FINAL DRAFT
Site Characterization Report
Grandview Tailings
Pend Oreille Village, Washington

Prepared for

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ABBREVIATIONS AND ACRONYMS

ASTM	American Society of Testing and Materials
ATV	all-terrain vehicle
bgs	below ground surface
BLM	Bureau of Land Management
cy	cubic yards
EPA	U.S. Environmental Protection Agency
GPS	global positioning system
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MTCA	Model Toxics Control Act
pcf	pounds per cubic foot
START	Superfund Technical Assessment and Response Team
TCAI	Teck Cominco American Incorporated
TCLP	Toxicity Characteristic Leaching Procedure
USBM	U.S. Bureau of Mines
USCS	Unified Soil Classification System
VCP	Voluntary Cleanup Program
WAC	Washington Administrative Code
WDOE	State of Washington Department of Ecology

1.0 INTRODUCTION

This report presents the results of our field and laboratory investigation of the Grandview tailings site (Site). The Site is located immediately north of the Pend Oreille Village community near Metaline Falls in Pend Oreille County, Washington. The Site is located approximately 300 feet east of the east bank of the Pend Oreille River as shown in Figure 1-1.

URS' investigation was conducted in general accordance with URS Proposal No. 0654 to Teck Cominco American Incorporated (TCAI) dated July 28, 2006. The work was conducted under Time and Materials Work Order No. 1, dated August 8, 2006, of the Agreement for Professional Services (MSA) between TCAI and URS dated February 13, 2006.

1.1 PURPOSE

The purpose of this investigation is to assess the portion of the Grandview tailings that are on TCAI properties down slope of the Grandview Mine. This assessment includes the following:

- Areal extent of the tailings
- Estimated volume of the tailings
- Concentrations of metal contaminants in the tailings and underlying native soil
- Selected geotechnical properties of the tailings and underlying native soil
- Waste characteristics of the tailings

1.2 SCOPE

The scope of work for the URS assessment of the Grandview tailings included the following tasks:

- Collected and reviewed historical and other site information.
- Conducted a preliminary, scoping-level site reconnaissance.
- Prepared and submitted Voluntary Cleanup Program (VCP) paperwork and forms to the State of Washington Department of Ecology's Eastern Regional office Toxics Cleanup Program.
- Prepared a limited remedial investigation work plan, sampling and analysis plan, quality assurance project plan, and health and safety plan.
- Contacted the one-call utilities notification service.
- Excavated 28 hand-auger soil borings and 15 test pits. The total depths of the test pits ranged from 5 to 15 feet below ground surface (bgs), and the total depths of the hand auger borings ranged from 1 to 7 feet bgs. Soil and tailings materials encountered during soil boring and test pit explorations were described by a URS engineer using the Unified Soil Classification System (USCS). Soil borings and test pits were backfilled using the excavated material.

- Collected about two grab samples from each test pit. Generally, one sample was collected of the tailings and one sample was collected 1 to 2 feet below the bottom of the tailings. The tailings samples included both discrete and composite samples.
- Collected grab samples of tailings and underlying native soil from 5 hand excavations in the drainage east of the tailings area and the diversion channel on the hillside north of the tailings area.
- Analyzed selected samples for total metals including arsenic, cadmium, lead, mercury, and zinc by EPA 6000/7000 series methods, and arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver by the Toxicity Characteristic Leaching Procedure (TCLP; EPA Method 1311).
- Analyzed selected samples for geotechnical parameters including grain size, bulk density, specific gravity, and moisture content.
- Determined the locations of the excavations using a hand-held global positioning system (GPS) unit.

1.3 REPORT ORGANIZATION

This report is organized into six sections.

Section 1.0, this section, presents an introduction and summary of URS' scope of services.

Section 2.0, Site Description and Mine History, describes the important features of the Site and the history of mining activities.

Section 3.0, Site Characterization, describes the field and laboratory investigations and the results including an estimate of the areal extent and volume of tailings; a comparison of total metals concentrations to State of Washington soil cleanup levels; a comparison of TCLP results to State of Washington dangerous waste criteria; and geotechnical properties of the tailings.

Section 4.0, Conclusions, summarizes the results of the site characterization.

Section 5.0, Limitations, presents report qualifiers for use of this report.

Section 6.0, References, provides references used in this report.

2.0 SITE DESCRIPTION AND MINE HISTORY

2.1 SITE DESCRIPTION

For the purpose of this report, the Site is comprised of four parcels of land and one mining claim operated by TCAI (Figure 2-1). Features at the Site include the main tailings area, tailings in the natural drainage, tailings in a man-made drainage way, historic flume structures, PUD water supply vault, and Seattle City Light (SCL) overhead power lines. The Site is approximately 3.1 acres in size and located 1.1 miles north of Metaline Falls, 0.1 miles east of the Pend Oreille River, and 0.2 miles southwest of the Grandview Mine and Mill Site. The legal descriptions for the TCAI properties are:

- County Tax Parcel Number 433922-52-9004 (Pend Oreille Village Lot 4 Blk 1, owned by TCAI)
- County Tax Parcel Number 433922-52-9005 (Pend Oreille Village Lot 5 Blk 1, owned by TCAI)
- County Tax Parcel Number 433922-50-0002 (Samms Homestead, owned by TCAI)
- County Tax Parcel Number 433921-46-0001 (Mars Lode, Metaline Falls Lode, Spokane #2, owned by TCAI)
- BLM Serial No. ORMC-18052 (Mars No. 2, maintained by TCAI)

The main tailings area is a relatively flat area onto which the tailings deposited. The main tailings area is largely unvegetated, although there are some trees and grasses present, primarily around the perimeter of the tailings deposit. The ground surface slopes gently to the west in the western and central portions of the Site. There is a steep face in the eastern portion of tailings. The Site is undeveloped and is not fenced. The Site appears to receive recreational use, such as all-terrain vehicle (ATV) operation.

A natural drainage extends from the Grandview Mine and Mill site to the main tailings area. A man-made diversion channel intercepts the natural drainage approximately 150 feet upstream of the main tailings area and parallels the main tailings area to the north. The channel is approximately 10 feet wide and is located about 20 feet higher in elevation and approximately 20 to 40 feet north of the main tailings area. The channel extends to the top of the steep slope that forms the east bank of the Pend Oreille River. At one location above the main tailings area, the channel was breached on the downslope (south) side. Tailings are present in both the natural drainage and the man-made channel. In addition, a topographic depression is present at the western end of the main tailings area that likely represents the historic pathway the tailings flowed toward the Pend Oreille River. URS did not observe evidence that tailings continue to migrate toward the Pend Oreille River although such movement might be possible during runoff events. The locations of the mill, the natural drainage, the man-made channel, and the main tailings area are shown in Figure 2-1. Photographs of the Site are included in Appendix A.

Reportedly, the tailings were discharged to the Site from the former Grandview Mill. The preliminary assessment/site inspection (PA/SI) conducted by the U.S. Environmental Protection Agency (EPA) states (EPA 2001):

> *Tailings from the [Grandview] milling process were released to a drainage ditch which empties into a rugged, well-vegetated canyon… The canyon leads to the Pend Oreille River. Approximately 0.5 mile down the canyon the flume would have released the tailings to the ground. During the site visit tailings appeared to cover about 1 acre of land. It is believed that most of the tailings were washed from this area, through a gully and then over a bluff (Riverside Bluff), to the Pend Oreille River where they likely were carried downstream.*

2.2 GRANDVIEW MINE DESCRIPTION AND HISTORY

The Grandview Mine and Mill area is located approximately ¼ mile northeast of the tailings area. Features at the mine and mill area include several intact mill buildings, foundations of former mill buildings, four waste rock piles, and an unnamed spring. The unnamed spring begins at a point above the mine/mill area and flows across the site through a concrete culvert system toward the head of an old wastewater drainage ditch. The water exits the culvert system through a grating where water ponds. The terrain in the mine/mill area is flat where the mill buildings are located; however, the western border of the property is characterized by steeply sloping hills. Just south of the mine/mill area, the terrain slopes steeply downhill to the main tailings area (EPA 2003). A drainage is present that extends from the southwestern portion of the mine and mill site downhill to the eastern portion of the tailings area.

The site is located in the Metaline mining district. The presence of lead in the district was known as early as 1869, although mining did not begin until about 1886. Shortly after, in about 1892, several associated claims including Grandview Mine property were patented by Fredrick W. Billings. Additional Grandview-related claims were patented in 1899, 1913, 1918, and 1926 (TCAI 2006).

Timber and mineral production in the district expanded following completion of the Idaho and Washington Northern Railroad to Metaline Falls in 1910 (USGS 1965). Early lead and silver production occurred at the Grandview group of claims beginning in about 1924; in about 1925, a 50-ton concentrator plant was present at the Grandview Mine (USBM 1927) and approximately 1,000 tons of ore were mined between 1924 and 1926 (USGS 1965). As mining in the area expanded, the Grandview Lead Company, Inc. was incorporated in about 1926 and began assembling the various claims in the Grandview area. In about 1927, Grandview Mines Inc. succeeded the Grandview Lead Company. Irregular distribution of metals prevented profitable mining until the late 1920s when diamond drilling was used to locate a large body of lead-zinc ore on Pend Oreille Mines and Metals Company claims (located north of the Grandview site) and the Grandview Mines Inc. claims (USGS 1965).

Significant lead and zinc ore production began at the underground Grandview Mine in early 1929 with the addition of a 175-ton concentrator plant (Huttl 1945). Other references indicate

that during 1929 the Grandview Mine processed ore in an on-site 200-ton plant (Rand 1931). Total ore processed during 1929 is estimated to be approximately 50,600 tons (Rand 1931).

Little production occurred at the Grandview between 1930 and 1940, likely due to depressed demand for lead and zinc. In 1936, the Grandview Mine and Mill were leased to American Zinc, Lead and Smelting Company (American Zinc). American Zinc continued to develop the Grandview Mine and Mill and reportedly upgraded the Grandview Mill to a 450-ton floatation mill in 1940 and to a 600-ton concentrator-floatation plant in 1942 (Mines Register 1942 and USBM 1958). Yearly production from the Grandview Mine increased during the 1940s and early 1950s from about 15,000 tons of ore in 1940 to a peak of over 239,000 tons in 1952.

American Zinc also provided financing to Metaline Mining and Leasing to develop the Metaline Mine, which produced ore for the expanded Grandview Mill from the Bella May, Blue Bucket, and West Contact ore bodies. The Metaline Mine last produced in 1950.

During production, ore from the Metaline Mine was brought to the Grandview Mill site by 5-ton truckload and from the Grandview Mine by 6-ton ore cars. Ores from each of the mines were stored separately (Huttl 1945). Observations during operation of the Grandview Mill indicated that the mill "discharges tailings from the floatation of 700 tons of ore per day to the river via a flume passing over a flat area about one acre in area" (Orlob 1950). The one acre flat area described is assumed to represent the current main tailings area located north of Pend Oreille Village on TCAI property. An aerial photograph from 1955 clearly shows a drainage connecting the mine site to the tailings area. Wood timbers suspected to be the remains of this flume system were observed near the tailings during completion of URS' 2006 field investigation, see Section 3.2.

In 1943, additional unpatented mining claims were patented into the Grandview group of claims. By 1959, American Zinc purchased the Grandview Mine and Mill operations. The Grandview Mine and Mill ceased operations in 1964 (Lasmanis 1995). In 1971, American Zinc sold interest in the mine to Washington Resources Inc. Washington Resources General Partnership purchased the mine by quit claim deed from Washington Resources Inc. in 1982. In 2000, Washington Resources General Partnership sold all interests in the Grandview property to Washington Resources LLC. It is URS' understanding that Washington Resources LLC is the current owner of the Grandview Mine and Mill site (TCAI 2006). However, in March 2006, Washington Resources LLC submitted four applications to Pend Oreille County to subdivide three Grandview Mine and Mill properties into ten parcels and to perform a boundary line adjustment on a fourth parcel. In April 2006, a portion of these applications were approved. URS does not have information to indicate whether portions of the Grandview Mine and Mill property have been sold to another party.

Production of ore from the Grandview Mine between the period 1924 and 1964 is estimated at 3,995,746 tons (Lasmanis 1995). Production from the Metaline Mine during 1937 to 1951, the period when the Grandview Mill processed Metaline Mine ore, is estimated at 430,036 tons (USGS 1965). Approximately 5% of the weight of ore represents metals (primarily zinc, lead, and silver) that are removed during the milling process, based on historic production records for the Metaline and Grandview mines. Because a concentrator was present at the Grandview site throughout the production life of the mine, it is assumed that most ore from the mines during this period was beneficiated at the Grandview mill. Assuming that approximately 5% of ore weight represents metals recovered during the milling process and the balance represents mill tailings, approximately 4,200,000 tons of tailings were produced by the Grandview Mill.

3.0 SITE CHARACTERIZATION

3.1 EXISTING INFORMATION

Existing information about the Site was reported in the EPA START-2 reports "Grandview Mine Preliminary Assessment/Site Inspection" (EPA 2001) and "Preliminary Assessments and Site Investigations Report, Lower Pend Oreille River Mines and Mills" (EPA 2002). These reports include laboratory analytical data from samples of the Grandview tailings deposited on TCAI properties. While the EPA reports had a broader focus of investigation, only excerpts of those reports applicable to the TCAI Grandview tailings Site are used within this report.

EPA contractors collected samples at the Site in October 2000. Samples were collected from the main tailings area (surface and subsurface composite samples TP-01 and TP-02) and from the former natural drainage ditch (six surface samples FD02 through FD07). The samples collected from the main tailings area contained elevated concentrations of cadmium [58.4 milligrams per kilogram (mg/kg)], copper (91.5 mg/kg), lead (2,260 mg/kg), mercury (1.7 mg/kg JL[1]), selenium (1.1 mg/kg), and zinc (19,100 mg/kg). The samples collected from the natural drainage way contained elevated concentrations of arsenic (22.1 mg/kg), cadmium (41.8 mg/kg), copper (858 mg/kg), lead (23,200 mg/kg), mercury (2.4 mg/kg), selenium (3.5 mg/kg), and zinc (12,100 mg/kg). The locations of the START samples are shown in Figure 3-1.

The START-2 report concluded:

> *Analytical results of samples collected indicate that hazardous substances are migrating to targets that include groundwater drinking water wells, the unnamed spring, the former wastewater ditch, the Pend Oreille River, and habitat used by threatened and endangered species.*

3.2 FIELD INVESTIGATION

URS' initial field investigation was conducted between September 25 and September 27, 2006 on portions of the Site owned by TCAI. The investigation included excavation of 15 test pits and 28 hand auger borings. The test pits and hand auger borings were excavated through the tailings at least 1 foot into the underlying native soil. The test pits and hand auger borings were located in the field using a hand-held Garmin GPSMAP 60CS global positioning system (GPS) unit. The test pit and hand auger locations are shown in Figure 3-1. Soils encountered in the excavations were logged by the URS engineer. Logs of the test pit and hand auger excavations are presented in Appendix B.

Grab samples of the tailings and underlying native soil were collected from the bucket of the excavator at the test pit locations. Both discrete (single depth interval) and composite (multiple depth intervals) samples were collected. The samples were delivered to the analytical laboratory under chain of custody. The chain of custody forms are presented in Appendix C.

[1] JL = estimated concentration, low bias

On November 14 and November 15, 2006, URS mapped and collected samples from the drainage east of the main tailings area and from the man-made drainage channel located north of the main tailings area. Tailings and soil were excavated using a hand shovel (4 locations) and hand auger (1 location). Discrete grab samples were collected of tailings and native soil at 5 locations. In addition, the depth of tailings was explored at 7 transects. The sample and transect locations are shown in Figure 3-1. The sample and transect locations were determined by measuring the distance from the property boundary and the head of the man-made drainage channel.

