Rock
1.5 – 2.0	3	GM	Same as above	Waste Rock
2.0 – 2.5	4	GM	Same as above	Waste Rock
2.5 – 2.7	5	GM	Same as above	Waste Rock/ Refusal at 2.7 feet bgs.



TEST PIT LOG

TEST PIT NO. UMTP-2

Page ___1___ of ___1___

Grandview Mine SPLP Assessment	Client: Teck American Incorporated
URS Project No.: 36310068	Excavator Equipment: Shovel, pick, breaker bar, hand auger
Location: Upper Mine Area	Date Excavated: 08/05/10
Prepared by: GDP	Lat/Longitude 48.87159N, -117.35827W NAD83
Date: 09/09/10	Sample ID UMPT-2-0.5-3.0

DEPTH	SUB SAMPLE #	ASTM (SOIL TYPE)	SAMPLE DESCRIPTION Color/Consistency/Moisture/other(grain size, shape etc)	NOTES/REMARKS
0.5 – 1.0	1	GM	Gray brown, fine to coarse gravel with sand and silt, dry (fill)	Waste Rock
1.0 – 1.5	2	GM	Same as above	Waste Rock
1.5 – 2.0	3	GM	Gray brown, fine to coarse gravel with sand and silt, moist (fill)	Waste Rock
2.0 – 2.5	4	GM	Same as above	Waste Rock
2.5 – 3.0	5	GM	Same as above	Waste Rock



TEST PIT LOG

TEST PIT NO. UMT-3

Page ___1___ of ___1___

Grandview Mine SPLP Assessment	Client: Teck American Incorporated
URS Project No.: 36310068	Excavator Equipment: Shovel, pick, breaker bar
Location: Upper Mine Area	Date Excavated: 08/05/10
Prepared by: GDP	Lat/Longitude 48.87198N, -117.35771W NAD83
Date: 09/09/10	Sample ID UMPT-3-0.5-3.0


DEPTH	SUB SAMPLE #	ASTM (SOIL TYPE)	SAMPLE DESCRIPTION Color/Consistency/Moisture/other(grain size, shape etc)	NOTES/REMARKS
0.5 – 1.0	1	GM	Gray, fine to coarse gravel with sand and silt, dry (fill)	Waste Rock
1.0 – 1.5	2	GM	Same as above	Waste Rock
1.5 – 2.0	3	GM	Same as above	Waste Rock
2.0 – 2.5	4	GM	Same as above	Waste Rock
2.5 – 3.0	5	GM	Same as above	Waste Rock



TEST PIT LOG

TEST PIT NO. UMT-4

Page 1 of 1

Grandview Mine SPLP Assessment			Client: Teck American Incorporated	
URS Project No.: 36310068			Excavator Equipment: Shovel, hand auger	
Location: Upper Mine Area			Date Excavated: 08/05/10	
Prepared by: GDP			Lat/Longitude 48.87162N, -117.35766W NAD83	
Date: 09/09/10			Sample ID: UMT-4-0.5-1.0	
DEPTH	SUB SAMPLE #	ASTM (SOIL TYPE)	SAMPLE DESCRIPTION Color/Consistency/Moisture/other(grain size, shape etc)	NOTES/REMARKS
0.5- 0.8	1	GM	Gray, fine to coarse gravel with sand and silt, dry (fill)	Waste Rock
0.8 - 1.5	2	SM	Brown, silty sand, moist.	Native
				

APPENDIX C

LABORATORY ANALYTICAL REPORTS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Spokane
11922 East 1st. Avenue
Spokane, WA 99206
Tel: (509)924-9200

TestAmerica Job ID: STH0070

TestAmerica Sample Delivery Group: STH0070

Client Project/Site: 36310064

Client Project Description: Grandview Mine Assessment

For:

URS Corp.
920 N. Argonne Road Suite 300
Spokane, WA 99212

Attn: Gary Panther



Authorized for release by:
8/25/2010 4:14 PM

Randee Decker
Project Manager
Randee.Decker@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.



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Client Sample Results	5
QC Sample Results	6
Certification Summary	9
Method Summary	10
Chain of Custody	11

Sample Summary

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0070
SDG: STH0070

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
STH0070-01	MW-1-081810	Water	08/18/10 10:00	08/18/10 15:10

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

Qualifier Definition/Glossary

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0070
SDG: STH0070

Qualifiers

Metals

Qualifier	Qualifier Description
RL1	Reporting limit raised due to sample matrix effects.

Glossary

Glossary	Glossary Description
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis.

1

2

3

4

5

6

7

8

9

Analytical Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0070
SDG: STH0070

Client Sample ID: MW-1-081810

Lab Sample ID: STH0070-01

Date Collected: 08/18/10 10:00

Matrix: Water

Date Received: 08/18/10 15:10

Method: EPA 200.8 - Total Metals per EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 18:47	1.
Arsenic	ND	RL1	0.00500		mg/l		08/23/10 08:00	08/24/10 02:07	5.
Barium	0.0744		0.00100		mg/l		08/23/10 08:00	08/23/10 18:47	1.
Beryllium	ND		0.00200	0.000570	mg/l		08/23/10 08:00	08/23/10 18:47	1.
Cadmium	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 18:47	1.
Chromium	ND	RL1	0.0100		mg/l		08/23/10 08:00	08/24/10 02:07	5.
Copper	ND	RL1	0.0100		mg/l		08/23/10 08:00	08/24/10 02:07	5.
Lead	0.00116		0.00100		mg/l		08/23/10 08:00	08/23/10 18:47	1.
Selenium	0.0462		0.00500		mg/l		08/23/10 08:00	08/24/10 02:07	5.
Silver	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 18:47	1.
Zinc	ND	RL1	0.0500		mg/l		08/23/10 08:00	08/24/10 02:07	5.

Method: EPA 245.1 - Total Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200		ug/l		08/19/10 08:53	08/19/10 14:34	1

Quality Control Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0070
SDG: STH0070

Method: EPA 200.8 - Total Metals per EPA 200 Series Methods

Lab Sample ID: 10H0705-BLK1

Matrix: Water

Analysis Batch: 10H0705

Client Sample ID: 10H0705-BLK1

Prep Type: total

Prep Batch: 10H0705_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Arsenic	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Barium	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Beryllium	ND		0.00200	0.000570	mg/l		08/21/10 16:24	08/23/10 17:31	1
Cadmium	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Chromium	ND		0.00200		mg/l		08/21/10 16:24	08/23/10 17:31	1
Copper	ND		0.00200		mg/l		08/21/10 16:24	08/23/10 17:31	1
Lead	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Selenium	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Silver	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Zinc	ND		0.0100		mg/l		08/21/10 16:24	08/23/10 17:31	1

Lab Sample ID: 10H0705-BS1

Matrix: Water

Analysis Batch: 10H0705

Client Sample ID: 10H0705-BS1

Prep Type: total

Prep Batch: 10H0705_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Antimony	0.0500	0.0493		mg/l		98.6	85 - 115
Arsenic	0.100	0.0999		mg/l		99.9	85 - 115
Barium	0.100	0.102		mg/l		102	85 - 115
Beryllium	0.0500	0.0542		mg/l		108	85 - 115
Cadmium	0.100	0.0970		mg/l		97.0	85 - 115
Chromium	0.100	0.101		mg/l		101	85 - 115
Copper	0.100	0.0970		mg/l		97.0	85 - 115
Lead	0.100	0.103		mg/l		103	85 - 115
Selenium	0.100	0.0886		mg/l		88.6	85 - 115
Silver	0.0500	0.0512		mg/l		102	85 - 115
Zinc	0.100	0.0915		mg/l		91.5	85 - 115

Lab Sample ID: 10H0705-MS1

Matrix: Water

Analysis Batch: 10H0705

Client Sample ID: PTH0269-02

Prep Type: total

Prep Batch: 10H0705_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	% Rec	% Rec. Limits
Antimony			0.0500	0.0500		mg/l		99.8	70 - 130
Arsenic			0.100	0.103		mg/l		101	70 - 130
Barium			0.100	0.200		mg/l		100	70 - 130
Beryllium			0.0500	0.0506		mg/l		101	70 - 130
Cadmium			0.100	0.0988		mg/l		98.6	70 - 130
Chromium			0.100	0.108		mg/l		103	75 - 125
Copper			0.100	0.0986		mg/l		94.6	75 - 125
Lead			0.100	0.101		mg/l		98.0	75 - 125
Selenium			0.100	0.0944		mg/l		92.9	70 - 130
Silver			0.0500	0.0498		mg/l		99.5	70 - 130
Zinc			0.100	0.105		mg/l		92.1	70 - 130

Quality Control Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0070
SDG: STH0070

Method: EPA 200.8 - Total Metals per EPA 200 Series Methods (Continued)