Generally, the configuration of the tailings was observed to thin in the western portion of the deposit. Tailings deposition appeared to be limited to the north and east against upward hill slopes in these directions. Tailings deposition to the south appeared to be controlled by the former river terrace that comprises the Pend Oreille Village town site. In the eastern portion of the Site an upper bench was observed with an area of tailings approximately 15 feet higher in elevation (at maximum relief) than tailings to the west. Wood timbers suspected to be the remnants of the tailings conveyance system from the Grandview Mill to the tailings Site were observed near the east end of the main tailings area. The approximate location of these timbers is shown in Figure 3-1.

A utility vault that houses an underground water booster station is present in the south central portion of the tailings area. A concrete pad, two vent pipes, and two access hatches are present at the ground surface. The utility vault was not accessed. Based on drawings provided to URS, three underground water pipes enter the southwest side of the booster station, and two underground water pipes enter the southeast side of the booster station (Sewell and Associates 1996). Note that these underground water pipes deliver water to the booster station pressure reducing valve (PRV) at high pressure and a portion of the pipes underlie the main tailings area; personnel conducting future exploration and/or excavation activities should recognize the presence of these pipes, the potential environmental damage that would occur if the pipes were to break under pressure, and protect the pipes accordingly. The location of the booster station and approximate locations of the water pipes are shown in Figure 3-1.

3.3 TAILINGS THICKNESS AND VOLUME

The thickness of tailings was measured in each excavation by the URS engineer. The tailings were readily identified in the field by their light gray color, which contrasted markedly from the dark-colored native soil. The maximum thickness of tailings encountered was 11 feet in test pit TP-05, although the tailings thickness might approach 19 feet in the western upper bench portion of the tailings not explored by URS[2]. A thickness of 19 feet was estimated by adding the height of the upper bench (15 feet) to the thickness of tailings in test pit TP-07 (4 feet), which was located near the toe of the steep face between the upper bench and lower tailings area. Tailings thickness measurements are summarized in Table 3-1 and shown in Figure 3-2. The approximate boundary of the area covered by tailings as determined by the field exploration is shown in Figure 3-2.

[2] The western upper bench area could not be explored because the excavator could not readily access the area and the thickness of the tailings exceeded the maximum depth that could be explored by hand auger.

The tailings area and volume were estimated using AutoDesk Land Development Desktop 2004 software. The software calculates the volume between two surfaces: the ground surface and the base of the tailings. The ground surface elevation was defined as 0 feet in the west and central portions of the Site and +10 feet for the upper bench at the east end of the Site, east of the steep face. The upper bench elevation represents an average height of the upper bench above the lower tailings area. The base of the tailings was defined as the ground surface elevation minus the measured thickness of tailings at the test pit and hand auger locations. Base of tailings elevations are summarized in Table 3-1. In addition to the base of tailings elevations at test pit and hand auger locations, estimated base of tailings elevations beneath the steep face were input into the software. The base of tailings elevations estimated beneath the face ranged from -4 feet near the center of the tailings area where the tailings were thickest to 0 feet where the tailings tapered out at the perimeter of the tailings area.

The software refines the ground and base of tailings surfaces by calculating ground surface and base of tailings elevations on a grid with a 0.01 foot spacing. The ground surface and base of tailings elevations at each grid point are calculated by the software using a linear interpolation between input elevation points. At locations where native soil was not reached in the exploration, the software was used to calculate the base of tailings elevations. URS compared the calculated base of tailings elevations to the maximum depths reached by exploration to ensure that the calculated depths were consistent with field observations.

The total area impacted by tailings is approximately 134,000 square feet (3.1 acres). Of this total, approximately 109,000 square feet (2.8 acres) lie within parcels owned by TCAI. Approximately 25,000 square feet (0.6 acres) lie within parcels that are not owned by TCAI. The total estimated volume of tailings is approximately 20,700 cubic yards (cy). Of this total, approximately 19,800 cy are present on parcels owned by TCAI. Approximately 900 cy are present on parcels that are not owned by TCAI.

Additional tailings are present in the drainage east of the main tailings area and in the man-made drainage channel north of the main tailings area. In the drainage east of the tailings area, the tailings thickness ranged up to 1.3 feet. For the purpose of estimating the volume of the tailings, an average thickness of one foot was used. The average width of the drainage east of the main tailings area is approximately 21 feet and its length within TCAI property is approximately 660 feet. The estimated volume of tailings contained in the drainage within TCAI property is approximately 500 cubic yards.

In the channel north of the tailings area, most of the tailings appeared to have been removed by erosion. Pockets of tailings remained that ranged in thickness up to 1.1 feet. The average thickness of tailings in the channel is estimated to be approximately 0.5 foot. The average width of the channel is approximately 10 feet and its length is approximately 760 feet. The estimated volume of tailings contained in the drainage is approximately 140 cubic yards. The channel had been breached at one location; the location of the breach is shown in Figure 3-1.

The estimated areas and volumes of tailings are summarized in Table 3-2.

3.4 LABORATORY RESULTS

Analytical chemistry testing was conducted by SVL Inc. in Kellogg, Idaho. Geotechnical testing was conducted by Budinger and Associates in Spokane, Washington. The laboratory data sheets and chain of custody forms are presented in Appendix C.

3.4.1 Total Metals

Concentrations of arsenic, cadmium, lead, mercury, and zinc were measured in 16 tailings samples and 18 native soil samples. Concentrations of metals in tailings and native soil samples were compared to natural background levels and regulatory levels. Natural background levels include the statewide 90th percentile level (WDOE 1994) and levels measured in a site-specific soil background sample (sample BK02SS; EPA 2002). Regulatory levels include the State of Washington Model Toxics Control Act (MTCA) Method A unrestricted land use soil cleanup levels for arsenic, cadmium, lead, and mercury and the MTCA Method B soil direct contact cleanup level for zinc. Total metals results, natural background levels, and regulatory levels are summarized in Table 3-3.

Tailings

Concentrations of arsenic, cadmium, lead, mercury, and zinc in tailings samples are elevated compared to statewide and site-specific natural background levels. Concentrations of lead and cadmium in all tailings samples exceed the MTCA Method A soil cleanup levels for unrestricted use. Concentrations of arsenic in 10 of 16 tailings samples equal or exceed the MTCA Method A soil cleanup level for unrestricted use. Concentrations of mercury in all samples are less than the MTCA Method A cleanup levels for unrestricted use. There is no Method A soil cleanup level for zinc. Concentrations of zinc in 2 of 16 tailings samples exceed the MTCA Method B soil direct contact cleanup level for unrestricted land use. Total metals results are shown graphically for arsenic, cadmium, lead, mercury, and zinc in Figures 3-2 through 3-6, respectively.

Native Soil

Concentrations of arsenic, cadmium, lead, and mercury in native soil are generally similar to statewide and site-specific natural background levels. In addition, concentrations of arsenic, lead, and mercury are less than the MTCA Method A soil cleanup levels in the native soil samples. Concentrations of cadmium slightly exceed the MTCA Method A soil cleanup level of 2 mg/kg in 3 of 18 native soil samples including 2.45 mg/kg in sample TP-04-S, 2.35 mg/kg in sample TP-05-S, and 2.97 mg/kg in sample UD-5-S.

Concentrations of zinc in native soils are generally higher than natural background levels, but are less than the MTCA Method B soil direct contact cleanup level. Because use of Method B includes evaluating soil concentrations protective of groundwater, the potential for zinc in native soil to impact groundwater was evaluated using the three-phase partitioning model described in MTCA (WAC 173-340-747, Equation 747-1). The values of the distribution coefficient (62 liters per gram), the oral reference dose (0.3 milligrams per kilogram per day), and the Method B

groundwater cleanup level (4,800 micrograms per liter) were obtained from Ecology's Cleanup Levels and Risk Calculation (CLARC) database. Using these parameters, the Method B soil cleanup level for zinc for protection of groundwater is 6,000 mg/kg. Concentrations of zinc in all native soil samples are less than the MTCA Method B soil cleanup level for protection of groundwater.

Total metals results for native soil samples are shown graphically for arsenic, cadmium, lead, mercury, and zinc in Figure 3-7.

3.4.2 TCLP

Ten samples (five tailings and five native soil) were tested for arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver by TCLP (EPA Test Method 1311) to determine if the tailings characterize as dangerous waste as a result of a toxicity characteristic. The results of the TCLP tests are summarized in Table 3-4.

Each of the 5 tailings samples exceeds 5 milligrams per liter (mg/L) of lead in the TCLP extract. No other analyte exceeds a TCLP regulatory level in the tailings samples, and no analyte exceeds a TCLP regulatory level in the native soil samples.

3.4.3 Geotechnical Properties

Two tailings samples were tested to determine moisture content, particle size distribution, specific gravity, and dry density. Three native soil samples were tested to determine moisture content and particle size distribution. The test results are summarized in Table 3-5. The particle size distribution curves are presented in Appendix B.

Based on particle size distribution, the tailings samples are silty fine sands. The percentage of fine-grained material (percent passing the No. 200 sieve) is 19 percent and 44 percent. The specific gravities of the tailings samples are 2.67 and 2.73. The moisture contents of the tailings samples are both 2.9 percent.

The dry densities of the tailings samples were evaluated by compacting the samples into molds using 10, 30 and 60 blows. The approximate corresponding densities range from loose for 10 blows to very dense for 60 blows. The measured dry densities for sample TP-02-T range from 77 pounds per cubic foot (pcf) for 10 blows to 88 pcf for 60 blows. The measured dry densities for sample TP-08-T range from 83 pcf for 10 blows to 94 pcf for 60 blows. These densities might be lower than actual field conditions.

Based on particle size distribution, the native soil samples are sandy silts. The percentage of fine-grained material (percent passing the No. 200 sieve) ranges from 55 percent to 75 percent. The moisture contents of the native soil samples range from 10.2 percent to 52.7 percent.

3.5 WASTE CHARACTERIZATION

The tailings were characterized using the State of Washington dangerous waste toxicity criteria (WAC 173-303-090(8)). Each of the 5 tailings samples tested exceeds the State of Washington dangerous waste regulatory level for lead (5 mg/L) in the TCLP extract. These results indicate that if the tailings become a waste through "active management," they would be characterized as a State of Washington dangerous waste (Dangerous Waste Number D008).

Based on existing investigation reports including the EPA START-2 reports “Grandview Mine Preliminary Assessment/Site Inspection” (EPA 2001) and “Preliminary Assessments and Site Investigations Report, Lower Pend Oreille River Mines and Mills” (EPA 2002), data collected in this field investigation, and review of past aerial photographs, the Grandview Mine and Mill appears to be the sole generator of the tailings located on the Site. The tailings were placed, including placement to the TCAI Site, prior to the RCRA regulations and therefore do not appear to be a dangerous waste in their current position and without "active management." Even though the tailings may not be a dangerous waste, there is a requirement to report a threat or potential threat to human health or the environment from the release of hazardous substances under MTCA WAC 173-340-300(2)(a) to Ecology within ninety days of discovery.

3.6 HYDROGEOLOGY

Based on historic reports including the EPA START-2 reports “Grandview Mine Preliminary Assessment/Site Inspection” (EPA 2001) and “Preliminary Assessments and Site Investigations Report, Lower Pend Oreille River Mines and Mills” (EPA 2002), and well logs from nearby water supply wells, it appears general groundwater flow across the Site is west to west-southwest and static depth to water is approximately 120 feet below the main tailings area. Field observations made during this site investigation showed that there are additionally localized seeps at various elevations above the tailings Site to the north, and below along the east side of the Pend Oreille Riverbank cliffs west of the main tailings Site. No seeps were observed near the tailings Site on TCAI properties.

4.0 CONCLUSIONS

A previous investigation at the Grandview tailings Site conducted by the EPA in 2000 included collecting and analyzing samples of tailings material. Results of that study identified that tailings material contained elevated concentrations of environmental contaminants including cadmium, lead, and zinc.

URS conducted additional characterization of the tailings material located on TCAI property, including excavation of 15 test pits and 28 hand auger borings. The thickness of tailings as identified in test pits and hand auger borings ranged from 0.1 feet to 11 feet, although the thickness of the tailings might approach 19 feet in an unexplored area in the eastern portion of the deposit. A thickness of 19 feet was estimated by adding the height of the upper bench (15 feet) to the thickness of tailings in test pit TP-07 (4 feet), which was located near the toe of the steep slope between the upper bench and lower tailings area.

URS also characterized tailings that are present in the drainage east of the main tailings area and in the man-made drainage channel north of the main tailings area. In the drainage east of the tailings area, the tailings thickness ranged up to 1.3 feet. In the man-made channel north of the tailings area, most of the tailings appeared to have been removed by erosion. Pockets of tailings remained that ranged in thickness up to 1.1 feet.

The volume of tailings on TCAI property is estimated to be about 20,400 cy. An additional 900 cy are estimated to be present on adjacent property. This volume might be different than the actual volume present because of uncertainty related to the shape of the underlying native soil surface and other factors.

Based on particle size distribution, tailings appear to be silty sand with density ranging from 77 to 94 pounds per cubic foot. Note that this range of densities might be lower than actual in-place density.

Sixteen tailings samples and 18 native soil samples were collected and analyzed for total arsenic, cadmium, lead, mercury, and zinc by EPA 6000/7000 series methods. In addition, five tailings samples and five native soil samples were analyzed for arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver by TCLP, EPA Method 1311. All tailings samples contained concentrations of cadmium and lead exceeding MTCA Method A soil cleanup levels. Concentrations of arsenic and zinc exceed applicable cleanup levels in a portion of the tailings samples. All five tailings samples analyzed by TCLP methods exceed the 5 mg/L dangerous waste characteristic criterion for lead; none of the five native soil samples exceed TCLP dangerous waste criteria.

With the exception of cadmium, concentrations of metals did not exceed MTCA soil cleanup levels in native soil samples collected 1 to 2 feet beneath the bottom of the tailings deposit. Cadmium exceeds the MTCA Method A soil cleanup level in two native soil samples collected beneath the tailings deposit and one native soil sample collected beneath the drainage north of the tailings deposit. The Method A soil cleanup level for cadmium is based on protection of

groundwater. Concentrations of zinc in native soils are generally higher than natural background levels, but are less than the MTCA Method B soil direct contact cleanup level.

Historic references (Orlob 1950) describe the Grandview Mill's flume system used to convey tailings to the TCAI property. Historic aerial photographs including a photo from 1955 clearly show a drainage connecting the mine site to the tailings area. Field observations during URS' investigation including wood timbers suspected to be the remnants of the flume system and tailings deposits within a drainage leading from the tailings area property uphill to Grandview property immediately beneath the former mill site. Further, EPA START-2 studies conducted between 2000 and 2003 describe that the tailings present on the TCAI property originated at the Grandview Mill. These data support the findings that tailings present on TCAI property near the Pend Oreille Village originated at the Grandview Mine and Mill site.

5.0 LIMITATIONS

The findings and conclusions documented in this report have been prepared for specific application to this project and have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area and in general accordance with the terms and conditions set forth in our Agreement, and with the URS proposal dated July 28, 2006. No other warranty, expressed or implied, is made.

Testing on the site was conducted in locations and for parameters consistent with former site uses. However, as conditions between the test pits and boreholes may vary, the potential always remains for the presence of unknown, unidentified, or unforeseen surface and subsurface contamination. Further evidence for such potential contamination would require additional surface and subsurface exploration and chemical analytical testing.

Conclusions in this report are based on comparison of chemical analytical results to current regulatory standards. In the event these standards are changed, new standards are introduced, or new information is developed in future site work, URS should be retained to re-evaluate the conclusions of this report and to provide amendments as required. The conclusions presented herein apply to the site conditions existing at the time of our investigation. Therefore, our conclusions may not apply to future conditions that may exist at the site, which we have not had the opportunity to evaluate. Conclusions expressed herein are based on our understanding and interpretation of current regulatory standards and should not be construed as legal opinions.

This report is for the exclusive use of TCAI and their representatives. No third party shall have the right to rely on our opinions rendered in connection with the services or in this document without our written consent and the third party's agreement to be bound to the same conditions and limitations as TCAI.

6.0 REFERENCES

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Table 3-1
Field Exploration Locations and Tailings Thickness Data

Exploration	Date and Time	Position[1]	Tailings Thickness, feet	Base of Tailings Elevation, feet[2]
TEST PT 01	26-SEP-06 9:06:14AM	N48 52.168 W117 21.908	3	-3
TEST PT 02	26-SEP-06 9:41:37AM	N48 52.176 W117 21.888	4.5	-4.5
TEST PT 03	26-SEP-06 10:19:45AM	N48 52.180 W117 21.887	7.7	-7.7
TEST PT 04	26-SEP-06 11:19:07AM	N48 52.185 W117 21.875	7.7	-7.7
TEST PT 05	26-SEP-06 12:27:02PM	N48 52.190 W117 21.867	11	-11
TEST PT 06	26-SEP-06 1:33:18PM	N48 52.192 W117 21.833	7.2	2.8[2]
TEST PT 07	26-SEP-06 2:40:53PM	N48 52.170 W117 21.831	4	-4
TEST PT 08	26-SEP-06 3:21:54PM	N48 52.180 W117 21.853	8	-8
TEST PT 09	26-SEP-06 4:06:34PM	N48 52.169 W117 21.867	9.5	-9.5
TEST PT 10	26-SEP-06 4:55:26PM	N48 52.172 W117 21.878	9.5	-9.5
TEST PT 11	26-SEP-06 5:24:41PM	N48 52.172 W117 21.864	9	-9
TEST PT 12	26-SEP-06 5:55:52PM	N48 52.164 W117 21.834	5	-5
TEST PT 13	26-SEP-06 6:22:17PM	N48 52.164 W117 21.858	8.5	-8.5
TEST PT 14	26-SEP-06 6:54:19PM	N48 52.165 W117 21.872	10.5	-10.5
TEST PT 15	26-SEP-06 7:27:10PM	N48 52.168 W117 21.885	7	-7
HAND AG 01	25-SEP-06 12:27:07PM	N48 52.146 W117 21.863	0	0
HAND AG 02	25-SEP-06 12:45:19PM	N48 52.147 W117 21.860	0.75	-0.75
HAND AG 03	25-SEP-06 2:05:06PM	N48 52.154 W117 21.869	0.75	-0.75
HAND AG 04	25-SEP-06 3:01:45PM	N48 52.162 W117 21.884	>7.0 (equipment maximum)	Not used
HAND AG 05	25-SEP-06 3:41:00PM	N48 52.160 W117 21.882	6	-6
HAND AG 06	25-SEP-06 5:03:19PM	N48 52.164 W117 21.860	4	-4
HAND AG 07	25-SEP-06 5:21:13PM	N48 52.155 W117 21.895	3	-3
HAND AG 08	25-SEP-06 5:46:31PM	N48 52.151 W117 21.888	1.2	-1.2
HAND AG 09	25-SEP-06 6:07:45PM	N48 52.146 W117 21.896	1.4	-1.4
HAND AG 10	27-SEP-06 8:28:26AM	N48 52.146 W117 21.900	0.1	-0.1
HAND AG 11	27-SEP-06 8:48:15AM	N48 52.149 W117 21.903	1	-1
HAND AG 12	27-SEP-06 9:02:03AM	N48 52.151 W117 21.902	0.1	-0.1
HAND AG 13	27-SEP-06 9:22:37AM	N48 52.161 W117 21.912	2	-2
HAND AG 14	27-SEP-06 9:38:08AM	N48 52.163 W117 21.911	0.4	-0.4
HAND AG 15	27-SEP-06 10:25:59AM	N48 52.163 W117 21.924	0.5	-0.5
HAND AG 16	27-SEP-06 11:39:20AM	N48 52.166 W117 21.928	0.8	-0.8
HAND AG 17	27-SEP-06 11:54:22AM	N48 52.170 W117 21.939	2	-2
HAND AG 18	27-SEP-06 12:03:45PM	N48 52.164 W117 21.940	1	-1
HAND AG 20	27-SEP-06 12:21:53PM	N48 52.164 W117 21.955	1	-1
HAND AG 21	27-SEP-06 12:29:06PM	N48 52.161 W117 21.958	0.5	-0.5

Table 3-1 (Continued)
Field Exploration Locations and Tailings Thickness Data

Exploration	Date and Time	Position[1]	Tailings Thickness, feet	Base of Tailings Elevation, feet[2]
HAND AG 22	27-SEP-06 12:41:48PM	N48 52.158 W117 21.959	0	0
HAND AG 23	27-SEP-06 1:02:25PM	N48 52.164 W117 21.949	3	-3
HAND AG 24	27-SEP-06 1:18:33PM	N48 52.169 W117 21.950	0	0
HAND AG 25	27-SEP-06 1:26:02PM	N48 52.167 W117 21.951	0.6	-0.6
HAND AG 26	27-SEP-06 2:24:08PM	N48 52.187 W117 21.886	0.7	-0.7
HAND AG 27	27-SEP-06 2:43:32PM	N48 52.193 W117 21.858	>1.5 (stopped by rock)	Not used
HAND AG 28	27-SEP-06 3:01:29PM	N48 52.178 W117 21.827	>1.7 (stopped by rock)	Not used
HAND AG 29	27-SEP-06 3:14:32PM	N48 52.160 W117 21.808	>7.0 (equipment maximum)	Not used

Note:
[1] Datum is the North American Datum of 1983 (NAD83)
[2]Tailings elevations are referenced to arbitrary elevations of 0 feet established for the western and central portions of the Site and +10 feet established for the eastern portion of the Site (test pit TP-06).

Table 3-2
Estimated Area and Volume of Tailings

Feature	Estimated Area, acres	Estimated Volume, cubic yards
Main Tailings Area	3.1	20,700
TCAI- Property	2.5	19,800
Non-TCAI Property	0.6	900
Drainage East of Main Tailings Area (TCAI Property)	0.3	500
Channel North of Main Tailings Area	0.2	140
Totals for TCAI Property	3.0	20,440

Table 3-3
Total Metals Results

Sample ID	Sample Depth, ft	Material Type	Total Metals, mg/kg				
			Arsenic	Cadmium	Lead	Mercury	Zinc
TP-01-T	2-2.5	Tailings	**43**	**78.9**	**2650**	0.737	20,700
TP-02-T	0.5-4.5 (composite)	Tailings	**40**	**33.1**	**2200**	0.642	8,390
TP-03-T	4-6 (composite)	Tailings	**27**	**110**	**3320**	1.26	**28,900**
TP-04-T	0-7 (composite)	Tailings	**33**	**68.5**	**3380**	0.777	18,800
TP-05-T	1-10 (composite)	Tailings	**32**	**69.5**	**2700**	0.992	18,800
TP-06-T	6-6.5	Tailings	**26**	**93.1**	**2150**	0.880	**28,500**
TP-07-T	1-1.5	Tailings	16	**68.3**	**3320**	1.65	16,700
TP-08-T	0.5-1	Tailings	**20**	**46.7**	**1030**	1.05	12,500
TP-09-T	0-9 (composite)	Tailings	**23**	**56.6**	**2220**	1.51	14,500
TP-10-T	2-9 (composite)	Tailings	<13*	**50.5**	**1430**	1.10	14,000
TP-11-T	1-8 (composite)	Tailings	13	**51.6**	**1560**	1.02	14,300
TP-12-T	1.5-2	Tailings	15	**59.1**	**1280**	1.57	17,700
TP-13-T	1-3.5 (composite)	Tailings	15	**39.3**	**856**	0.282	12,100
TP-14-T	2-8 (composite)	Tailings	14	**37.8**	**1320**	0.940	10,300
TP-15-T	2-2.5	Tailings	**24**	**24.7**	**547**	0.642	7,550
UD-5-T	0.3-0.4	Tailings	13.1	**22.3**	**813**	0.628	5,740
TP-01-S	4.5-5	Native soil	5.8	0.96	31.2	0.068	1,870
TP-02-S	5.5-6	Native soil	7.0	1.02	51.2	0.045	2,610
TP-03-S	9-9.5	Native soil	6.9	<0.20	16.8	<0.033	353
TP-04-S	9-9.5	Native soil	3.4	**2.45**	71.9	<0.033	1,210
TP-05-S	14-14.5	Native soil	2.7	**2.35**	48.5	0.132	968
TP-06-S	9-9.5	Native soil	3.2	0.94	17.2	0.057	594
TP-07-S1	4.5-5	Native soil	7.7	0.44	17.4	<0.033	933
TP-07-S2	8.5-9	Native soil	6.4	<0.20	12.3	<0.033	59.1
TP-08-S	9-9.5	Native soil	2.9	1.03	9.91	<0.033	982
TP-09-S01	9.5-10	Native soil	4.1	0.48	31.8	<0.033	913
TP-09-S02	15-15.5	Native soil	6.3	<0.20	16.3	<0.033	155
TP-10-S	11-11.5	Native soil	2.9	0.94	9.99	<0.033	1,440
TP-11-S	10.5-11	Native soil	3.6	0.45	12.4	<0.033	390

Table 3-3 (Continued)
Total Metals Results

Sample ID	Sample Depth, ft	Material Type	Total Metals, mg/kg				
			Arsenic	Cadmium	Lead	Mercury	Zinc
TP-12-S	6-6.5	Native soil	3.1	1.07	71.2	0.058	1,310
TP-13-S	10.5-11	Native soil	5.0	1.64	46.7	<0.033	2,180
TP-14-S	11.5-12	Native soil	<2.5	<0.20	15.7	<0.033	695
TP-15-S	8-8.5	Native soil	5.4	<0.20	15.4	<0.033	1,690
UD-5-S	1.2	Native soil	7.2	**2.97**	144	0.060	941
Background level, statewide, 90th percentile (WDOE Publication #94-115)			7	1	17	0.07	86
Background soil sample BK02SS (EPA 2002)			3.5	0.86 J (0.86 SQL)	47.2 JK (68 AC)	<0.06	201
MTCA Method A cleanup level for unrestricted land use			20	2	250	2	24,000 (1)

Notes:
(1) There is no MTCA Method A soil cleanup level for zinc. The concentration listed is the MTCA Method B direct contact soil cleanup level for unrestricted land use.
*Elevated detection limit due to matrix interference
Boldface type denotes concentration equals or exceeds MTCA Method A cleanup level for unrestricted land use (for zinc, MTCA Method B cleanup level for unrestricted land use)
AC - Adjusted concentration
B - The reported concentration is between the instrument detection limit and the contract-required detection limit.
J - The analyte was positively identified. The associated numerical value is an estimate.
K - Unknown bias
SQL - Sample quantitation limit

Table 3-4
Summary of TCLP Results

Sample	Depth, feet	Material Type	Concentration in TCLP Extract, mg/L							
			Silver	Arsenic	Barium	Cadmium	Chromium	Mercury	Lead	Selenium
TP-02-T	2-2.5	Tailings	<0.05	<0.05	<1.0	0.328	<0.05	<0.0002	**5.23**	<0.05
TP-06-T	6-6.5	Tailings	<0.05	<0.05	<1.0	0.623	<0.05	0.00025	**7.99**	<0.05
TP-10-T	2-9 (composite)	Tailings	<0.05	<0.05	<1.0	0.42	<0.05	<0.0002	**6.59**	<0.05
TP-12-T	1.5-2	Tailings	<0.05	<0.05	<1.0	0.778	<0.05	<0.0002	**8.72**	<0.05
TP-14-T	2-8 (composite)	Tailings	<0.05	<0.05	<1.0	0.413	<0.05	<0.0002	**8.32**	<0.05
TP-02-S	5.5-6	Native soil	<0.05	<0.05	2.24	0.017	<0.05	<0.0002	<0.05	0.06
TP-06-S	9-9.5	Native soil	<0.05	<0.05	<1.0	0.0197	<0.05	<0.0002	<0.05	<0.05
TP-10-S	11-11.5	Native soil	<0.05	<0.05	1.07	<0.01	<0.05	<0.0002	<0.05	<0.05
TP-12-S	6-6.5	Native soil	<0.05	<0.05	1.65	0.0432	<0.05	<0.0002	0.351	<0.05
TP-14-S	11.5-12	Native soil	<0.05	<0.05	1.28	0.0113	<0.05	<0.0002	0.097	<0.05
Regulatory Level			5.0	5.0	100	1.0	5.0	0.2	5.0	1.0

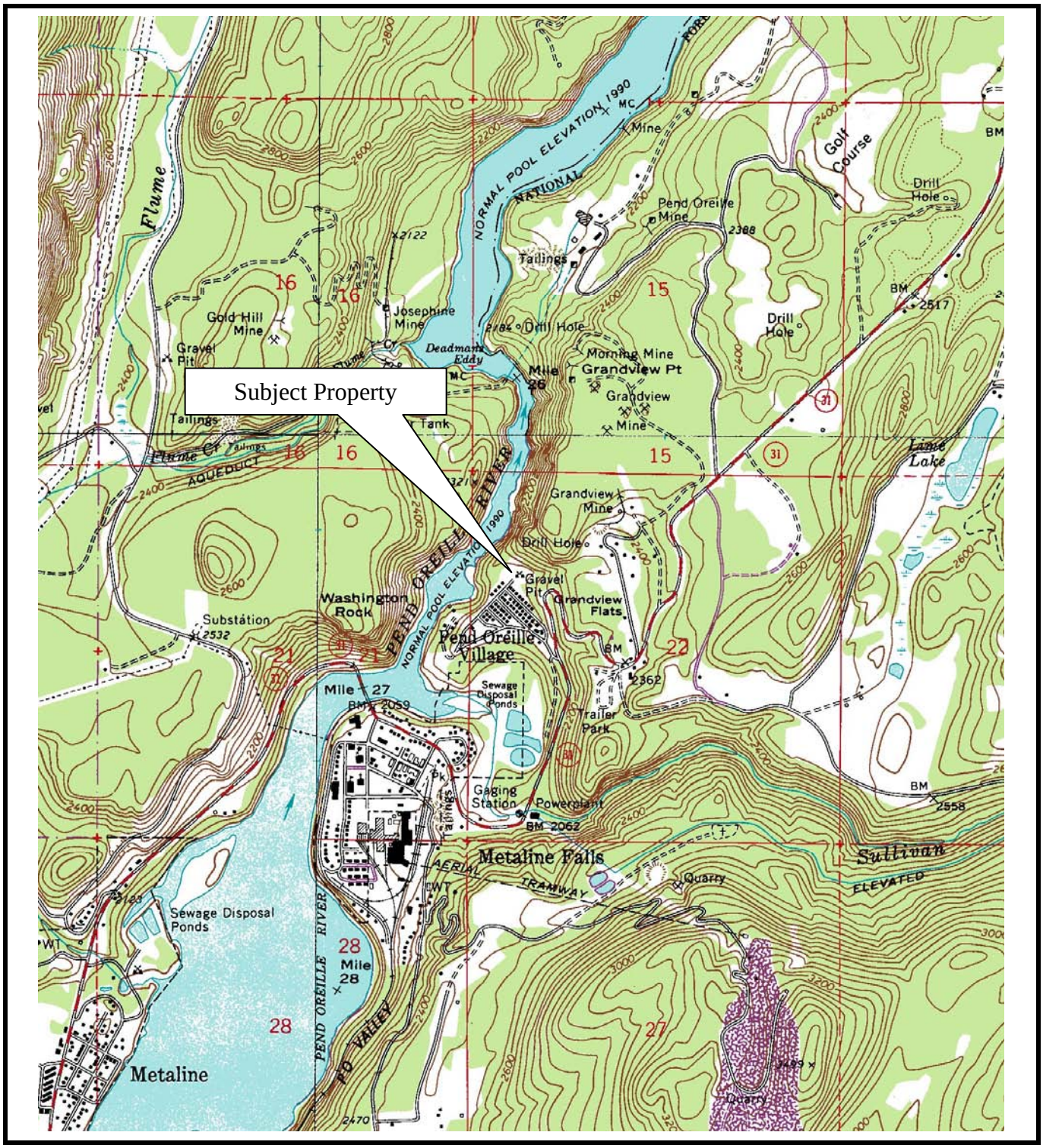
Note:
Boldface type denotes concentration equals or exceeds regulatory level (40 CFR 261.24; WAC 173-303-90)

Table 3-5
Summary of Geotechnical Testing Results

Test		Units	Test Method	Sample Number				
				TP-02-T	**TP-08-T**	**TP-02-S**	**TP-08-S**	**TP-12-S**
Moisture Content		%	ASTM C-566	2.9	2.9	10.2	52.7	38.8
Sieve Analysis			ASTM C-136/ ASTM C-117					
Sieve size	¾"	% passing		-	-	100	-	100
	½"			-	-	98	-	94
	3/8"			-	-	97	100	92
	#4			100	-	95	100-	90
	#10			100-	100	90	99	87
	#16			100-	100-	87	97	84
	#30			98	100-	82	96	80
	#40			94	96	79	91	77
	#100			64	41	68	80	66
	#200			44	19	56	75	55
Specific Gravity			ASTM C-128					
Bulk		unitless		2.665	2.728	-	-	-
Bulk (saturated surface dry)				2.676	2.742	-	-	-
Apparent				2.695	2.766	-	-	-
Absorption		%		0.41	0.50	-	-	-
Dry Density								
10 blows		pcf		77	83	60	34	50
30 blows		pcf		83	88	65	39	59
60 blows		pcf		88	94	69	41	63

Note:
pcf - pounds per cubic foot

FIGURES



USGS 7.5 Minute Topographic Map, Metaline Falls, WA, dated 1956. Scale 1:24,000.