Lab Sample ID: 10H0705-MS2

Matrix: Water

Analysis Batch: 10H0705

Client Sample ID: MW-1-081810

Prep Type: total

Prep Batch: 10H0705_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	% Rec	Limits
Antimony	ND		0.0500	0.0500		mg/l		100	70 - 130
Barium	0.0744		0.100	0.169		mg/l		94.3	70 - 130
Beryllium	ND		0.0500	0.0450		mg/l		90.1	70 - 130
Cadmium	ND		0.100	0.0967		mg/l		96.1	70 - 130
Lead	0.00116		0.100	0.0939		mg/l		92.8	75 - 125
Silver	ND		0.0500	0.0475		mg/l		94.9	70 - 130

Lab Sample ID: 10H0705-MS2

Matrix: Water

Analysis Batch: 10H0705

Client Sample ID: MW-1-081810

Prep Type: total

Prep Batch: 10H0705_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	% Rec	Limits
Arsenic	ND	RL1	0.100	0.0946		mg/l		94.6	70 - 130
Chromium	ND	RL1	0.100	0.0912		mg/l		91.2	75 - 125
Copper	ND	RL1	0.100	0.0911		mg/l		91.1	75 - 125
Selenium	0.0462		0.100	0.137		mg/l		91.1	70 - 130
Zinc	ND	RL1	0.100	0.131		mg/l		90.0	70 - 130

Lab Sample ID: 10H0705-DUP1

Matrix: Water

Analysis Batch: 10H0705

Client Sample ID: PTH0269-03

Prep Type: total

Prep Batch: 10H0705_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Antimony			ND		mg/l			20
Arsenic			0.000620		mg/l		13.8	20
Barium			0.102		mg/l		4.02	20
Beryllium			ND		mg/l			20
Cadmium			ND		mg/l			20
Chromium			0.00331		mg/l		3.56	20
Copper			ND		mg/l			20
Lead			0.000420		mg/l		6.90	20
Selenium			0.00119		mg/l		0.00	20
Silver			0.0000200		mg/l		0.00	20
Zinc			ND		mg/l			20

Method: EPA 245.1 - Total Metals by EPA 200 Series Methods

Lab Sample ID: 10H0084-BLK1

Matrix: Water

Analysis Batch: 10H0084

Client Sample ID: 10H0084-BLK1

Prep Type: total

Prep Batch: 10H0084_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200		ug/l		08/19/10 08:53	08/19/10 14:09	1

Lab Sample ID: 10H0084-BS1

Matrix: Water

Analysis Batch: 10H0084

Client Sample ID: 10H0084-BS1

Prep Type: total

Prep Batch: 10H0084_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	Limits
Mercury	1.00	1.04		ug/l		104	85 - 115

TestAmerica Spokane

Quality Control Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0070
SDG: STH0070

Method: EPA 245.1 - Total Metals by EPA 200 Series Methods (Continued)

Lab Sample ID: 10H0084-MS1

Matrix: Water

Analysis Batch: 10H0084

Client Sample ID: STH0048-38

Prep Type: total

Prep Batch: 10H0084_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	% Rec	Limits
Mercury	ND		1.00	1.18		ug/l		118	70 - 130

Lab Sample ID: 10H0084-MSD1

Matrix: Water

Analysis Batch: 10H0084

Client Sample ID: STH0048-38

Prep Type: total

Prep Batch: 10H0084_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	% Rec	Limits	RPD	Limit
Mercury	ND		1.00	1.14		ug/l		114	70 - 130	3.45	18.2

Lab Sample ID: 10H0084-DUP1

Matrix: Water

Analysis Batch: 10H0084

Client Sample ID: STH0048-38

Prep Type: total

Prep Batch: 10H0084_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Mercury	ND		ND		ug/l			17.1

Certification Summary

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0070
SDG: STH0070

Laboratory	Authority	Program	EPA Region	Certification ID	Expiration Date
TestAmerica Spokane	Alaska	State Program	10	UST-071	10/31/10
TestAmerica Spokane	Washington	State Program	10	C569	01/06/11
TestAmerica Portland		USDA		P330-07-XXXXXX	11/13/10
TestAmerica Portland	Alaska	State Program	10	OR00040	04/21/11
TestAmerica Portland	Alaska	State Program	10	UST-012	12/26/10
TestAmerica Portland	California	ELAP	9	2597	09/30/11
TestAmerica Portland	Oregon	NELAC Primary AB	10	OR100021	01/09/10
TestAmerica Portland	Washington	State Program	10	C1291	06/23/10

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0070
SDG: STH0070

Method	Method Description	Protocol	Laboratory
EPA 200.8	Total Metals per EPA 200 Series Methods		TAL PTL
EPA 245.1	Total Metals by EPA 200 Series Methods		TAL SPK

Protocol References:

=

Laboratory References:

TAL PTL = TestAmerica Portland, 9405 SW Nimbus Ave., Beaverton, OR 97008, TEL 503/906-9200
TAL SPK = TestAmerica Spokane, 11922 East 1st. Avenue, Spokane, WA 99206, TEL (509)924-9200

**TestAmerica Spokane
Sample Receipt Form**

Work Order #: STH0070	Client: URS	Project: Grandview Mine		
Date/Time Received: 8-18-10 15:10		By: C. Stapleton		
Samples Delivered By: <input type="checkbox"/> Shipping Service <input type="checkbox"/> Courier <input type="checkbox"/> Client <input type="checkbox"/> Other: _____				
List Air Bill Number(s) or Attach a photocopy of the Air Bill:				
Receipt Phase	Yes	No	NA	Comments
Were samples received in a cooler:	X			
Custody Seals are present and intact:			X	
Are CoC documents present:	X			
Necessary signatures:	X			
Thermal Preservation Type: <input type="checkbox"/> Blue Ice <input type="checkbox"/> Gel Ice <input checked="" type="checkbox"/> Real Ice <input type="checkbox"/> Dry Ice <input type="checkbox"/> Other: _____				
Temperature by IR Gun: 8.6 °C Thermometer Serial #81500 (acceptance criteria 0-6 °C)				
Temperature out of range: <input type="checkbox"/> Not enough ice <input type="checkbox"/> Ice melted <input type="checkbox"/> w/in 4hrs of collection <input type="checkbox"/> NA <input type="checkbox"/> Other: _____				
Log-In Phase	Yes	No	NA	Comments
Date/Time: 8-18-10 15:23 By: CA				
Are sample labels affixed and completed for each container	X			
Samples containers were received intact:	X			
Do sample IDs match the CoC	X			
Appropriate sample containers were received for tests requested	X			
Are sample volumes adequate for tests requested	X			
Appropriate preservatives were used for the tests requested	X			
pH of inorganic samples checked and is within method specification	X			
Are VOC samples free of bubbles >6mm (1/4" diameter)			X	
Are dissolved parameters field filtered			X	
Do any samples need to be filtered or preserved by the lab		X		
Does this project require quick turnaround analysis		X		
Are there any short hold time tests (see chart below)		X		
Are any samples within 2 days of or past expiration		X		
Was the CoC scanned	X			
Were there Non-conformance issues at login		X		
If yes, was a CAR generated #			X	

24 hours or less	48 hours	7 days
Coliform Bacteria	BOD, Color, MBAS	TDS, TSS, VDS, FDS
Chromium +6	Nitrate/Nitrite	Sulfide
	Orthophosphate	Aqueous Organic Prep

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244
11922 E. First Ave, Spokane, WA 99206-5302
9405 SW Nimbus Ave, Beaverton, OR 97008-7145
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

425-420-9200 FAX 420-9210
509-924-9200 FAX 924-9290
503-906-9200 FAX 906-9210
907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: 5TH0070

CLIENT: VRS Corp		INVOICE TO: VRS Corp		TURNAROUND REQUEST	
REPORT TO: GARY D. RAMMER				in Business Days *	
ADDRESS:				Organic & Inorganic Analyses	
PHONE: 509-954-5090		FAX:		7 5 4 3 2 1 <1	
PROJECT NAME: Groundwater in NE Groundwater Assessment				Petroleum Hydrocarbon Analyses	
PROJECT NUMBER: 3631 0064				5 4 3 2 1 <1	
SAMPLED BY: GDF				OTHER Specify:	
CLIENT SAMPLE IDENTIFICATION		SAMPLING DATE/TIME		MATRIX (W, S, O)	
1 MW-1-081810		08-18-10 10:00		W 1	
2 MW-1-081810		08-18-10 10:30		W 1	
3					
4					
5					
6					
7					
8					
9					
10					
RELEASED BY: [Signature]		DATE: 08-18-10		DATE: 8-18-10	
PRINT NAME: GARY D. RAMMER		FIRM: VRS Corp		FIRM: Test America	
RELEASED BY:		DATE: 15:10		DATE: 15:10	
PRINT NAME:		FIRM:		FIRM:	
RELEASED BY:		DATE:		DATE:	
PRINT NAME:		FIRM:		FIRM:	
ADDITIONAL REMARKS:		TEMP: 8.6		PAGE OF	
* Sb, As, BA, Be, Cd, Cu, Hg, Pb, Se, Zn, Ag, Cr				TAL: 1000(0408)	

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Spokane

11922 East 1st. Avenue

Spokane, WA 99206

Tel: (509)924-9200

TestAmerica Job ID: STH0028

TestAmerica Sample Delivery Group: STH0028

Client Project/Site: 36310064

Client Project Description: Grandview Mine Assessment

For:

URS Corp.