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SITE VICINITY MAP

Teck Cominco American Incorporated
Grandview Tailings Area
Metaline Falls, Washington

January 2007
36298195.00001

FIGURE 1-1

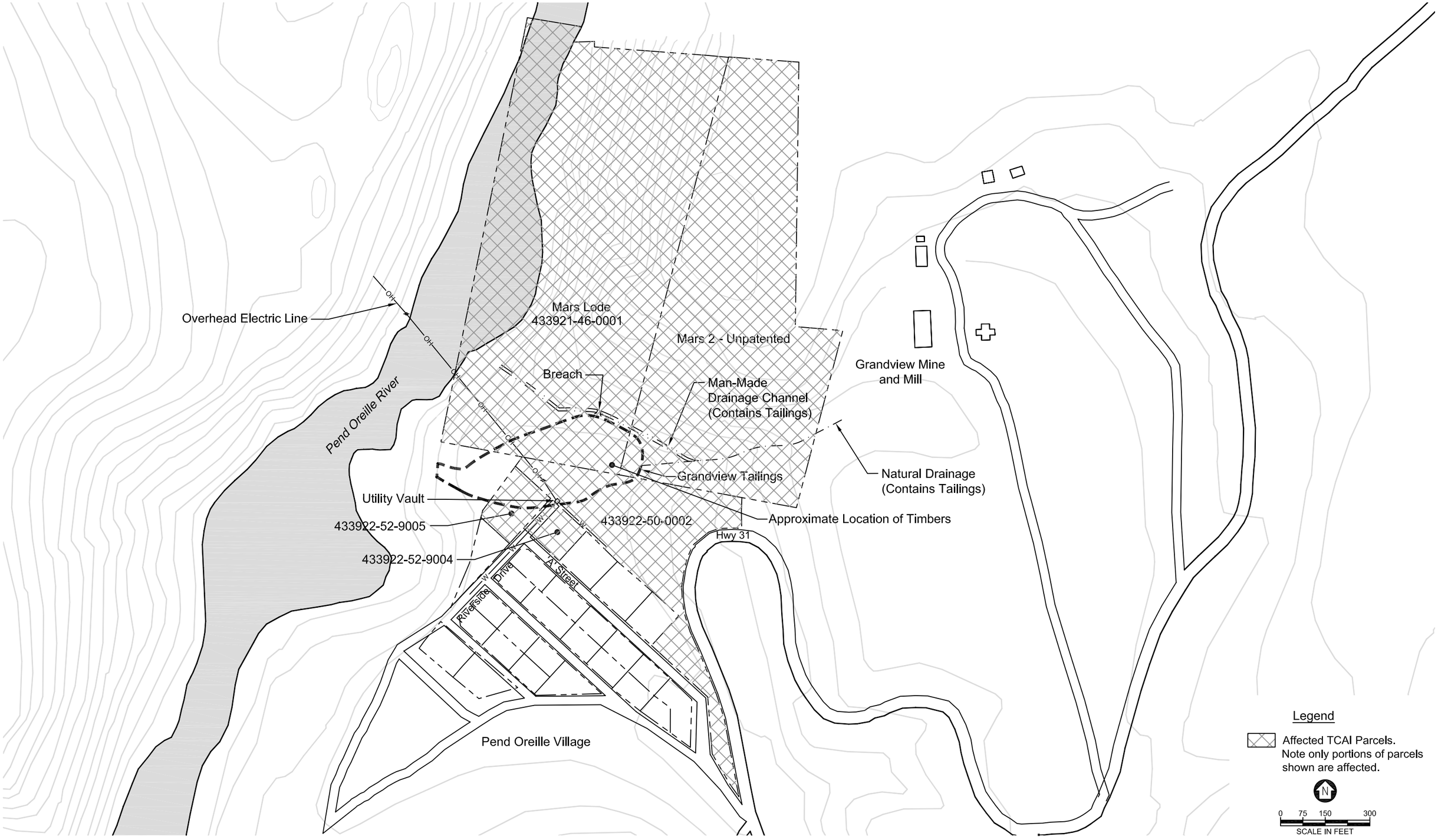

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FIgure 2-1
Grandview Tailings Location Map

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Teck Cominco American Incorporated
Pend Oreille Village, WA
Grandview Mine Tailings

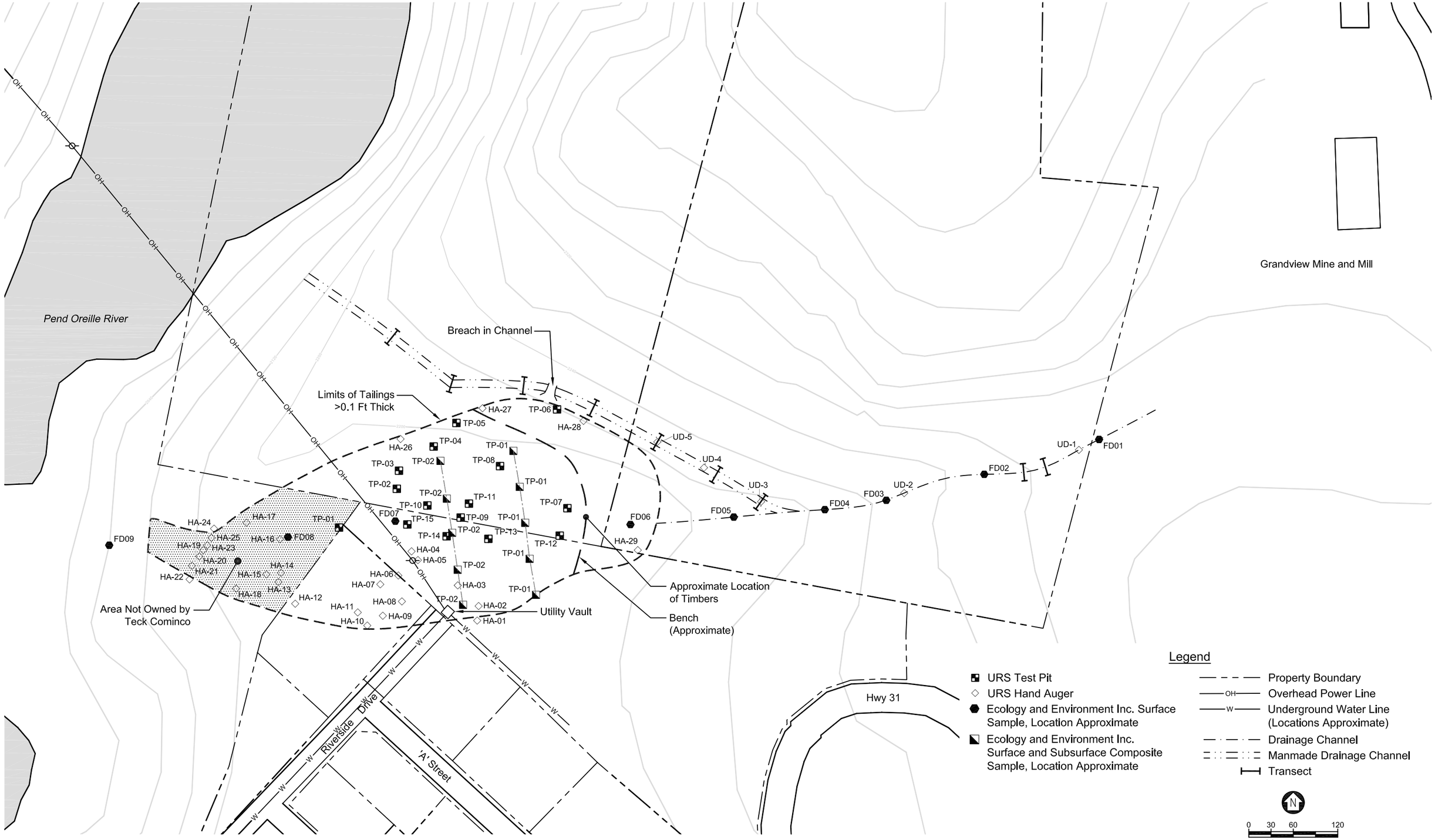

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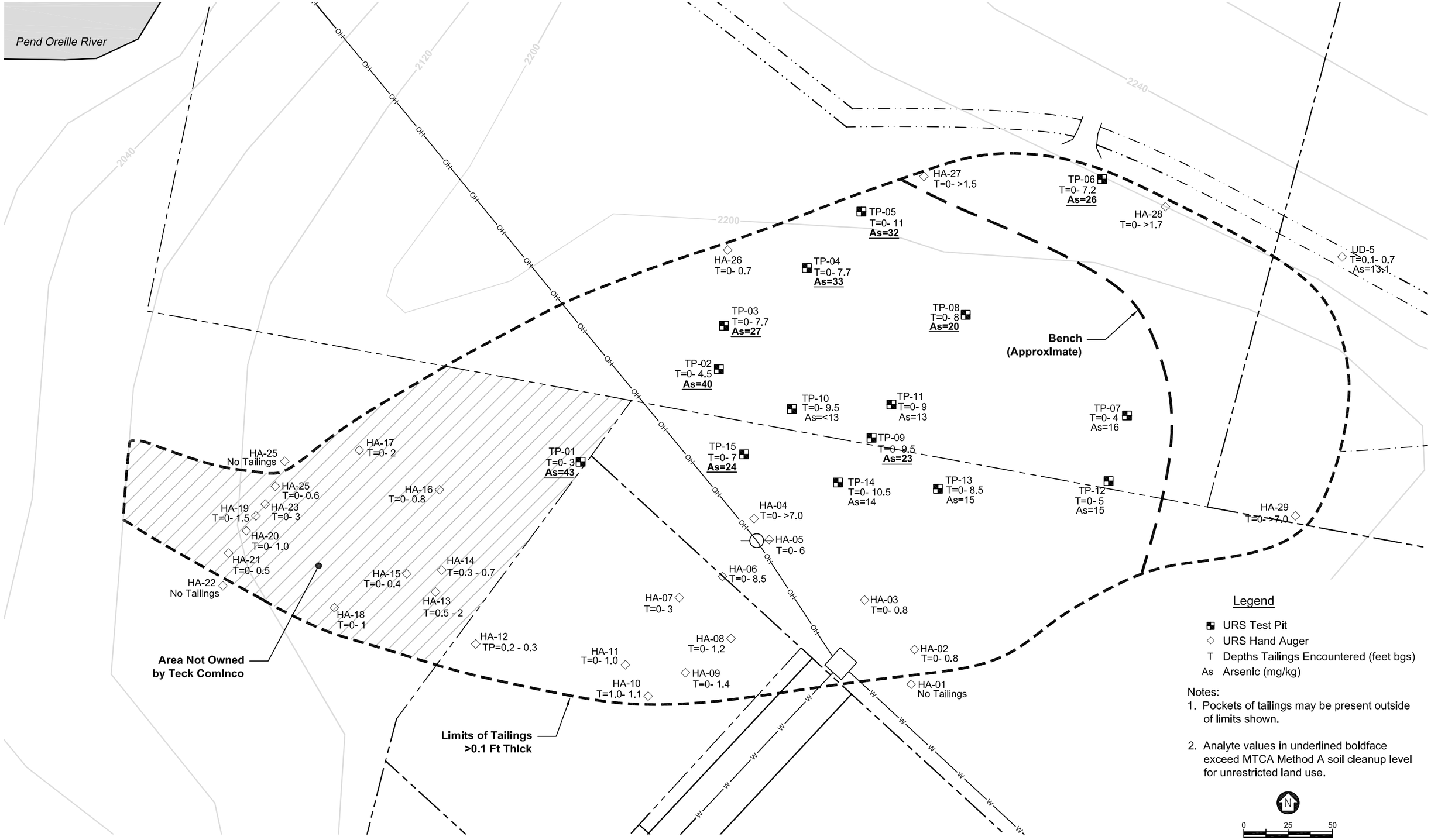
Figure 3-1
Sample Location Map

Teck Cominco American Incorporated
Pend Oreille Village, WA
Grandview Mine Tailings



Legend

- URS Test Pit
- HA URS Hand Auger
- T Depths Tailings Encountered (feet bgs)
- As Arsenic (mg/kg)

Notes:

1. Pockets of tailings may be present outside of limits shown.
2. Analyte values in underlined boldface exceed MTCA Method A soil cleanup level for unrestricted land use.