920 N. Argonne Road Suite 300

Spokane, WA 99212

Attn: Gary Panther



Authorized for release by:

8/25/2010 4:39 PM

Randee Decker

Project Manager

Randee.Decker@testamericainc.com

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www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.



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Sample Summary

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0028
SDG: STH0028

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
STH0028-01	MW-2-080510	Water	08/05/10 19:30	08/06/10 13:00
STH0028-02	MW-4-080610	Water	08/06/10 08:05	08/06/10 13:00
STH0028-03	MW-3-080610	Water	08/06/10 09:05	08/06/10 13:00
STH0028-04	DUP-080610	Water	08/06/10 00:00	08/06/10 13:00

Qualifier Definition/Glossary

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0028
SDG: STH0028

Glossary

Glossary	Glossary Description
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

Analytical Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0028
SDG: STH0028

Client Sample ID: MW-2-080510

Date Collected: 08/05/10 19:30

Date Received: 08/06/10 13:00

Lab Sample ID: STH0028-01

Matrix: Water

Method: EPA 200.8 - Total Metals per EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 17:38	1.
Arsenic	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 17:38	1.
Barium	0.0357		0.00100		mg/l		08/23/10 08:00	08/23/10 17:38	1.
Beryllium	ND		0.00200	0.000570	mg/l		08/23/10 08:00	08/23/10 17:38	1.
Cadmium	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 17:38	1.
Chromium	0.00203		0.00200		mg/l		08/23/10 08:00	08/23/10 17:38	1.
Copper	ND		0.00200		mg/l		08/23/10 08:00	08/23/10 17:38	1.
Lead	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 17:38	1.
Selenium	0.0213		0.00100		mg/l		08/23/10 08:00	08/23/10 17:38	1.
Silver	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 17:38	1.
Zinc	ND		0.0100		mg/l		08/23/10 08:00	08/23/10 17:38	1.

Method: EPA 245.1 - Total Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200		ug/l		08/09/10 07:45	08/09/10 14:14	1

Client Sample ID: MW-4-080610

Date Collected: 08/06/10 08:05

Date Received: 08/06/10 13:00

Lab Sample ID: STH0028-02

Matrix: Water

Method: EPA 200.8 - Total Metals per EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 17:42	1.
Arsenic	0.00181		0.00100		mg/l		08/23/10 08:00	08/23/10 17:42	1.
Barium	0.0990		0.00100		mg/l		08/23/10 08:00	08/23/10 17:42	1.
Beryllium	ND		0.00200	0.000570	mg/l		08/23/10 08:00	08/23/10 17:42	1.
Cadmium	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 17:42	1.
Chromium	0.00558		0.00200		mg/l		08/23/10 08:00	08/23/10 17:42	1.
Copper	0.00398		0.00200		mg/l		08/23/10 08:00	08/23/10 17:42	1.
Lead	0.00326		0.00100		mg/l		08/23/10 08:00	08/23/10 17:42	1.
Selenium	0.00157		0.00100		mg/l		08/23/10 08:00	08/23/10 17:42	1.
Silver	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 17:42	1.
Zinc	0.0133		0.0100		mg/l		08/23/10 08:00	08/23/10 17:42	1.

Method: EPA 245.1 - Total Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200		ug/l		08/09/10 07:45	08/09/10 14:16	1

Client Sample ID: MW-3-080610

Date Collected: 08/06/10 09:05

Date Received: 08/06/10 13:00

Lab Sample ID: STH0028-03

Matrix: Water

Method: EPA 200.8 - Total Metals per EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 17:54	1.
Arsenic	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 17:54	1.
Barium	0.106		0.00100		mg/l		08/23/10 08:00	08/23/10 17:54	1.
Beryllium	ND		0.00200	0.000570	mg/l		08/23/10 08:00	08/23/10 17:54	1.
Cadmium	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 17:54	1.
Chromium	0.00343		0.00200		mg/l		08/23/10 08:00	08/23/10 17:54	1.
Copper	ND		0.00200		mg/l		08/23/10 08:00	08/23/10 17:54	1.

TestAmerica Spokane

Analytical Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0028
SDG: STH0028

Client Sample ID: MW-3-080610

Lab Sample ID: STH0028-03

Date Collected: 08/06/10 09:05

Matrix: Water

Date Received: 08/06/10 13:00

Method: EPA 200.8 - Total Metals per EPA 200 Series Methods (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 17:54	1.
Selenium	0.00119		0.00100		mg/l		08/23/10 08:00	08/23/10 17:54	1.
Silver	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 17:54	1.
Zinc	ND		0.0100		mg/l		08/23/10 08:00	08/23/10 17:54	1.

Method: EPA 245.1 - Total Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200		ug/l		08/09/10 07:45	08/09/10 14:18	1

Client Sample ID: DUP-080610

Lab Sample ID: STH0028-04

Date Collected: 08/06/10 00:00

Matrix: Water

Date Received: 08/06/10 13:00

Method: EPA 200.8 - Total Metals per EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 18:01	1.
Arsenic	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 18:01	1.
Barium	0.104		0.00100		mg/l		08/23/10 08:00	08/23/10 18:01	1.
Beryllium	ND		0.00200	0.000570	mg/l		08/23/10 08:00	08/23/10 18:01	1.
Cadmium	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 18:01	1.
Chromium	0.00365		0.00200		mg/l		08/23/10 08:00	08/23/10 18:01	1.
Copper	ND		0.00200		mg/l		08/23/10 08:00	08/23/10 18:01	1.
Lead	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 18:01	1.
Selenium	0.00120		0.00100		mg/l		08/23/10 08:00	08/23/10 18:01	1.
Silver	ND		0.00100		mg/l		08/23/10 08:00	08/23/10 18:01	1.
Zinc	ND		0.0100		mg/l		08/23/10 08:00	08/23/10 18:01	1.

Method: EPA 245.1 - Total Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200		ug/l		08/09/10 07:45	08/09/10 14:21	1

Quality Control Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0028
SDG: STH0028

Method: EPA 200.8 - Total Metals per EPA 200 Series Methods

Lab Sample ID: 10H0705-BLK1

Matrix: Water

Analysis Batch: 10H0705

Client Sample ID: 10H0705-BLK1

Prep Type: total

Prep Batch: 10H0705_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Arsenic	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Barium	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Beryllium	ND		0.00200	0.000570	mg/l		08/21/10 16:24	08/23/10 17:31	1
Cadmium	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Chromium	ND		0.00200		mg/l		08/21/10 16:24	08/23/10 17:31	1
Copper	ND		0.00200		mg/l		08/21/10 16:24	08/23/10 17:31	1
Lead	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Selenium	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Silver	ND		0.00100		mg/l		08/21/10 16:24	08/23/10 17:31	1
Zinc	ND		0.0100		mg/l		08/21/10 16:24	08/23/10 17:31	1

Lab Sample ID: 10H0705-BS1

Matrix: Water

Analysis Batch: 10H0705

Client Sample ID: 10H0705-BS1

Prep Type: total

Prep Batch: 10H0705_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Antimony	0.0500	0.0493		mg/l		98.6	85 - 115
Arsenic	0.100	0.0999		mg/l		99.9	85 - 115
Barium	0.100	0.102		mg/l		102	85 - 115
Beryllium	0.0500	0.0542		mg/l		108	85 - 115
Cadmium	0.100	0.0970		mg/l		97.0	85 - 115
Chromium	0.100	0.101		mg/l		101	85 - 115
Copper	0.100	0.0970		mg/l		97.0	85 - 115
Lead	0.100	0.103		mg/l		103	85 - 115
Selenium	0.100	0.0886		mg/l		88.6	85 - 115
Silver	0.0500	0.0512		mg/l		102	85 - 115
Zinc	0.100	0.0915		mg/l		91.5	85 - 115

Lab Sample ID: 10H0705-MS1

Matrix: Water

Analysis Batch: 10H0705

Client Sample ID: MW-4-080610

Prep Type: total

Prep Batch: 10H0705_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	% Rec	% Rec. Limits
Antimony	ND		0.0500	0.0500		mg/l		99.8	70 - 130
Arsenic	0.00181		0.100	0.103		mg/l		101	70 - 130
Barium	0.0990		0.100	0.200		mg/l		100	70 - 130
Beryllium	ND		0.0500	0.0506		mg/l		101	70 - 130
Cadmium	ND		0.100	0.0988		mg/l		98.6	70 - 130
Chromium	0.00558		0.100	0.108		mg/l		103	75 - 125
Copper	0.00398		0.100	0.0986		mg/l		94.6	75 - 125
Lead	0.00326		0.100	0.101		mg/l		98.0	75 - 125
Selenium	0.00157		0.100	0.0944		mg/l		92.9	70 - 130
Silver	ND		0.0500	0.0498		mg/l		99.5	70 - 130
Zinc	0.0133		0.100	0.105		mg/l		92.1	70 - 130