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0 25 50

SCALE IN FEET

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Figure 3-2

Tailings Depths and Arsenic in Tailings Samples

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Teck Cominco American Incorporated
Pend Oreille Village, WA
Grandview Mine Tailings

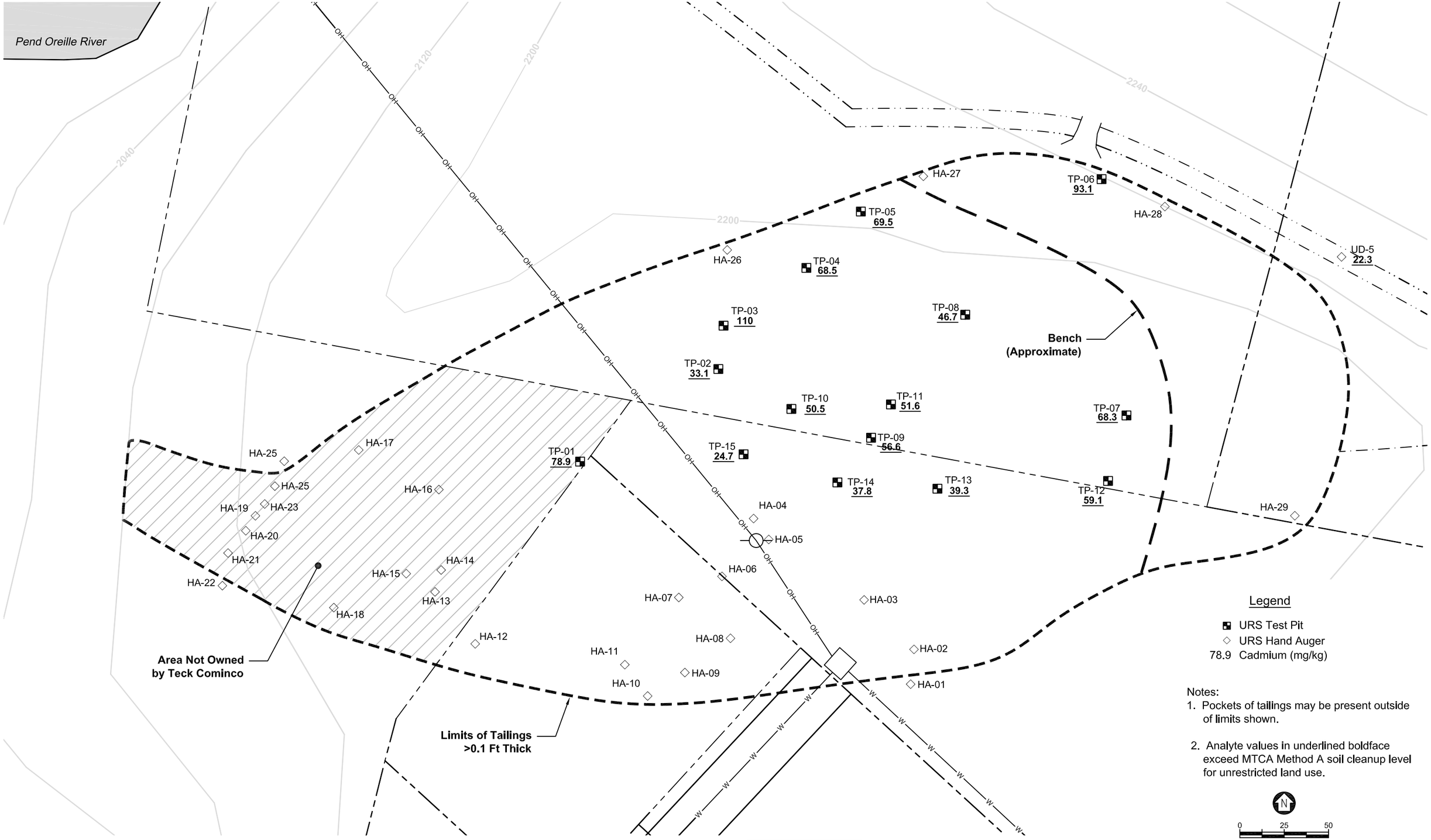

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Figure 3-3
Cadmium in Tailings Samples

Teck Cominco American Incorporated
Pend Oreille Village, WA
Grandview Mine Tailings

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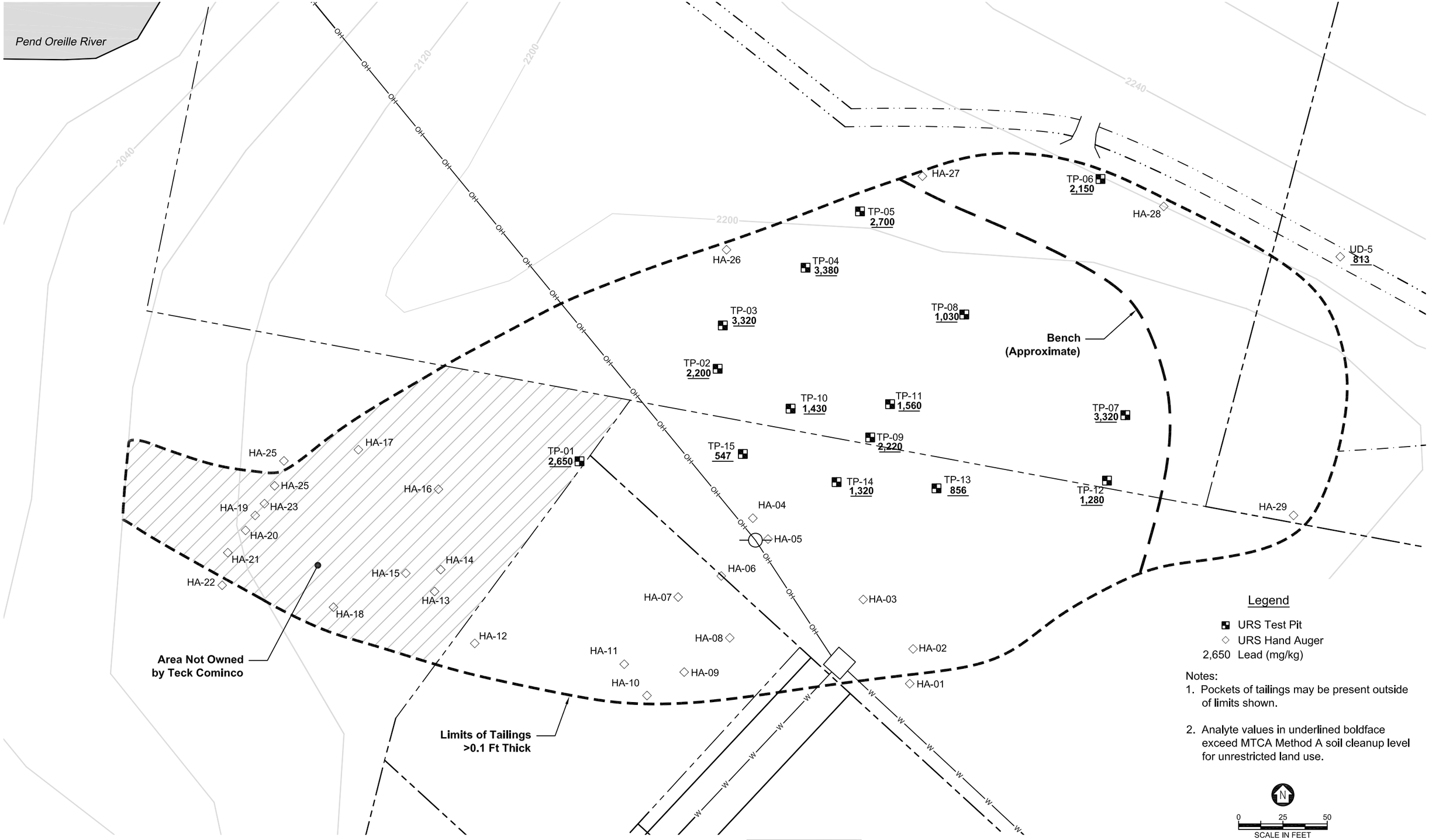

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Figure 3-4
Lead in Tailings Samples

Teck Cominco American Incorporated
Pend Oreille Village, WA
Grandview Mine Tailings

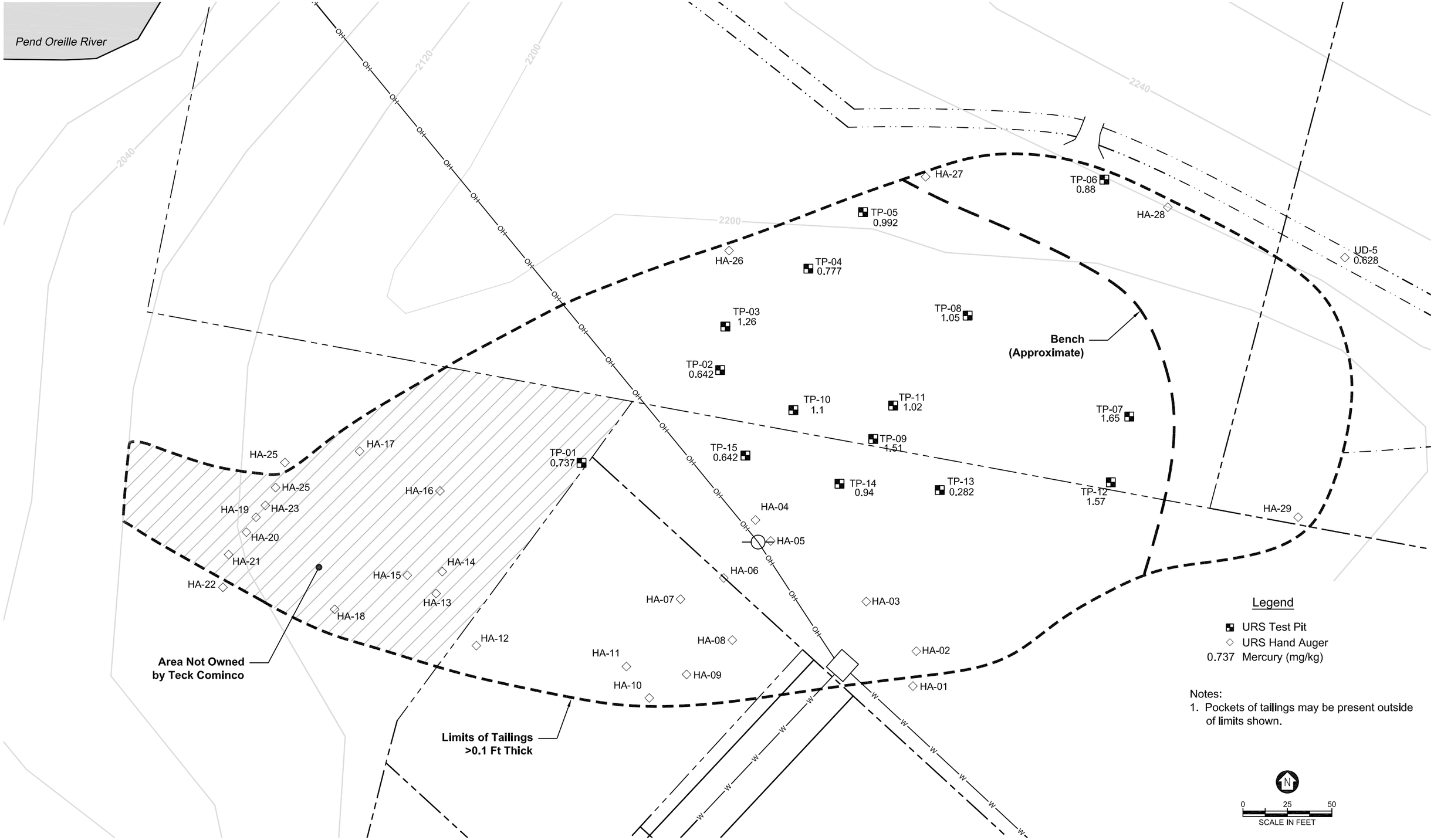

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Figure 3-5
Mercury in Tailings Samples

Teck Cominco American Incorporated
Pend Oreille Village, WA
Grandview Mine Tailings

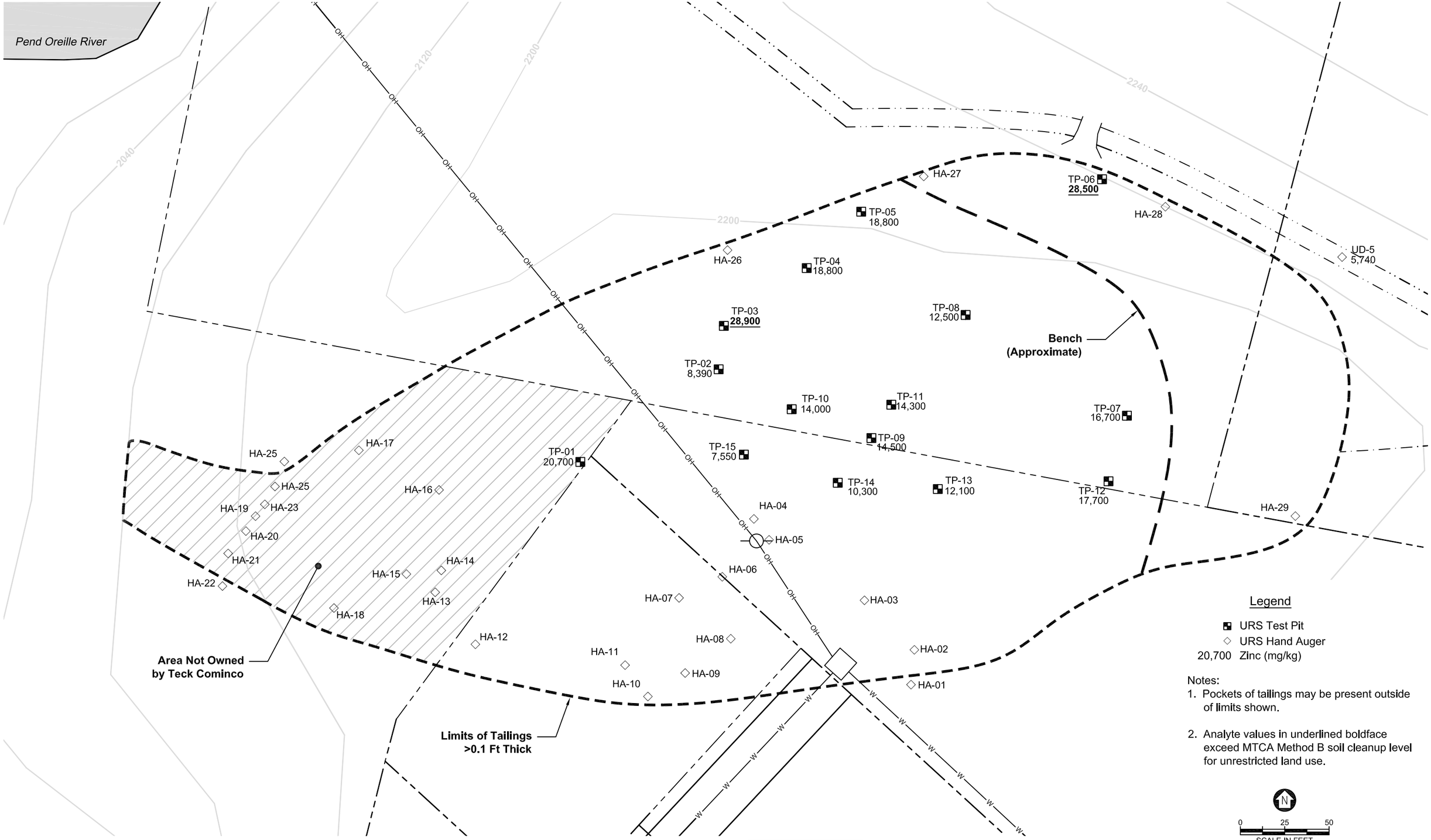

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Figure 3-6
Zinc in Tailings Samples

Teck Cominco American Incorporated
Pend Oreille Village, WA
Grandview Mine Tailings

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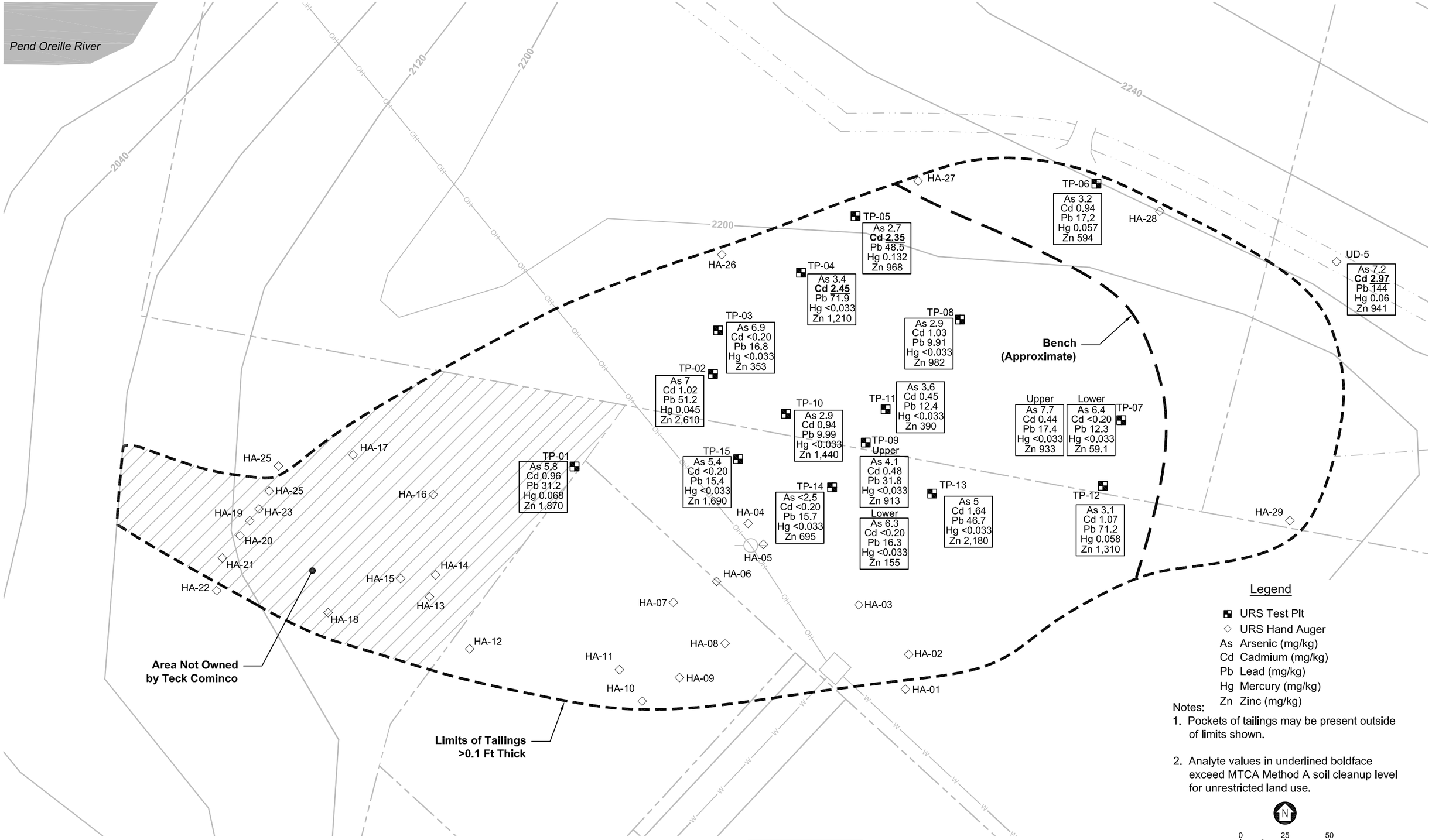

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Figure 3-7
Arsenic, Cadmium, Lead, Mercury, and Zinc in Native Soil Samples

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Teck Cominco American Incorporated
Pend Oreille Village, WA
Grandview Mine Tailings

APPENDIX A

Photographs

Photograph 1: Grandview mine tailings, view toward the east.