Quality Control Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0028
SDG: STH0028

Method: EPA 200.8 - Total Metals per EPA 200 Series Methods (Continued)

Lab Sample ID: 10H0705-MS2

Matrix: Water

Analysis Batch: 10H0705

Client Sample ID: PTH0598-01

Prep Type: total

Prep Batch: 10H0705_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	% Rec	Limits
Antimony			0.0500	0.0500		mg/l		100	70 - 130
Barium			0.100	0.169		mg/l		94.3	70 - 130
Beryllium			0.0500	0.0450		mg/l		90.1	70 - 130
Cadmium			0.100	0.0967		mg/l		96.1	70 - 130
Lead			0.100	0.0939		mg/l		92.8	75 - 125
Silver			0.0500	0.0475		mg/l		94.9	70 - 130

Lab Sample ID: 10H0705-MS2

Matrix: Water

Analysis Batch: 10H0705

Client Sample ID: PTH0598-01

Prep Type: total

Prep Batch: 10H0705_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	% Rec	Limits
Arsenic			0.100	0.0946		mg/l		94.6	70 - 130
Chromium			0.100	0.0912		mg/l		91.2	75 - 125
Copper			0.100	0.0911		mg/l		91.1	75 - 125
Selenium			0.100	0.137		mg/l		91.1	70 - 130
Zinc			0.100	0.131		mg/l		90.0	70 - 130

Lab Sample ID: 10H0705-DUP1

Matrix: Water

Analysis Batch: 10H0705

Client Sample ID: MW-3-080610

Prep Type: total

Prep Batch: 10H0705_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Antimony	ND		ND		mg/l			20
Arsenic	ND		0.000620		mg/l		13.8	20
Barium	0.106		0.102		mg/l		4.02	20
Beryllium	ND		ND		mg/l			20
Cadmium	ND		ND		mg/l			20
Chromium	0.00343		0.00331		mg/l		3.56	20
Copper	ND		ND		mg/l			20
Lead	ND		0.000420		mg/l		6.90	20
Selenium	0.00119		0.00119		mg/l		0.00	20
Silver	ND		0.0000200		mg/l		0.00	20
Zinc	ND		ND		mg/l			20

Method: EPA 245.1 - Total Metals by EPA 200 Series Methods

Lab Sample ID: 10H0034-BLK1

Matrix: Water

Analysis Batch: 10H0034

Client Sample ID: 10H0034-BLK1

Prep Type: total

Prep Batch: 10H0034_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.200		ug/l		08/09/10 07:45	08/09/10 14:07	1

Lab Sample ID: 10H0034-BS1

Matrix: Water

Analysis Batch: 10H0034

Client Sample ID: 10H0034-BS1

Prep Type: total

Prep Batch: 10H0034_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	Limits
Mercury	1.00	0.891		ug/l		89.1	85 - 115

TestAmerica Spokane

Quality Control Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0028
SDG: STH0028

Method: EPA 245.1 - Total Metals by EPA 200 Series Methods (Continued)

Lab Sample ID: 10H0034-MS1

Matrix: Water

Analysis Batch: 10H0034

Client Sample ID: DUP-080610

Prep Type: total

Prep Batch: 10H0034_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	% Rec	Limits
Mercury	ND		1.00	0.878		ug/l		87.8	70 - 130

Lab Sample ID: 10H0034-MSD1

Matrix: Water

Analysis Batch: 10H0034

Client Sample ID: DUP-080610

Prep Type: total

Prep Batch: 10H0034_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	% Rec	Limits	RPD	Limit
Mercury	ND		1.00	0.847		ug/l		84.7	70 - 130	3.59	18.2

Lab Sample ID: 10H0034-DUP1

Matrix: Water

Analysis Batch: 10H0034

Client Sample ID: DUP-080610

Prep Type: total

Prep Batch: 10H0034_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Mercury	ND		ND		ug/l			17.1

Certification Summary

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0028
SDG: STH0028

Laboratory	Authority	Program	EPA Region	Certification ID	Expiration Date
TestAmerica Spokane	Alaska	State Program	10	UST-071	10/31/10
TestAmerica Spokane	Washington	State Program	10	C569	01/06/11
TestAmerica Portland		USDA		P330-07-XXXXXX	11/13/10
TestAmerica Portland	Alaska	State Program	10	OR00040	04/21/11
TestAmerica Portland	Alaska	State Program	10	UST-012	12/26/10
TestAmerica Portland	California	ELAP	9	2597	09/30/11
TestAmerica Portland	Oregon	NELAC Primary AB	10	OR100021	01/09/10
TestAmerica Portland	Washington	State Program	10	C1291	06/23/10

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0028
SDG: STH0028

Method	Method Description	Protocol	Laboratory
EPA 200.8	Total Metals per EPA 200 Series Methods		TAL PTL
EPA 245.1	Total Metals by EPA 200 Series Methods		TAL SPK

Protocol References:

=

Laboratory References:

TAL PTL = TestAmerica Portland, 9405 SW Nimbus Ave., Beaverton, OR 97008, TEL 503/906-9200
TAL SPK = TestAmerica Spokane, 11922 East 1st. Avenue, Spokane, WA 99206, TEL (509)924-9200



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244
11922 E. First Ave, Spokane, WA 99206-5302
9405 SW Nimbus Ave, Beaverton, OR 97008-7145
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

425-420-9200 FAX 420-9210
509-924-9200 FAX 924-9290
503-906-9200 FAX 906-9210
907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #:

CLIENT: <u>UPS</u>		INVOICE TO: <u>UPS Corp</u>																																													
REPORT TO: <u>SAN PANTHER</u>		PRESERVATIVE																																													
ADDRESS:		P.O. NUMBER:																																													
PHONE: <u>509-924-9200</u> FAX:		REQUESTED ANALYSES																																													
PROJECT NAME: <u>Grandview mine Assessment</u>		OTHER																																													
PROJECT NUMBER: <u>36310064</u>		<input checked="" type="checkbox"/> Organic & Inorganic Analyses <input type="checkbox"/> Petroleum Hydrocarbon Analyses <input type="checkbox"/> STD.																																													
SAMPLED BY: <u>GOP</u>		In Business Days* <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1																																													
CLIENT SAMPLE IDENTIFICATION		TURNAROUND REQUEST																																													
<table border="1"> <thead> <tr> <th>SAMPLE ID</th> <th>SAMPLING DATE/TIME</th> <th>ANALYSIS</th> <th>REMARKS</th> </tr> </thead> <tbody> <tr> <td>1 MW-2-080510</td> <td>080510 19:30</td> <td>X</td> <td></td> </tr> <tr> <td>2 MW-4-080610</td> <td>080610 08:05</td> <td>X</td> <td></td> </tr> <tr> <td>3 MW-3-080610</td> <td>080610 09:05</td> <td>X</td> <td></td> </tr> <tr> <td>4 Dup-080610</td> <td>080610</td> <td>X</td> <td></td> </tr> <tr><td>5</td><td></td><td></td><td></td></tr> <tr><td>6</td><td></td><td></td><td></td></tr> <tr><td>7</td><td></td><td></td><td></td></tr> <tr><td>8</td><td></td><td></td><td></td></tr> <tr><td>9</td><td></td><td></td><td></td></tr> <tr><td>10</td><td></td><td></td><td></td></tr> </tbody> </table>		SAMPLE ID	SAMPLING DATE/TIME	ANALYSIS	REMARKS	1 MW-2-080510	080510 19:30	X		2 MW-4-080610	080610 08:05	X		3 MW-3-080610	080610 09:05	X		4 Dup-080610	080610	X		5				6				7				8				9				10				* Turnaround Request less than standard may incur Rush Charges. OTHER Specify:	
SAMPLE ID	SAMPLING DATE/TIME	ANALYSIS	REMARKS																																												
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RELEASED BY: <u>[Signature]</u>		RECEIVED BY: <u>[Signature]</u>																																													
PRINT NAME: <u>SAN PANTHER</u>		PRINT NAME: <u>Christine Stephens</u>																																													
FIRM: <u>UPS</u>		FIRM: <u>Test America</u>																																													
DATE: <u>8/20/08</u>		DATE: <u>8-26-08</u>																																													
TIME: <u>13:00</u>		TIME: <u>13:00</u>																																													
ADDITIONAL REMARKS:		DATE: <u>8-26-08</u>																																													
<u>X Sb, As, Ba, Be, Cd, Cu, Hg, Pb, Se, Zn, As Cr</u>		TIME: <u>13:00</u>																																													

TAL-1000(0408)

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Spokane
11922 East 1st. Avenue
Spokane, WA 99206
Tel: (509)924-9200

TestAmerica Job ID: STH0029

TestAmerica Sample Delivery Group: STH0029

Client Project/Site: 36310064

Client Project Description: Grandview Mine Assessment

For:

URS Corp.
920 N. Argonne Road Suite 300
Spokane, WA 99212

Attn: Gary Panther



Authorized for release by:
9/8/2010 1:50 PM

Randee Decker
Project Manager
Randee.Decker@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

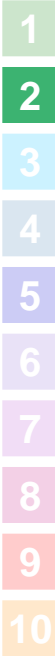


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Case Narrative

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Notes

Receipt

All samples were received in good condition.

Metals

Method 1312/6020:

The method blank for copper in batch 10H0571 had a hit at 0.0108 mg/kg. Per EPA method 6020 if a method blank has a hit that is greater than one half the method reporting limit it is over the acceptable limits. The samples associated with this batch were ND, therefore the data was not impacted.

No other analytical or quality issues were noted.

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Sample Summary

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
STH0029-01	LMSB-5-0.5-10.5	Soil	08/03/10 08:30	08/06/10 13:00
STH0029-02	LMTP-1-0.5-3.0	Soil	08/03/10 11:45	08/06/10 13:00
STH0029-03	LMTP-2-0.5-3.0	Soil	08/03/10 12:30	08/06/10 13:00
STH0029-04	LMPT-3-0.5-3.0	Soil	08/03/10 10:00	08/06/10 13:00
STH0029-05	LMPT-4-0.5-3.0	Soil	08/03/10 10:30	08/06/10 13:00
STH0029-06	TASB-4-5.0-14.0	Soil	08/04/10 15:30	08/06/10 13:00
STH0029-07	TAHA-1-0.5-2.0	Soil	08/04/10 08:30	08/06/10 13:00
STH0029-08	TAHA-2-0.5-2.0	Soil	08/04/10 09:15	08/06/10 13:00
STH0029-09	UMTP-1-0.5-2.7	Soil	08/05/10 14:00	08/06/10 13:00
STH0029-10	UMTP-2-0.5-3.0	Soil	08/05/10 11:00	08/06/10 13:00
STH0029-11	UMTP-3-0.5-3.0	Soil	08/05/10 10:05	08/06/10 13:00
STH0029-12	UMTP-4-0.5-1.0	Soil	08/05/10 07:30	08/06/10 13:00
STH0029-13	TAHA-3-3.0-6.0	Soil	08/04/10 10:25	08/06/10 13:00

Qualifier Definition/Glossary

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Qualifiers

Metals

Qualifier	Qualifier Description
B4	Target analyte detected in blank at/above method acceptance criteria.
J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

Glossary

Glossary	Glossary Description
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis.

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Analytical Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Client Sample ID: LMSB-5-0.5-10.5

Lab Sample ID: STH0029-01

Date Collected: 08/03/10 08:30

Matrix: Soil

Date Received: 08/06/10 13:00

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00680	J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 14:12	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:12	10
Barium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:12	10
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 22:39	10
Cadmium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:12	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:12	10
Copper	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:12	10
Lead	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:12	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:12	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:12	10
Zinc	ND		0.100		mg/l		08/17/10 22:04	08/18/10 14:12	10

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 10:10	1

Client Sample ID: LMTP-1-0.5-3.0

Lab Sample ID: STH0029-02

Date Collected: 08/03/10 11:45

Matrix: Soil

Date Received: 08/06/10 13:00

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00670	J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 14:24	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:24	10
Barium	0.0139		0.0100		mg/l		08/17/10 22:04	08/18/10 14:24	10
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 22:51	10
Cadmium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:24	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:24	10
Copper	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:24	10
Lead	0.128		0.0100		mg/l		08/17/10 22:04	08/18/10 14:24	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:24	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:24	10
Zinc	ND		0.100		mg/l		08/17/10 22:04	08/18/10 14:24	10

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 10:13	1

Client Sample ID: LMTP-2-0.5-3.0

Lab Sample ID: STH0029-03

Date Collected: 08/03/10 12:30

Matrix: Soil

Date Received: 08/06/10 13:00

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00600	J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 14:28	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:28	10
Barium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:28	10
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 22:55	10
Cadmium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:28	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:28	10
Copper	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:28	10

TestAmerica Spokane

Analytical Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Client Sample ID: LMTP-2-0.5-3.0

Date Collected: 08/03/10 12:30

Date Received: 08/06/10 13:00

Lab Sample ID: STH0029-03

Matrix: Soil

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:28	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:28	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:28	10
Zinc	ND		0.100		mg/l		08/17/10 22:04	08/18/10 14:28	10

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 10:15	1

Client Sample ID: LMPT-3-0.5-3.0

Date Collected: 08/03/10 10:00

Date Received: 08/06/10 13:00

Lab Sample ID: STH0029-04

Matrix: Soil

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00730	J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 14:31	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:31	10
Barium	0.0921		0.0100		mg/l		08/17/10 22:04	08/18/10 14:31	10
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 22:59	10
Cadmium	0.0279		0.0100		mg/l		08/17/10 22:04	08/18/10 14:31	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:31	10
Copper	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:31	10
Lead	0.141		0.0100		mg/l		08/17/10 22:04	08/18/10 14:31	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:31	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:31	10
Zinc	3.26		0.100		mg/l		08/17/10 22:04	08/18/10 14:31	10

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 10:18	1

Client Sample ID: LMPT-4-0.5.-3.0

Date Collected: 08/03/10 10:30

Date Received: 08/06/10 13:00

Lab Sample ID: STH0029-05

Matrix: Soil

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00620	J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 14:35	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:35	10
Barium	0.0313		0.0100		mg/l		08/17/10 22:04	08/18/10 14:35	10
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 23:03	10
Cadmium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:35	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:35	10
Copper	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:35	10
Lead	0.0948		0.0100		mg/l		08/17/10 22:04	08/18/10 14:35	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:35	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:35	10
Zinc	ND		0.100		mg/l		08/17/10 22:04	08/18/10 14:35	10

Analytical Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Client Sample ID: LMPT-4-0.5.-3.0

Date Collected: 08/03/10 10:30

Date Received: 08/06/10 13:00

Lab Sample ID: STH0029-05

Matrix: Soil

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 10:20	1

Client Sample ID: TASB-4-5.0-14.0

Date Collected: 08/04/10 15:30

Date Received: 08/06/10 13:00

Lab Sample ID: STH0029-06

Matrix: Soil

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00580	J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 14:48	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:48	10
Barium	0.0276		0.0100		mg/l		08/17/10 22:04	08/18/10 14:48	10
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 23:14	10
Cadmium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:48	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:48	10
Copper	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:48	10
Lead	0.0243		0.0100		mg/l		08/17/10 22:04	08/18/10 14:48	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:48	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:48	10
Zinc	0.241		0.100		mg/l		08/17/10 22:04	08/18/10 14:48	10

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 10:28	1

Client Sample ID: TAHA-1-0.5-2.0

Date Collected: 08/04/10 08:30

Date Received: 08/06/10 13:00

Lab Sample ID: STH0029-07

Matrix: Soil

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00350	J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 14:52	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:52	10
Barium	0.0281		0.0100		mg/l		08/17/10 22:04	08/18/10 14:52	10
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 23:18	10
Cadmium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:52	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:52	10
Copper	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:52	10
Lead	0.0330		0.0100		mg/l		08/17/10 22:04	08/18/10 14:52	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:52	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:52	10
Zinc	ND		0.100		mg/l		08/17/10 22:04	08/18/10 14:52	10

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 10:31	1

TestAmerica Spokane

Analytical Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Client Sample ID: TAHA-2-0.5-2.0

Date Collected: 08/04/10 09:15

Date Received: 08/06/10 13:00

Lab Sample ID: STH0029-08

Matrix: Soil

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00320	J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 14:56	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:56	10
Barium	0.0132		0.0100		mg/l		08/17/10 22:04	08/18/10 14:56	10
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 23:22	10
Cadmium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:56	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:56	10
Copper	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:56	10
Lead	0.0463		0.0100		mg/l		08/17/10 22:04	08/18/10 14:56	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:56	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:56	10
Zinc	0.167		0.100		mg/l		08/17/10 22:04	08/18/10 14:56	10

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 10:33	1

Client Sample ID: UMTF-1-0.5-2.7

Date Collected: 08/05/10 14:00

Date Received: 08/06/10 13:00

Lab Sample ID: STH0029-09

Matrix: Soil

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00590	J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 15:00	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:00	10
Barium	0.0120		0.0100		mg/l		08/17/10 22:04	08/18/10 15:00	10
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 23:26	10
Cadmium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:00	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 15:00	10
Copper	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 15:00	10
Lead	0.0672		0.0100		mg/l		08/17/10 22:04	08/18/10 15:00	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:00	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:00	10
Zinc	ND		0.100		mg/l		08/17/10 22:04	08/18/10 15:00	10

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 10:36	1

Client Sample ID: UMTF-2-0.5-3.0

Date Collected: 08/05/10 11:00

Date Received: 08/06/10 13:00

Lab Sample ID: STH0029-10

Matrix: Soil

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00650	J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 15:04	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:04	10
Barium	0.0817		0.0100		mg/l		08/17/10 22:04	08/18/10 15:04	10
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 23:30	10
Cadmium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:04	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 15:04	10
Copper	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 15:04	10