Photograph 2: View of Pend Oreille County Public Utility District's water booster station pressure reducing valve (PRV) and power pole. Note Grandview Mine tailings deposits in background. View to the northwest.

Photograph 3: View of Grandview Mine tailings to the west. Note the Pend Oreille County booster station PRV in upper left.

Photograph 4: Photograph of Test Pit TP-07. Note color difference between soil and tailings.

Photograph 5: Photograph of the excavation of Test Pit TP-06. View to the east.

APPENDIX B

Test Pit and Hand Auger Logs

Project: TCAI - Grandview Tailings
Project Location: Pend Orielle Village, Washington
Project Number: 36298195.00001

Log of Test Pit TP-01

Sheet 1 of 1

Date(s) Excavated	**9/26/06**	Logged By	**Mary Shanks**	Checked By	**Dave Enos**
Excavation Equipment	**Excavator Test Pit**	Excavation Contractor	**Maupin Logging and Excavating**	Total Depth of Test Pit	**5 feet**
Excavation Dimensions	**N/Aft x N/Aft**	Pit Alignment		Ground Surface Elevation	**2200 feet**
Groundwater Level	**Not encountered**	Sampling Method(s)	**N/A**		
Location	**Grandview Mine Tailings Location**				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (% <#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings (vegetation at surface)				
	2		TP-01-T			Tailings				
					SM/ ML	Reddish brown sandy SILT				
	4		TP-01-S							
2195						Test pit completed at 5 ft on 9/26/06				
	6									
	8									
2190	10									
	12									
	14									
2185										
	16									

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Project: TCAI - Grandview Tailings Project Location: Pend Orielle Village, Washington Project Number: 36298195.00001	**Log of Test Pit TP-02** Sheet 1 of 1

Date(s) Excavated	**9/26/06**	Logged By	**Mary Shanks**	Checked By	**Dave Enos**
Excavation Equipment	**Excavator Test Pit**	Excavation Contractor	**Maupin Logging and Excavating**	Total Depth of Test Pit	**6 feet**
Excavation Dimensions	**N/Aft x N/Aft**	Pit Alignment		Ground Surface Elevation	**2200 feet**
Groundwater Level	**Not encountered**	Sampling Method(s)	**N/A**		
Location	**Grandview Mine Tailings Location**				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (% <#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings (vegetation at surface)				
	2		TP-02-T				44.0	83	2.9	Specific gravity test was performed on Sample TP-02-T (0.5 - 4.5 ft).
	4									
2195					SM	Reddish brown silty SAND with trace gravel				
	6		TP-02-S				58.0	65	10.2	Specific gravity test was performed on Sample TP-02-S (5.5 - 6.0 ft).
						Test pit completed at 6 ft on 9/26/06				
	8									
2190	10									
	12									
	14									
2185										
	16									

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Project: TCAI - Grandview Tailings
Project Location: Pend Orielle Village, Washington
Project Number: 36298195.00001

Log of Test Pit TP-03

Sheet 1 of 1

Date(s) Excavated	**9/26/06**	Logged By	**Mary Shanks**	Checked By	**Dave Enos**
Excavation Equipment	**Excavator Test Pit**	Excavation Contractor	**Maupin Logging and Excavating**	Total Depth of Test Pit	**9.5 feet**
Excavation Dimensions	**N/Aft x N/Aft**	Pit Alignment		Ground Surface Elevation	**2200 feet**
Groundwater Level	**Not encountered**	Sampling Method(s)	**N/A**		
Location	**Grandview Mine Tailings Location**				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (%<#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings				
	2				SP	Tailings with gray SAND				
2195	4		TP-03-T							
	6				CL/SM	Tailings mixed with yellowish gray sandy CLAY				
	8				PT	Dark gray organic layer				
					SM/ML	Reddish brown sandy SILT with trace gravel				
			TP-03-S		SM/ML	grades to reddish brown gravelly sandy SILT				
2190	10					Test pit completed at 9.5 ft on 9/26/06				
	12									
	14									
2185	16									

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Project: TCAI - Grandview Tailings Project Location: Pend Orielle Village, Washington Project Number: 36298195.00001	**Log of Test Pit TP-04** Sheet 1 of 1

Date(s) Excavated	**9/26/06**	Logged By	**Mary Shanks**	Checked By	**Dave Enos**
Excavation Equipment	**Excavator Test Pit**	Excavation Contractor	**Maupin Logging and Excavating**	Total Depth of Test Pit	**9.5 feet**
Excavation Dimensions	**N/Aft x N/Aft**	Pit Alignment		Ground Surface Elevation	**2200 feet**
Groundwater Level	**Not encountered**	Sampling Method(s)	**N/A**		
Location	**Grandview Mine Tailings Location**				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (% <#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings (vegetation at surface)				
					SP	Tailings with sand				
	2									
			TP-04-T							
	4									
2195					CL/ SM	Tailings mixed with Sandy CLAY				
	6									
					PT	Organic layer				
	8				SM/ ML	Reddish brown sandy SILT				
			TP-04-S							
2190	10					Test pit completed at 9.5 ft on 9/26/06				
	12					DRAFT				
	14									
2185										
	16									

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Project: TCAI - Grandview Tailings
Project Location: Pend Orielle Village, Washington
Project Number: 36298195.00001

Log of Test Pit TP-05

Sheet 1 of 1

Date(s) Excavated	**9/26/06**	Logged By	**Mary Shanks**	Checked By	**Dave Enos**
Excavation Equipment	**Excavator Test Pit**	Excavation Contractor	**Maupin Logging and Excavating**	Total Depth of Test Pit	**14.5 feet**
Excavation Dimensions	**N/Aft x N/Aft**	Pit Alignment		Ground Surface Elevation	**2200 feet**
Groundwater Level	**Not encountered**	Sampling Method(s)	**N/A**		
Location	**Grandview Mine Tailings Location**				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (% <#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings (vegetation at surface)				
	2				SP	Tailings mixed with SAND				
	4									
2195			TP-05-T		CL/ SM	Tailings mixed with sandy CLAY				
	6									
	8					DRAFT				
2190	10									
					PT	Dark gray organic layer				
	12				SM/ ML	Reddish brown sandy SILT with trace gravel				
	14		TP-05-S							
2185						Test pit completed at 14.5 ft on 9/26/06				
	16									

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Project: TCAI - Grandview Tailings
Project Location: Pend Orielle Village, Washington
Project Number: 36298195.00001

Log of Test Pit TP-06

Sheet 1 of 1

Date(s) Excavated	**9/26/06**	Logged By	**Mary Shanks**	Checked By	**Dave Enos**
Excavation Equipment	**Excavator Test Pit**	Excavation Contractor	**Maupin Logging and Excavating**	Total Depth of Test Pit	**10 feet**
Excavation Dimensions	**N/Aft x N/Aft**	Pit Alignment		Ground Surface Elevation	**2200 feet**
Groundwater Level	**Not encountered**	Sampling Method(s)	**N/A**		
Location	**Grandview Mine Tailings Location**				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (% <#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings (vegetation at surface)				
	2				SW	Tailings mixed with dark gray SAND with gravel and trace boulders				
	4				SW	Tailings mixed with dark gray SAND with cobbles				
2195						Gray sandy tailings				
	6		TP-06-T		GP	Boulder				
					PT	Organic layer				
	8				SM	Light brown silty SAND with cobbles				
			TP-06-S							
2190	10					Test pit completed at 10 ft on 9/26/06				
	12									
	14									
2185										
	16									

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Project: TCAI - Grandview Tailings Project Location: Pend Orielle Village, Washington Project Number: 36298195.00001	**Log of Test Pit TP-07** Sheet 1 of 1

Date(s) Excavated	9/26/06	Logged By	Mary Shanks	Checked By	Dave Enos
Excavation Equipment	Excavator Test Pit	Excavation Contractor	Maupin Logging and Excavating	Total Depth of Test Pit	9 feet
Excavation Dimensions	N/Aft x N/Aft	Pit Alignment		Ground Surface Elevation	2200 feet
Groundwater Level	Not encountered	Sampling Method(s)	N/A		
Location	Grandview Mine Tailings Location				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (% <#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings				
		TP	TP-07-T							
	2				CL/SM	Tailings mixed with gray CLAY and SAND				
					SM	Tailings mixed with SAND				
	4					Dark organic layer				
					PT	Reddish brown sandy SILT				
2195		TP	TP-07-S1		SM/ML					
	6					grades to reddish bown sandy SILT with trace gravel and cobbles				
	8									
		TP	TP-07-S2							
						Test pit completed at 9 ft on 9/26/06				
2190	10									
	12					DRAFT				
	14									
2185										
	16									

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Project: TCAI - Grandview Tailings **Project Location: Pend Orielle Village, Washington** **Project Number: 36298195.00001**	**Log of Test Pit TP-08** Sheet 1 of 1

Date(s) Excavated	**9/26/06**	Logged By	**Mary Shanks**	Checked By	**Dave Enos**
Excavation Equipment	**Excavator Test Pit**	Excavation Contractor	**Maupin Logging and Excavating**	Total Depth of Test Pit	**10 feet**
Excavation Dimensions	**N/Aft x N/Aft**	Pit Alignment		Ground Surface Elevation	**2200 feet**
Groundwater Level	**Not encountered**	Sampling Method(s)	**N/A**		
Location	**Grandview Mine Tailings Location**				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (% <#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings mixed with gray SAND				
		TP	08-T				19.0	88.3	2.9	Specific gravity test was performed on Sample TP-08-T (1.0- 1.5 ft).
	2					Tailings mixed with dark gray SAND				
						Tailings mixed with layer of CLAY with sand				
	4									
2195										
	6									
	8				PT	Dark gray organic layer				
					SM/ ML	Reddish brown sandy SILT				
		TP	08-S				75.0	38	52.7	Specific gravity test was performed on Sample Sample TP-08-S (9.5 - 10.0 ft).
2190	10					Test pit completed at 10 ft on 9/26/06				
	12									
	14									
2185										
	16									

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Project: TCAI - Grandview Tailings
Project Location: Pend Orielle Village, Washington
Project Number: 36298195.00001

Log of Test Pit TP-09

Sheet 1 of 1

Date(s) Excavated	**9/26/06**	Logged By	**Mary Shanks**	Checked By	**Dave Enos**
Excavation Equipment	**Excavator Test Pit**	Excavation Contractor	**Maupin Logging and Excavating**	Total Depth of Test Pit	**15.5 feet**
Excavation Dimensions	**N/Aft x N/Aft**	Pit Alignment		Ground Surface Elevation	**2200 feet**
Groundwater Level	**Not encountered**	Sampling Method(s)	**N/A**		
Location	**Grandview Mine Tailings Location**				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (% <#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings				
	2									
	4		TP-09-T		CL/SM	Tailings mixed with yellowish gray CLAY/SAND				
2195										
	6									
	8									
			TP-09-S1		PT	Dark organic layer				
2190	10				SM/ML	Reddish brown sandy SILT				
	12					DRAFT				
	14					grades to brown sandy SILT with trace gravel				
2185			TP-09-S2							
	16					Test pit completed at 15.5 ft on 9/26/06				

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Project: TCAI - Grandview Tailings Project Location: Pend Orielle Village, Washington Project Number: 36298195.00001	**Log of Test Pit TP-10** Sheet 1 of 1

Date(s) Excavated	9/26/06	Logged By	Mary Shanks	Checked By	Dave Enos
Excavation Equipment	Excavator Test Pit	Excavation Contractor	Maupin Logging and Excavating	Total Depth of Test Pit	11.5 feet
Excavation Dimensions	N/Aft x N/Aft	Pit Alignment		Ground Surface Elevation	2200 feet
Groundwater Level	Not encountered	Sampling Method(s)	N/A		
Location	Grandview Mine Tailings Location				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (% <#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings				
	2				SM	Tailings mixed with dark gray SAND				
	4									
2195			TP-10-T							
	6				CL/ SM	Tailings mixed with yellowish sandy CLAY				
	8									
					PT	Dark organic layer				
2190	10				SM/ ML	Reddish brown sandy SILT				
			TP-10-S							
	12					Test pit completed at 11.5 ft on 9/26/06				
	14									
2185										
	16									

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Project: TCAI - Grandview Tailings Project Location: Pend Orielle Village, Washington Project Number: 36298195.00001	**Log of Test Pit TP-11** Sheet 1 of 1

Date(s) Excavated	9/26/06	Logged By	Mary Shanks	Checked By	Dave Enos
Excavation Equipment	Excavator Test Pit	Excavation Contractor	Maupin Logging and Excavating	Total Depth of Test Pit	11 feet
Excavation Dimensions	N/Aft x N/Aft	Pit Alignment		Ground Surface Elevation	2200 feet
Groundwater Level	Not encountered	Sampling Method(s)	N/A		
Location	Grandview Mine Tailings Location				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (% <#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings				
	2				SP	Tailings mixed with dark gray SAND				
	4		TP-11-T		CL	Tailings mixed with yellowish gray CLAY				
2195										
	6									
	8									
					PT	Dark organic layer				
2190	10				SM	Reddish brown silty SAND				
			TP-11-S							
						Test pit completed at 11 ft on 9/26/06				
	12									
	14									
2185										
	16									

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Project: TCAI - Grandview Tailings Project Location: Pend Orielle Village, Washington Project Number: 36298195.00001	**Log of Test Pit TP-12** Sheet 1 of 1

Date(s) Excavated	9/26/06	Logged By	Mary Shanks	Checked By	Dave Enos
Excavation Equipment	Excavator Test Pit	Excavation Contractor	Maupin Logging and Excavating	Total Depth of Test Pit	6.5 feet
Excavation Dimensions	N/Aft x N/Aft	Pit Alignment		Ground Surface Elevation	2200 feet
Groundwater Level	Not encountered	Sampling Method(s)	N/A		
Location	Grandview Mine Tailings Location				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (% <#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings mixed with dark gray SAND				
	2		TP-12-T			Tailings mixed with yellowish gray CLAY				
	4					(A log was encountered during excavation)				
2195						Dark organic layer				
					PT SM/ ML	Reddish brown sandy SILT with trace gravel				
	6		TP-12-S				55.0	57.3	38.8	Specific gravity test was performed on Sample TP-12-S (6.0 - 6.5 ft).
						Test pit completed at 6.5 ft on 9/26/06				
	8									
2190	10									
	12									
	14									
2185										
	16									