TestAmerica Spokane

Analytical Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Client Sample ID: UMT-2-0.5-3.0

Lab Sample ID: STH0029-10

Date Collected: 08/05/10 11:00

Matrix: Soil

Date Received: 08/06/10 13:00

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.150		0.0100		mg/l		08/17/10 22:04	08/18/10 15:04	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:04	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:04	10
Zinc	0.110		0.100		mg/l		08/17/10 22:04	08/18/10 15:04	10

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 10:38	1

Client Sample ID: UMT-3-0.5-3.0

Lab Sample ID: STH0029-11

Date Collected: 08/05/10 10:05

Matrix: Soil

Date Received: 08/06/10 13:00

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00570	J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 15:08	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:08	10
Barium	0.0987		0.0100		mg/l		08/17/10 22:04	08/18/10 15:08	10
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 23:34	10
Cadmium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:08	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 15:08	10
Copper	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 15:08	10
Lead	0.0226		0.0100		mg/l		08/17/10 22:04	08/18/10 15:08	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:08	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:08	10
Zinc	ND		0.100		mg/l		08/17/10 22:04	08/18/10 15:08	10

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 10:41	1

Client Sample ID: UMT-4-0.5-1.0

Lab Sample ID: STH0029-12

Date Collected: 08/05/10 07:30

Matrix: Soil

Date Received: 08/06/10 13:00

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00670	J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 15:15	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:15	10
Barium	0.0337		0.0100		mg/l		08/17/10 22:04	08/18/10 15:15	10
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 23:42	10
Cadmium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:15	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 15:15	10
Copper	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 15:15	10
Lead	0.0720		0.0100		mg/l		08/17/10 22:04	08/18/10 15:15	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:15	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:15	10
Zinc	ND		0.100		mg/l		08/17/10 22:04	08/18/10 15:15	10

TestAmerica Spokane

Analytical Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Client Sample ID: UMT-4-0.5-1.0

Date Collected: 08/05/10 07:30

Date Received: 08/06/10 13:00

Lab Sample ID: STH0029-12

Matrix: Soil

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 10:43	1

Client Sample ID: TAHA-3-3.0-6.0

Date Collected: 08/04/10 10:25

Date Received: 08/06/10 13:00

Lab Sample ID: STH0029-13

Matrix: Soil

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00620	J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 15:19	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:19	10
Barium	0.0230		0.0100		mg/l		08/17/10 22:04	08/18/10 15:19	10
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 23:46	10
Cadmium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:19	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 15:19	10
Copper	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 15:19	10
Lead	0.104		0.0100		mg/l		08/17/10 22:04	08/18/10 15:19	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:19	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 15:19	10
Zinc	0.699		0.100		mg/l		08/17/10 22:04	08/18/10 15:19	10

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 10:46	1

Quality Control Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods

Lab Sample ID: 10H0571-BLK1

Matrix: Soil

Analysis Batch: 10H0571

Client Sample ID: 10H0571-BLK1

Prep Type: total

Prep Batch: 10H0571_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00590	B4, J	0.0100	0.000500	mg/l		08/17/10 22:04	08/18/10 14:04	10
Arsenic	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:04	10
Barium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:04	10
Cadmium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:04	10
Chromium	ND		0.0200		mg/l		08/17/10 22:04	08/18/10 14:04	10
Copper	ND	B4	0.0200		mg/l		08/17/10 22:04	08/18/10 14:04	10
Lead	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:04	10
Selenium	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:04	10
Silver	ND		0.0100		mg/l		08/17/10 22:04	08/18/10 14:04	10
Zinc	ND		0.100		mg/l		08/17/10 22:04	08/18/10 14:04	10

Lab Sample ID: 10H0571-BLK1

Matrix: Soil

Analysis Batch: 10H0571

Client Sample ID: 10H0571-BLK1

Prep Type: total

Prep Batch: 10H0571_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0200	0.00570	mg/l		08/17/10 22:04	08/18/10 22:31	10

Lab Sample ID: 10H0571-BS1

Matrix: Soil

Analysis Batch: 10H0571

Client Sample ID: 10H0571-BS1

Prep Type: total

Prep Batch: 10H0571_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Antimony	0.500	0.485		mg/l		97.0	80 - 120
Arsenic	1.00	0.964		mg/l		96.4	80 - 120
Barium	1.00	0.929		mg/l		92.9	80 - 120
Cadmium	1.00	0.977		mg/l		97.7	80 - 120
Chromium	1.00	0.968		mg/l		96.8	80 - 120
Copper	1.00	0.966		mg/l		96.6	80 - 120
Lead	1.00	0.972		mg/l		97.2	80 - 120
Selenium	1.00	0.964		mg/l		96.4	80 - 120
Silver	0.500	0.471		mg/l		94.1	80 - 120
Zinc	1.00	0.968		mg/l		96.8	80 - 120

Lab Sample ID: 10H0571-BS1

Matrix: Soil

Analysis Batch: 10H0571

Client Sample ID: 10H0571-BS1

Prep Type: total

Prep Batch: 10H0571_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Beryllium	0.500	0.490		mg/l		97.9	80 - 120

Lab Sample ID: 10H0571-MS1

Matrix: Soil

Analysis Batch: 10H0571

Client Sample ID: LMSB-5-0.5-10.5

Prep Type: total

Prep Batch: 10H0571_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	% Rec	% Rec. Limits
Antimony	0.00680	J	0.500	0.497		mg/l		98.0	75 - 125
Arsenic	ND		1.00	0.973		mg/l		97.3	75 - 125
Barium	ND		1.00	0.945		mg/l		94.5	75 - 125
Cadmium	ND		1.00	0.994		mg/l		99.4	75 - 125

TestAmerica Spokane

Quality Control Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Method: 1312/6020 - SPLP Metals per EPA 1312/6000/7000 Series Methods (Continued)

Lab Sample ID: 10H0571-MS1

Matrix: Soil

Analysis Batch: 10H0571

Client Sample ID: LMSB-5-0.5-10.5

Prep Type: total

Prep Batch: 10H0571_P

Analyte	Sample	Sample	Spike	Matrix Spike	Matrix Spike	Unit	D	% Rec	% Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	
Chromium	ND		1.00	0.971		mg/l		97.1	75 - 125	
Copper	ND		1.00	0.976		mg/l		96.4	75 - 125	
Lead	ND		1.00	0.998		mg/l		99.5	75 - 125	
Selenium	ND		1.00	0.998		mg/l		99.7	75 - 125	
Silver	ND		0.500	0.486		mg/l		97.1	75 - 125	
Zinc	ND		1.00	0.993		mg/l		99.3	75 - 125	

Lab Sample ID: 10H0571-MS1

Matrix: Soil

Analysis Batch: 10H0571

Client Sample ID: LMSB-5-0.5-10.5

Prep Type: total

Prep Batch: 10H0571_P

Analyte	Sample	Sample	Spike	Matrix Spike	Matrix Spike	Unit	D	% Rec	% Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	
Beryllium	ND		0.500	0.507		mg/l		101	75 - 125	

Lab Sample ID: 10H0571-MS2

Matrix: Soil

Analysis Batch: 10H0571

Client Sample ID: UMTF-3-0.5-3.0

Prep Type: total

Prep Batch: 10H0571_P

Analyte	Sample	Sample	Spike	Matrix Spike	Matrix Spike	Unit	D	% Rec	% Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	
Antimony	0.00570	J	0.500	0.483		mg/l		95.5	75 - 125	
Arsenic	ND		1.00	0.976		mg/l		97.6	75 - 125	
Barium	0.0987		1.00	1.04		mg/l		94.1	75 - 125	
Cadmium	ND		1.00	0.984		mg/l		98.4	75 - 125	
Chromium	ND		1.00	0.984		mg/l		98.4	75 - 125	
Copper	ND		1.00	0.981		mg/l		96.9	75 - 125	
Lead	0.0226		1.00	1.08		mg/l		106	75 - 125	
Selenium	ND		1.00	0.979		mg/l		97.9	75 - 125	
Silver	ND		0.500	0.482		mg/l		96.4	75 - 125	
Zinc	ND		1.00	1.10		mg/l		110	75 - 125	

Lab Sample ID: 10H0571-MS2

Matrix: Soil

Analysis Batch: 10H0571

Client Sample ID: UMTF-3-0.5-3.0

Prep Type: total

Prep Batch: 10H0571_P

Analyte	Sample	Sample	Spike	Matrix Spike	Matrix Spike	Unit	D	% Rec	% Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	
Beryllium	ND		0.500	0.501		mg/l		100	75 - 125	

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A

Lab Sample ID: 10H0596-BLK1

Matrix: Soil

Analysis Batch: T002598

Client Sample ID: 10H0596-BLK1

Prep Type: total

Prep Batch: 10H0596_P

Analyte	Blank	Blank	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.000200		mg/l		08/18/10 12:47	08/19/10 09:57	1

Quality Control Data

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Method: 1312/7470A - SPLP Mercury per EPA Methods 1312/7470A (Continued)