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Project: TCAI - Grandview Tailings **Project Location: Pend Orielle Village, Washington** **Project Number: 36298195.00001**	**Log of Test Pit TP-13** Sheet 1 of 1

Date(s) Excavated	**9/26/06**	Logged By	**Mary Shanks**	Checked By	**Dave Enos**
Excavation Equipment	**Excavator Test Pit**	Excavation Contractor	**Maupin Logging and Excavating**	Total Depth of Test Pit	**11 feet**
Excavation Dimensions	**N/Aft x N/Aft**	Pit Alignment		Ground Surface Elevation	**2200 feet**
Groundwater Level	**Not encountered**	Sampling Method(s)	**N/A**		
Location	**Grandview Mine Tailings Location**				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (% <#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings				
					SP	Tailings mixed with dark gray SAND				
	2		TP-13-T							
	4				CL/ SM	Tailings mixed with yellowish sandy CLAY				
2195										
	6									
	8									
					PT	Dark organic layer				
					SM/ ML	Reddish brown sandy SILT				
2190	10					(A stump was encountered during excavation)				
			TP-13-S							
						Test pit completed at 11 ft on 9/26/06				
	12									
	14									
2185										
	16									

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Project: TCAI - Grandview Tailings Project Location: Pend Orielle Village, Washington Project Number: 36298195.00001	**Log of Test Pit TP-14** Sheet 1 of 1

Date(s) Excavated	9/26/06	Logged By	Mary Shanks	Checked By	Dave Enos
Excavation Equipment	Excavator Test Pit	Excavation Contractor	Maupin Logging and Excavating	Total Depth of Test Pit	12 feet
Excavation Dimensions	N/Aft x N/Aft	Pit Alignment		Ground Surface Elevation	2200 feet
Groundwater Level	Not encountered	Sampling Method(s)	N/A		
Location	Grandview Mine Tailings Location				

Elevation feet	Depth, feet	Type	Number	Graphic Log	USCS	MATERIAL DESCRIPTION	Fines Content (% <#200 Sieve)	Dry Unit Weight, pcf	Moisture Content, %	REMARKS AND OTHER TESTS
2200	0					Tailings mixed with reddish brown and dark gray SAND (vegetation at surface)				
	2									
	4									
2195			TP-14-T							
	6									
	8									
2190	10				PT	Dark organic layer				
					SM/ ML	Reddish brown sandy SILT				
			TP-14-S							
	12					Test pit completed at 11 ft on 9/26/06				
	14									
2185										
	16									

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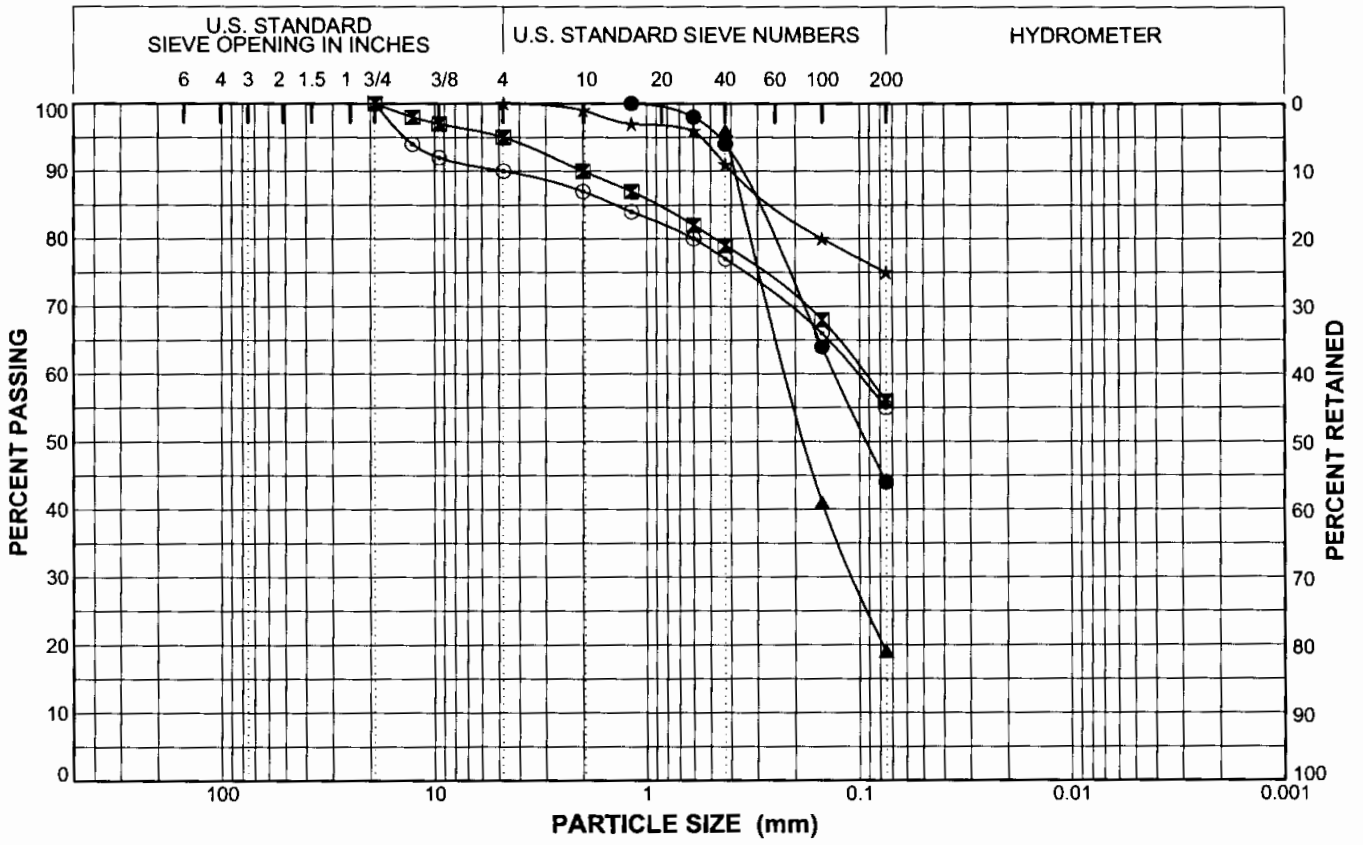
COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	



Sample Number	Symbol	LL	PI	Description
TP-02-T	●			Tailings
TP-02-S	⊠			Reddish brown silty SAND with trace gravel
TP-08-T	▲			Tailings with sand
TP-08-S	★			Reddish brown sandy SILT
TP-12-S	⊙			Reddish brown sandy SILT with gravel

TCA1 - Grandview Tailings
Pend Orielle Village, Washington
36298195.00001

PARTICLE SIZE DISTRIBUTION CURVES

Figure 1

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Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-01** Sheet 1 of 1

Date(s) Drilled	9/25/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	1 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0						SM	Vegetation at surface Brown sand-silt mixture with gravel	
	1							No tailings, stop at 1'.	
	2								
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings
Project Location: Pend Oreille Village, Oregon
Project Number: 36298195

Log of Boring HA-02

Sheet 1 of 1

Date(s) Drilled	9/25/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	1 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Vegetation at surface Gray sandy tailings to 8" bgs	
							SM	Brown sand-silt mixture with gravel	
	1							Stop at 1'.	
	2								
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-03** Sheet 1 of 1

Date(s) Drilled	9/25/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	1 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Vegetation at surface Gray tailings mixed with brown sandy silt to 10" - appears to have been disturbed during construction of water pump nearby	
	1						SM	Brown sandy silt with gravel 10"-12" Stop at 1'.	
	2								
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-04** Sheet 1 of 1

Date(s) Drilled	9/25/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	7 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Vegetation at surface Gray sandy tailings	
	1								
	2							DRAFT	
	3							Tailings moist	
	4								
2195	5							Medium stiff brownish gray sandy clay tailings, moist	
	6								
	7							Wet Stopped at 7' bgs because maximum depth possible with equipment at site. Native soil not located.	
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings
Project Location: Pend Oreille Village, Oregon
Project Number: 36298195

Log of Boring HA-05

Sheet 1 of 1

Date(s) Drilled	9/25/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	7 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Vegetation at surface Gray sandy tailings	
	1								
	2							DRAFT	
	3							Moist tailings	
	4								
2195	5							Wet brownish gray sandy clay tailings	
	6						SM	Thin, dark organics layer, reddish brown sandy silt	
	7							Wood mixed with soil Stop at 7'.	
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-06** Sheet 1 of 1

Date(s) Drilled	9/25/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	7 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Vegetation at surface Gray sandy tailings	
	1								
	2							DRAFT	
	3							Moist tailings Brownish gray sandy clay tailings	
	4						SM	Thin dark brown organics layer Reddish brown sandy silt	
2195	5								
	6								
							ML	With gravel	
	7							Stop at 7'.	
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings
Project Location: Pend Oreille Village, Oregon
Project Number: 36298195

Log of Boring HA-07

Sheet 1 of 1

Date(s) Drilled	9/25/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	4 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Vegetation at surface Gray sandy tailings	
	1								
	2								
	3						SM	Thin dark organics layer Reddish brown sandy silt	
	4						ML	With gravel Stop 4'.	
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-08** Sheet 1 of 1

Date(s) Drilled	9/25/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	2 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Vegetation at surface Gray sandy tailings	
	1						SM	Reddish brown sandy silt at 1.2'	
	2						ML	With gravel Stop at 2'.	
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings
Project Location: Pend Oreille Village, Oregon
Project Number: 36298195

Log of Boring HA-09

Sheet 1 of 1

Date(s) Drilled	**9/25/06**	Logged By	**Mary Shanks**	Checked By	**Dave Enos**
Drilling Method	**Hand Auger**	Drilling Contractor	**Not Applicable**	Total Depth of Borehole	**4 feet**
Drill Rig Type	**Not Applicable**	Drill Bit Size/Type	**3-inch**	Ground Surface Elevation	**2200 feet**
Groundwater Level	**Not Encountered**	Sampling Method	**Not Applicable**	Hammer Data	**Not Applicable**
Borehole Backfill	**Cuttings**	Location	**Grandview Mine Tailings**		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Vegetation at surface Gray sandy tailings	
	1								
							SM	Thin dark organic layer at 1.4' Reddish brown sandy silt	
	2								
	3								
	4							Stop at 4'.	
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings
Project Location: Pend Oreille Village, Oregon
Project Number: 36298195

Log of Boring HA-10

Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	3 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0						SP	Vegetation at surface Brown sandy silt	
	1							Thin layer, 1"-2" thick, gray sandy tailings	
							SM/ ML	Light brown sandy silt with gravel	
	2								
	3							Stop at 3'.	
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-11** Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	2 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Vegetation at surface Gray sandy tailings	
	1						SM	Reddish brown sandy silt	
	2							Stop at 2'.	
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-12** Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	2 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0						SM	Leaves at surface, dark organic layer, dark brown sandy silt	
							SM	Thin layer, about 1" thick, tailings Reddish brown sandy silt	
	1						SM/ ML	Light brown sandy silt with gravel	
	2							Stop at 2'.	
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-13** Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	3 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0						SM	Leaves at surface, dark organic layer, dark brown sandy silt	
								Gray sandy tailings	
	1								
	2						SM	Thin dark organic layer, reddish brown sandy silt	
	3							Stop at 3'.	
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings
Project Location: Pend Oreille Village, Oregon
Project Number: 36298195

Log of Boring HA-14

Sheet 1 of 1

Date(s) Drilled	**9/27/06**	Logged By	**Mary Shanks**	Checked By	**Dave Enos**
Drilling Method	**Hand Auger**	Drilling Contractor	**Not Applicable**	Total Depth of Borehole	**1.2 feet**
Drill Rig Type	**Not Applicable**	Drill Bit Size/Type	**3-inch**	Ground Surface Elevation	**2200 feet**
Groundwater Level	**Not Encountered**	Sampling Method	**Not Applicable**	Hammer Data	**Not Applicable**
Borehole Backfill	**Cuttings**	Location	**Grandview Mine Tailings**		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Dark organic layer at surface Gray sandy tailings at 0.3', tailings 0.4" thick	
								Gray sandy tailings at 0.3', tailings 0.4" thick	
	1						SM	Reddish brown sandy silt from 0.7'-1.2'	
								Stop at 1.2'.	
	2								
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings
Project Location: Pend Oreille Village, Oregon
Project Number: 36298195

Log of Boring HA-15

Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	1.3 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Dark organic layer at surface Gray sandy tailings to 0.4'	
							SM	Reddish brown sandy silt	
	1								
								Stop at 1.3'.	
	2								
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings
Project Location: Pend Oreille Village, Oregon
Project Number: 36298195

Log of Boring HA-16

Sheet 1 of 1

Date(s) Drilled	**9/27/06**	Logged By	**Mary Shanks**	Checked By	**Dave Enos**
Drilling Method	**Hand Auger**	Drilling Contractor	**Not Applicable**	Total Depth of Borehole	**1.3 feet**
Drill Rig Type	**Not Applicable**	Drill Bit Size/Type	**3-inch**	Ground Surface Elevation	**2200 feet**
Groundwater Level	**Not Encountered**	Sampling Method	**Not Applicable**	Hammer Data	**Not Applicable**
Borehole Backfill	**Cuttings**	Location	**Grandview Mine Tailings**		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Dark organic layer at surface Gray sandy tailings	
	1						SM	Wood layer at 0.8' Reddish brown sandy silt	
								Stop at 1.3'.	
	2								
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings
Project Location: Pend Oreille Village, Oregon
Project Number: 36298195

Log of Boring HA-17

Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	2.5 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Dark organic layer at surface Gray sandy tailings	
	1								
	2						SM	Reddish brown sandy silt	
	3							Stop at 2.5'.	
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	Log of Boring HA-18 Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	1 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0						SM	Dark organic layer at surface, leaves Gray sandy tailings layer 1" thick Reddish brown sandy silt	
	1							Stop at 1'.	
	2								
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-19** Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	2 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Dark organic layer at surface, leaves Gray sandy tailings	
	1								
							SM	Dark organic layer at 1.5' Reddish brown sandy silt	
	2							Stop at 2'.	
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-20** Sheet 1 of 1

Date(s) Drilled	**9/27/06**	Logged By	**Mary Shanks**	Checked By	**Dave Enos**
Drilling Method	**Hand Auger**	Drilling Contractor	**Not Applicable**	Total Depth of Borehole	**1.5 feet**
Drill Rig Type	**Not Applicable**	Drill Bit Size/Type	**3-inch**	Ground Surface Elevation	**2200 feet**
Groundwater Level	**Not Encountered**	Sampling Method	**Not Applicable**	Hammer Data	**Not Applicable**
Borehole Backfill	**Cuttings**	Location	**Grandview Mine Tailings**		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Vegetation at surface Gray sandy tailings	
	1						SM	Reddish brown sandy silt	
								Stop at 1.5'.	
	2								
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	Log of Boring HA-21 Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	1 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Vegetation at surface Gray sandy tailings	
							SM	Reddish brown sandy silt at 0.5'	
	1							Stop at 1'.	
	2								
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

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Project: TCAI - Grandview Mine Tailings
Project Location: Pend Oreille Village, Oregon
Project Number: 36298195

Log of Boring HA-22

Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	1 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0						SM	Vegetation at surface Reddish brown sandy silt	
	1							No tailings, stop at 1'.	
	2								
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

DRAFT

URS

ENV W/O WELL T:\ONEWORLD\36298195.00001 GRANDVIEW TAILINGS\36298195.GPJ URSSEA3B.GLB URSSEA3.GDT 10/20/06

Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	Log of Boring HA-23 Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	3.5 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Vegetation at surface Gray sandy tailings	
	1								
								Wood layer a few inches thick	
	2							Tailings with gravel Tailings mixed with reddish soil	
	3						SM	Reddish brown sandy silt	
								Stop at 3.5'.	
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