Lab Sample ID: 10H0596-BS1

Matrix: Soil

Analysis Batch: T002598

Client Sample ID: 10H0596-BS1

Prep Type: total

Prep Batch: 10H0596_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits
Mercury	0.00500	0.00514		mg/l		103	85 - 115

Lab Sample ID: 10H0596-BSD1

Matrix: Soil

Analysis Batch: T002598

Client Sample ID: 10H0596-BSD1

Prep Type: total

Prep Batch: 10H0596_P

Analyte	Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Mercury	0.00500	0.00506		mg/l		101	85 - 115	1.65	20

Lab Sample ID: 10H0596-MS1

Matrix: Soil

Analysis Batch: T002598

Client Sample ID: LMSB-5-0.5-10.5

Prep Type: total

Prep Batch: 10H0596_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	% Rec	% Rec. Limits
Mercury	ND		0.00500	0.00502		mg/l		100	75 - 125

Lab Sample ID: 10H0596-DUP1

Matrix: Soil

Analysis Batch: T002598

Client Sample ID: LMSB-5-0.5-10.5

Prep Type: total

Prep Batch: 10H0596_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Mercury	ND		ND		mg/l					20

Certification Summary

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Laboratory	Authority	Program	EPA Region	Certification ID	Expiration Date
TestAmerica Portland		USDA		P330-07-XXXXXX	11/13/10
TestAmerica Portland	Alaska	State Program	10	OR00040	04/21/11
TestAmerica Portland	Alaska	State Program	10	UST-012	12/26/10
TestAmerica Portland	California	ELAP	9	2597	09/30/11
TestAmerica Portland	Oregon	NELAC Primary AB	10	OR100021	01/09/11
TestAmerica Portland	Washington	State Program	10	C586	06/23/11

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

Client: URS Corp.
Project/Site: 36310064

TestAmerica Job ID: STH0029
SDG: STH0029

Method	Method Description	Protocol	Laboratory
1312/6020	SPLP Metals per EPA 1312/6000/7000 Series Methods		TAL PTL
1312/7470A	SPLP Mercury per EPA Methods 1312/7470A		TAL PTL

Protocol References:

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Laboratory References:

TAL PTL = TestAmerica Portland, 9405 SW Nimbus Ave., Beaverton, OR 97008, TEL 503/906-9200

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**TestAmerica Spokane
Sample Receipt Form**

Work Order #: STH0629 Client: URS Project: Grandview Mine Assessment

Date/Time Received: 8-6-10 13:00 By: Pat Stapleton

Samples Delivered By: ☐ Shipping Service ☐ Courier ☐ Client ☐ Other: _____

List Air Bill Number(s) or Attach a photocopy of the Air Bill:

Receipt Phase	Yes	No	NA	Comments
Were samples received in a cooler:	<input checked="" type="checkbox"/>			
Custody Seals are present and intact:			<input checked="" type="checkbox"/>	
Are CoC documents present:	<input checked="" type="checkbox"/>			
Necessary signatures:	<input checked="" type="checkbox"/>			

Thermal Preservation Type: ☐ Blue Ice ☐ Gel Ice ☒ Real Ice ☐ Dry Ice ☐ Other: _____

Temperature by IR Gun: 10.4 °C Thermometer Serial #81500 (acceptance criteria 0-6 °C)

Temperature out of range: ☐ Not enough ice ☐ Ice melted ☐ w/in 4hrs of collection ☐ NA ☐ Other: _____

Log-in Phase	Yes	No	NA	Comments
Date/Time: <u>8-6-10 14:02</u> By: <u>RS</u>				
Are sample labels affixed and completed for each container	<input checked="" type="checkbox"/>			
Samples containers were received intact:	<input checked="" type="checkbox"/>			
Do sample IDs match the CoC	<input checked="" type="checkbox"/>			
Appropriate sample containers were received for tests requested	<input checked="" type="checkbox"/>			
Are sample volumes adequate for tests requested	<input checked="" type="checkbox"/>			
Appropriate preservatives were used for the tests requested	<input checked="" type="checkbox"/>			
pH of inorganic samples checked and is within method specification			<input checked="" type="checkbox"/>	
Are VOC samples free of bubbles >6mm (1/4" diameter)			<input checked="" type="checkbox"/>	
Are dissolved parameters field filtered			<input checked="" type="checkbox"/>	
Do any samples need to be filtered or preserved by the lab		<input checked="" type="checkbox"/>		
Does this project require quick turnaround analysis		<input checked="" type="checkbox"/>		
Are there any short hold time tests (see chart below)		<input checked="" type="checkbox"/>		
Are any samples within 2 days of or past expiration		<input checked="" type="checkbox"/>		
Was the CoC scanned	<input checked="" type="checkbox"/>			
Were there Non-conformance issues at login		<input checked="" type="checkbox"/>		
If yes, was a CAR generated #			<input checked="" type="checkbox"/>	

24 hours or less	48 hours	7 days
Coliform Bacteria	BOD, Color, MBAS	TDS, TSS, VDS, FDS
Chromium +6	Nitrate/Nitrite	Sulfide
	Orthophosphate	Aqueous Organic Prep

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244
 11922 E. First Ave, Spokane, WA 99206-5302
 9405 SW Nimbus Ave, Beaverton, OR 97008-7145
 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

425-420-9200 FAX 420-9210
 509-924-9200 FAX 924-9290
 503-906-9200 FAX 906-9210
 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order # **STH00089**

CLIENT: URS Corp		INVOICE TO: URS Corp		TURNAROUND REQUEST	
REPORT TO: GARY PANTHEK		ADDRESS:		<input checked="" type="checkbox"/> Organic & Inorganic Analyses <input type="checkbox"/> Petrochem Hydrocarbon Analyses <input type="checkbox"/> STD.	
PHONE: 509-954-5090 FAX:		P.O. NUMBER:		<input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1	
PROJECT NAME: Grandview mine ASSESSMENT		PRESERVATIVE		<input type="checkbox"/> OTHER Specify:	
PROJECT NUMBER: 36310064		REQUESTED ANALYSES		* Turnaround Requests less than standard may incur Rush Charges.	
SAMPLED BY: GOP		SAMPLING DATE/TIME		MATRIX (W, S, O) # OF CONT. LOCATION/ COMMENTS TA WO ID	
1. LM5B-5-0.5-10.5		080310 08:30		S 1	
2. LMTP-1-0.5-3.0		080310 11:45		S 2	
3. LMTP-2-0.5-3.0		080310 12:30		S 2	
4. LMPT-3-0.5-3.0		080310 10:00		S 2	
5. LMTP-4-0.5-3.0		080310 10:30		S 2	
6. TASB-4-5.0-14.0		080410 15:30		S 2	
7. TAHA-1-0.5-2.0		080410 08:30		S 2	
8. TAHA-2-0.5-2.0		080410 09:15		S 2	
9. UMTP-1-0.5-2.7		080510 14:00		S 2	
10. UMTP-2-0.5-3.0		080510 11:00		S	
RELEASED BY: Gary D. Pantheke		DATE: 080610 TIME: 17:00		RECEIVED BY: Johnnie Johnston DATE: 8-6-10 PRINT NAME: Johnnie Johnston FIRM: Test America TIME: 13:00	
PRINT NAME: GARY D. PANTHEK		FIRM: URS Corp		RECEIVED BY: DATE: TIME: PRINT NAME: FIRM:	
ADDITIONAL REMARKS:		* Sb, As, Ba, Be, Cd, Cu, Hg, Pb, Se, Zn, Ag, Cr By EPA method 1312		TEMP: 10.4 PAGE 4 OF 4 TAL-1000(0408)	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244
11922 E. First Ave, Spokane, WA 99206-5302
9405 SW Nimbus Ave, Beaverton, OR 97008-7145
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

425-420-9200 FAX 420-9210
509-924-9200 FAX 924-9290
503-906-9200 FAX 906-9210
907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: **STH0029**

CLIENT: URS Corp		INVOICE TO: URS Corp		TURNAROUND REQUEST		
REPORT TO: GARY FARMER		ADDRESS:		in Business Days *		
PHONE: 509.954-5090 FAX:		P.O. NUMBER:		<input checked="" type="checkbox"/> Organic & Inorganic Analyses <input type="checkbox"/> Petroleum Hydrocarbon Analyses		
PROJECT NAME: Granoville mine Assessment		PRESERVATIVE:		STD. <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1		
PROJECT NUMBER: 36310064		REQUESTED ANALYSES:		STD. <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1		
SAMPLED BY: GOP		SPLP METALS <input checked="" type="checkbox"/>		OTHER Specify:		
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	MATRIX (W, S, O)		# OF CONT.	LOCATION/ COMMENTS	TA WO ID.
1. UMTR-3-0.5-3.0	080510 10:05	S		2		
2. UMTR-4-0.5-1.0	080510 07:30	S		2		
3. TAHA-3-3.0-6.0	8-4-10 10:25	S		2		
4.						
5.						
6.						
7.						
8.						
9.						
10.						
RELEASED BY: [Signature]		DATE: 080610		DATE: 8-6-10		
PRINT NAME: GARY FARMER		FIRM: URS Corp		FIRM: Test America		
RELEASED BY: [Signature]		DATE: 13:00		DATE: 13:00		
PRINT NAME: GARY FARMER		FIRM: URS Corp		FIRM: Test America		
ADDITIONAL REMARKS: # Sb, As, BA, Be, Cd, Cu, Hg, Pb, Se, Zn, Ag, C by EPA METHOD 1312						



Memo

1501 4th Avenue, Suite 1400
Seattle, Washington 98101
206.438.2700 Telephone
206.438.2699 Fax

To: Gary Panther, Project Manager **Info:** **FINAL**

From: Jennifer B. Garner, Chemist **Date:** September 3, 2010

SUBJECT: **Summary Data Quality Review**
Grandview Mine Assessment
August 2010

The summary data quality review of 5 groundwater samples and 13 soil samples collected between August 3 and August 18, 2010 has been completed. The groundwater samples were analyzed at the TestAmerica (TA) laboratory in Spokane, Washington for total metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc) by EPA Methods 200.8 and 245.1. The soil samples were extracted and analyzed at the TA laboratory in Portland, Oregon for Synthetic Precipitate Leaching Procedure (SPLP) metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc) by EPA Methods 1312, 6020, and 7470A. The analyses were performed in general accordance with methods specified in EPA's *Test Methods for Evaluating Solid Waste (SW-846), Update IIIB*, June 2005 and *Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry, Revision 5.4*, May 1994. The laboratory provided summary reports containing sample results and associated QA/QC data. The following samples are associated with TA sample delivery groups (SDGs) STH0028, STH0029, and STH0070:

Sample ID	Laboratory ID	Matrix	Requested Analyses
MW-2-080510	STH0028-01	Groundwater	Total Metals
MW-4-080610	STH0028-02	Groundwater	Total Metals
MW-3-080610	STH0028-03	Groundwater	Total Metals
DUP-080610 (Duplicate of MW-3-080610)	STH0028-04	Groundwater	Total Metals
LMSB-5-0.5-10.5	STH0029-01	Soil	SPLP Metals
LMTP-1-0.5-3.0	STH0029-02	Soil	SPLP Metals
LMTP-2-0.5-3.0	STH0029-03	Soil	SPLP Metals
LMTP-3-0.5-3.0	STH0029-04	Soil	SPLP Metals
LMTP-4-0.5-3.0	STH0029-05	Soil	SPLP Metals
TASB-4-5.0-14.0	STH0029-06	Soil	SPLP Metals
TAHA-1-0.5-2.0	STH0029-07	Soil	SPLP Metals
TAHA-2-0.5-2.0	STH0029-08	Soil	SPLP Metals
UMTP-1-0.5-2.7	STH0029-09	Soil	SPLP Metals
UMTP-2-0.5-3.0	STH0029-10	Soil	SPLP Metals
UMTP-3-0.5-3.0	STH0029-11	Soil	SPLP Metals
UMTP-4-0.5-1.0	STH0029-12	Soil	SPLP Metals
TAHA-3-3.0-6.0	STH0029-13	Soil	SPLP Metals
MW-1-081810	STH0070-01	Groundwater	Total Metals

**Summary Data Quality Review
Grandview Mine Assessment
August 2010**

Upon receipt by TA, the sample jar information was compared to the associated chain-of-custody and the cooler temperatures were recorded. No discrepancies relating to sample identification were noted by TA. The cooler temperatures exceeded the EPA-recommended limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ at 10.4°C and 8.6°C , respectively. Data were not qualified based on the elevated cooler temperatures.

Data validation is based on method performance criteria and QC criteria documented in the analytical methods and using TA internal quality control limits. Hold times, blanks, matrix spike/matrix spike duplicate recoveries, laboratory duplicate results, blank spike recoveries (laboratory control samples), and reporting limits were reviewed to assess compliance with applicable methods. If data qualification was required, data were qualified based on the definitions and use of qualifying flags outlined in the EPA document *USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review*, January 2010. A summary of data qualifiers assigned to this sample set is included in Table 1.

Total and SPLP Metals

Samples were analyzed for total and SPLP metals by the methods identified in the introduction to this report.

1. Holding Times – Acceptable
2. Blanks – Acceptable except as noted below:

SPLP Metals – Antimony (0.00590 mg/L) was detected in the method blank at a concentration between the method detection limit (MDL) and the laboratory reporting limit. The concentrations for antimony in LMSB-5-0.5-10.5, LMTP-1-0.5-3.0, LMTP-2-0.5-3.0, LMTP-3-0.5-3.0, LMTP-4-0.5-3.0, TASB-4-5.0-14.0, TAHA-1-0.5-2.0, TAHA-2-0.5-2.0, UMTF-1-0.5-2.7, UMTF-2-0.5-3.0, UMTF-3-0.5-3.0, UMTF-4-0.5-1.0, and TAHA-3-3.0-6.0 are less than ten times (10x) the method blank concentration and are reported between the MDL and the reporting limit; therefore, the results for antimony in these samples are qualified as not detected and flagged ‘U’ at the reporting limits.

3. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable
4. Matrix Spike / Matrix Spike Duplicate (MS/MSD) - Acceptable

Total Metals – Matrix spikes and/or matrix spike duplicates were performed on MW-4-080610, DUP-080610, MW-1-081810, and 3 samples from unrelated projects. Results are acceptable.

SPLP Metals – Matrix spikes were performed on LMSB-5-0.5-10.5 and UMTF-3-0.5-3.0. Results are acceptable.

5. Laboratory Duplicates – Acceptable

Total Metals – Laboratory duplicates were performed on MW-3-080610, DUP-080610, and 2 samples from unrelated projects. Results are acceptable.

SPLP Metals – A laboratory duplicate was performed for mercury on LMSB-5-0.5-10.5. Results are acceptable. A laboratory duplicate was not performed for SPLP antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, selenium, silver, and zinc. Precision for these metals was not assessed.

6. Field Duplicate (applicable to total metals only) – Acceptable

Total Metals – A field duplicate was submitted for MW-3-080610 and identified as DUP-080610. Results are comparable.

**Summary Data Quality Review
Grandview Mine Assessment
August 2010**

7. Reporting Limits – Acceptable except as noted below:

Total Metals – The reporting limits for arsenic, chromium, copper, and zinc were elevated in MW-1-081810 due to matrix interferences. The elevated reporting limits do not affect the use of the data for regulatory comparison.

SPLP Metals – The results for antimony in LMSB-5-0.5-10.5, LMTP-1-0.5-3.0, LMTP-2-0.5-3.0, LMTP-3-0.5-3.0, LMTP-4-0.5-3.0, TASB-4-5.0-14.0, TAHA-1-0.5-2.0, TAHA-2-0.5-2.0, UMTF-1-0.5-2.7, UMTF-2-0.5-3.0, UMTF-3-0.5-3.0, UMTF-4-0.5-1.0, and TAHA-3-3.0-6.0 were flagged with a ‘J’ by the laboratory to indicate that the reported result was between the MDL and the laboratory reporting limit. Typically, these J-flagged results would be qualified as estimated; however, these results were previously qualified as not detected based on the associated method blank result. No further qualification based on the laboratory-assigned ‘J’ flag is required.

Overall Assessment of Data

The data reported in these SDGs, as qualified, are considered to be usable for meeting project objectives. The completeness for SDGs STH0028, STH0029, and STH0070 is 100%.

Table 1 – Summary of Qualified Data

Sample ID	Laboratory ID	Analyte	Laboratory Result	Units	Final Result
LMSB-5-0.5-10.5	STH0029-01	Antimony	0.00680 J	mg/L	0.0100 U
LMTP-1-0.5-3.0	STH0029-02	Antimony	0.00670 J	mg/L	0.0100 U
LMTP-2-0.5-3.0	STH0029-03	Antimony	0.00600 J	mg/L	0.0100 U
LMTP-3-0.5-3.0	STH0029-04	Antimony	0.00730 J	mg/L	0.0100 U
LMTP-4-0.5-3.0	STH0029-05	Antimony	0.00620 J	mg/L	0.0100 U
TASB-4-5.0-14.0	STH0029-06	Antimony	0.00580 J	mg/L	0.0100 U
TAHA-1-0.5-2.0	STH0029-07	Antimony	0.00350 J	mg/L	0.0100 U
TAHA-2-0.5-2.0	STH0029-08	Antimony	0.00320 J	mg/L	0.0100 U
UMTF-1-0.5-2.7	STH0029-09	Antimony	0.00590 J	mg/L	0.0100 U
UMTF-2-0.5-3.0	STH0029-10	Antimony	0.00650 J	mg/L	0.0100 U
UMTF-3-0.5-3.0	STH0029-11	Antimony	0.00570 J	mg/L	0.0100 U
UMTF-4-0.5-1.0	STH0029-12	Antimony	0.00670 J	mg/L	0.0100 U
TAHA-3-3.0-6.0	STH0029-13	Antimony	0.00620 J	mg/L	0.0010 U