DRAFT

ENV W/O WELL T:\ONEWORLD\36298195.00001 GRANDVIEW TAILINGS\36298195.GPJ URSSEA3B.GLB URSSEA3.GDT 10/20/06

URS

Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-24** Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	2 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0						SM/ ML	Vegetation at surface Brown sandy silt with gravel	
	1								
	2							No tailings, stop at 2'.	
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

DRAFT

URS

ENV W/O WELL T:\ONEWORLD\36298195.00001 GRANDVIEW TAILINGS\36298195.GPJ URSSEA3B.GLB URSSEA3.GDT 10/20/06

Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-25** Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	1.2 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Vegetation at surface Gray sandy tailings	
	1						SM	Dark organic layer at 0.6' Reddish brown sandy silt	
								Stop at 1.2'.	
	2								
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

DRAFT

ENV W/O WELL T:\ONEWORLD\36298195.00001 GRANDVIEW TAILINGS\36298195.GPJ URSSEA3B.GLB URSSEA3.GDT 10/20/06

URS

Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-26** Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	1 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Dark brown organic layer at surface Gray sandy tailings	
							SM	Reddish brown sandy silt	
	1							Stop at 1'.	
	2								
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

Project: TCAI - Grandview Mine Tailings
Project Location: Pend Oreille Village, Oregon
Project Number: 36298195

Log of Boring HA-27

Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	1.5 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-Inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Dark brown organic layer Gray sandy tailings	
	1								
								Refusal because of rock at 1.5'. Native ground not reached.	
	2								
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

DRAFT

ENV W/O WELL T:\ONEWORLD\36298195.00001 GRANDVIEW TAILINGS\36298195.GPJ URSSEA3B.GLB URSSEA3.GDT 10/20/06

URS

Project: TCAI - Grandview Mine Tailings Project Location: Pend Oreille Village, Oregon Project Number: 36298195	**Log of Boring HA-28** Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	1.7 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Dark organic layer at surface Gray sandy tailings	
	1							Wood layer at 1.3' Tailings with gravel	
	2							Refusal because of rocks at 1.7'. Native ground not reached.	
	3								
	4								
2195	5								
	6								
	7								
	8								
	9								
2190	10								

DRAFT

ENV WO WELL T:\ONEWORLD\36298195.00001 GRANDVIEW TAILINGS\36298195.GPJ URSSEA3B.GLB URSSEA3.GDT 10/20/06

URS

Project: TCAI - Grandview Mine Tailings
Project Location: Pend Oreille Village, Oregon
Project Number: 36298195

Log of Boring HA-29

Sheet 1 of 1

Date(s) Drilled	9/27/06	Logged By	Mary Shanks	Checked By	Dave Enos
Drilling Method	Hand Auger	Drilling Contractor	Not Applicable	Total Depth of Borehole	7 feet
Drill Rig Type	Not Applicable	Drill Bit Size/Type	3-inch	Ground Surface Elevation	2200 feet
Groundwater Level	Not Encountered	Sampling Method	Not Applicable	Hammer Data	Not Applicable
Borehole Backfill	Cuttings	Location	Grandview Mine Tailings		

Elevation, feet	Downhole Depth, feet	SAMPLES Type	SAMPLES Number	Blows/ 6in.	OVM (ppm)	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
2200	0							Organic layer at surface Gray sandy tailings	
	1								
	2								
	3								
	4								
2195	5								
	6								
	7							Stopped at 7' bgs because maximum depth possible with equipment at site. Native soil not reached.	
	8								
	9								
2190	10								

DRAFT

URS

ENV W/O WELL T:\ONEWORLD\36298195.00001 GRANDVIEW TAILINGS\36298195.GPJ URSSEA3B.GLB URSSEA3.GDT 10/20/06

APPENDIX C

Chain of Custody Forms and Laboratory Data Sheets

Temp 10.2°/17.7° KS 9-28 06

Page 1 of 4

CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

FOR SVL USE ONLY
SVL JOB # 125593
TEMP on Receipt:

Table 1. -- Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other_____

Report to Company:	URS Corp.
Contact:	Dan Enos
Address:	920 North Argonne Spokane, WA 99212
Phone Number:	509 928 4413
FAX Number:	509 928 4415
E-mail:	

Invoice Sent To:	Same
Contact:	
Address:	
Phone Number:	
FAX Number:	
PO#:	

Project Name: TCAI - Grandview

Sampler's Signature:

Indicate State of sample origination: WA **USACE?** ☐ Yes ☐ No

	Sample ID Please take care to distinguish between: 1 and I 2 and Z 5 and S Ø and O Thanks!	Collection Date	Collection Time	Collected by: (Init.)	Misc. Matrix Type (From Table 1)	Misc. No. of Containers	Preservative(s) Unpreserved	HNO_3 Filtered	HNO_3 Unfiltered	HCl	H_2SO_4	NaOH	Other (Specify)	Analyses Required: EPA 6000/7000 - Arsenic, Cadmium, lead, mercury, zinc TCLP - RCRA metals	Rush Instructions (Days)	Comments
1	TP-01-S	9-26	8:45	MS	S	1	X							X		4.5-5' bgs
2	TP-01-T	9-26	8:50	MS	3	1	X							X		4.5 m, 2-2.5 bgs
3	TP-02 S	9-26	9:14	MS	3	1	X							X	X	5.5-6' bgs
4	TP 02-T	9-26	9:20	MS	3	1	X							X	X	0.5-4.5' bgs composite
5	TP-03-T	9-26	9:50	MS	S	1	X							X		4-6' bgs composite
6	TP-03-S	9-26	9:57	MS	3	1	X							X		9-9.5 bgs
7	TP-04-S	9-26	11:02	MS	S	1	X							X		9-9.5 bgs
8	TP-04-T	9-26	11:04	MS	3	1	X							X		composite 0-7' bgs
9	TP-05-	9-26	11:41	MS	S	1	X							X		11-11.5 bgs
10	TP-0 T	9-26	11:46	MS	3	1	X							X		1-10' bgs composite

Relinquished by:		Date: 9-27-06	Time: 1740	Received by:	Date: 9/27/06 Time: 1740
Relinquished by:		Date: 9/28/06	Time: 910	Received by:	Date: 9-28-06 Time:

* Sample Reject: ☐ Return ☐ Dispose ☐ Store (30 Days)

White: LAB COPY Yellow: CUSTOMER COPY SVL-COC 9/05

Received by: Kelli Seng 9-28-06 2:15 SVL

Temps 10.2° / 17.7° KS 9-28-06

Page 2 of 4

CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

FOR SVL USE ONLY
SVL JOB # 125593
TEMP on Receipt:

Table 1. -- Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other_____

Report to Company: VRS Corp
Contact:
Address:
Phone Number:
FAX Number:
E-mail:

Invoice Sent To:
Contact:
Address:
Phone Number:
FAX Number:
PO#:

Project Name: TCAI - Grandview
Sampler's Signature: Mary Shanley

Indicate State of sample origination: _____ **USACE?** ☐ Yes ☐ No

	Sample ID (Please take care to distinguish between: 1 and I, 2 and Z, 5 and S, Ø and O. Thanks!)	Collection Date	Collection Time	Collected by: (Init.)	Misc. Matrix Type (From Table 1)	Misc. No. of Containers	Preservative(s) Unpreserved	HNO_3 Filtered	HNO_3 Unfiltered	HCl	H_2SO_4	NaOH	Other (Specify)	Analyses Required: EPA 6000/7000 - Arsenic, Cadmium, Lead, Mercury, Zinc	Analyses Required: TCLP - RCRA metals	Rush Instructions (Days)	Comments
1	TP-06-T	9-26-6	1250	MS	3	1	X							X	X		6-6.5' bgs
2	TP-06-S	9-26-6	1258	MS	3	1	X							X	X		9-9.5' bgs
3	TP-07-S1	9-26-6	1412	MS	3	1	X							X	~~X~~ MS		~~5-5.5' bgs~~ 4.5-5' bgs
4	TP-07-T	9-26-6	1414	MS	3	1	X							X	~~X~~ MS		1-1.5 bgs
5	TP-07-S2	9-26-6	1420	MS	3	1	X							X	~~X~~ MS		8.5-9 bgs
6	TP-08-S	9-26-6	1448	MS	3	1	X							X	~~X~~ MS		9.5' bgs
7	TP-08-T	9-26-6	1452	MS	3	1	X							X			1' bgs
8	TP-09-S01	9-26-6	1530	MS	3	1	X							X	~~X~~ MS		9.5-10' bgs
9	TP-09-T	9-26-6	1533	MS	3	1	X							X	~~X~~ MS		0-9' bgs composite
10	TP-09-S02	9-26-6	1537	MS	3	1	X							X	~~X~~ MS		15-15.5' bgs

* Sample Reject: ☐ Return ☐ Dispose ☐ Store (30 Days)

Comments:
*7. no time on Sample
*8. Id on Sample reads TP-09-S1
10.* Id on Sample reads TP-09-S2
KS 9-28-06

Relinquished by:	Mary Shanley	Date:	9-27-6	Time:	1740	Received by:	
Relinquished by:		Date:	9/27/06	Time:	710	Received by:	
Date:	9/27/06	Time:	1740				
Date:		Time:					

White: LAB COPY Yellow: CUSTOMER COPY SVL-COC 9/05

Received by: Kell. Sug 9-28-06 2:15 SVL

Temps 10.2°/17.7° KS 9-28-06

Page 3 of 4

CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

FOR SVL USE ONLY
SVL JOB # 125593
TEMP on Receipt:

Table 1. -- Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other_____

Report to Company: URS	**Invoice Sent To:**
Contact: Dave Enos	Contact:
Address:	Address:
Phone Number:	Phone Number:
FAX Number:	FAX Number:
E-mail:	PO#:

Project Name: TLAI - Groundwater

Sampler's Signature: Mary Stanley

Indicate State of sample origination: _____ **USACE?** ☐ Yes ☐ No

Please take care to distinguish between:
1 and I
2 and Z
5 and S
Ø and O
Thanks!

	Sample ID	Collection Date	Time	Collected by: (Init.)	Misc. Matrix Type (From Table 1)	No. of Containers	Preservative(s) Unpreserved	HNO_3 Filtered	HNO_3 Unfiltered	HCl	H_2SO_4	NaOH	Other (Specify)	Analyses Required EPA 6000/7000	TCLP - RCRA Metals	Rush Instructions (Days)	Comments
*	TP-10-S	9-26-6	~~1618~~ 1416	MS	3	1	X							X	X		11-11.5 bgs
2	TP-10-T	9-26-6	~~1423~~ 1623	MS	3	1	X							X	X		2-9' bgs composite
3	TP-11-S	9-26-6	1700	MS	3	1	X							X			10.5-11' bgs
*	TP-11-T	9-26-6	1703	MS	3	1	X							X			1-8' bgs Composite
5	TP-12-S	9-26-6	1532	MS	3	1	X							X	X		6-6.5' bgs
*	TP-12-T	9-26-6	1535	MS	3	1	X							X	X		1.5-2' bgs
7	TP-13-S	9-26-6	1800	MS	3	1	X							X			10.5-11' bgs
8	TP-13-T	9-26-6	1802	MS	3	1	X							X			1-3.5' bgs composite
9	TP-14-S	9-26-6	1832	MS	3	1	X							X	X		11.5-12' bgs
10	TP-14-T	9-26-6	1837	MS	3	1	X							X	X		2-9' bgs composite

Comments
* 1. Time on Sample reads 14:18
* 4. no date or time on Sample.
* 6. Sample ID reads TP-12-S
KS 9-28-06

Relinquished by: Mary Stanley	Date: 9-27-6	Time: 1740	Received by:	Date: 9/27/06	Time: 1740
Relinquished by:	Date: 9/27/06	Time: 9:10	Received by:	Date:	Time:

* Sample Reject: ☐ Return ☐ Dispose ☐ Store (30 Days)

White: LAB COPY Yellow: CUSTOMER COPY

SVL-COC 9/05

Received by: Kelli Sent 9-28-06 2:15 SVL

Temps 10.2° / 17.7° KS 9-28-06

Page 4 of 4

CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

FOR SVL USE ONLY
SVL JOB #
125592 ~~125593~~
TEMP on Receipt:

Table 1. -- Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other_____

Report to Company: URS
Contact: Dave Elmos
Address:
Phone Number:
FAX Number:
E-mail:

Invoice Sent To:
Contact:
Address:
Phone Number:
FAX Number:
PO#:

Project Name: TCAI-Grandview
Sampler's Signature: Mary Stanley

Indicate State of sample origination: _____ **USACE?** ☐ Yes ☐ No

	Sample ID (Please take care to distinguish between: 1 and I, 2 and Z, 5 and S, Ø and O. Thanks!)	Collection Date	Collection Time	Collected by: (Init.)	Misc. Matrix Type (From Table 1)	Misc. No. of Containers	Preservative(s) Unpreserved	HNO_3 Filtered	HNO_3 Unfiltered	HCl	H_2SO_4	NaOH	Other (Specify)	Analyses Required: EPA 6000/7000	Rush Instructions (Days)	Comments
1	TP-15-1	9-26-6	1857	MS	3	1	X							X			2-2.5' bgs
2	TP-15-5	9-26-6	1904	MS	3	1	X							X			8-8.5' bgs
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: Mary Stanley Date: 9-27-6 Time: 1740 Received by: [signature]
Relinquished by: [signature] Date: 9/27/06 Time: 910 Received by: [signature] Date: 9/27/06 Time: 1740

* Sample Reject: ☐ Return ☐ Dispose ☐ Store (30 Days)

White: LAB COPY / Yellow: CUSTOMER COPY

SVL-COC 9/05

Received by: Kelli Scott 9-28-06 2:15 SVL

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

REPORT OF ANALYTICAL RESULTS

CLIENT : URS CORP.
PROJECT:

Sample Receipt: 9/28/06
Report Date: 10/13/06

SVL JOB: 125591

SVL ID	CLIENT SAMPLE ID		As 6010B	Cd 6010B	Pb 6010B	Zn 6010B	Hg 7471A	% Sol. 999
S539097	TP-01-S	9/26/06	5.8mg/kg	0.96mg/kg	31.2mg/kg	1870mg/kg	0.068mg/kg	80.7%
S539098	TP-01-T	9/26/06	43mg/kg	78.9mg/kg	2650mg/kg	20700mg/kg	0.737mg/kg	96.1%
S539099	TP-02-S	9/26/06	7.0mg/kg	1.02mg/kg	51.2mg/kg	2610mg/kg	0.045mg/kg	89.7%
S539100	TP-02-T	9/26/06	40mg/kg	33.1mg/kg	2200mg/kg	8390mg/kg	0.642mg/kg	97.9%
S539101	TP-03-T	9/26/06	27mg/kg	110mg/kg	3320mg/kg	28900mg/kg	1.26mg/kg	88.1%
S539102	TP-03-S	9/26/06	6.9mg/kg	<0.20mg/kg	16.80mg/kg	353mg/kg	<0.033mg/kg	80.2%
S539103	TP-04-S	9/26/06	3.4mg/kg	2.45mg/kg	71.9mg/kg	1210mg/kg	<0.033mg/kg	73.9%
S539104	TP-04-T	9/26/06	33mg/kg	68.5mg/kg	3380mg/kg	18800mg/kg	0.777mg/kg	93.2%
S539105	TP-05-S	9/26/06	2.7mg/kg	2.35mg/kg	48.5mg/kg	968mg/kg	0.132mg/kg	68.8%
S539106	TP-05-T	9/26/06	32mg/kg	69.5mg/kg	2700mg/kg	18800mg/kg	0.992mg/kg	94.1%
S539107	TP-06-T	9/26/06	26mg/kg	93.1mg/kg	2150mg/kg	28500mg/kg	0.880mg/kg	95.5%
S539108	TP-06-S	9/26/06	3.2mg/kg	0.94mg/kg	17.20mg/kg	594mg/kg	0.057mg/kg	77.5%
S539109	TP-07-S1	9/26/06	7.7mg/kg	0.44mg/kg	17.40mg/kg	933mg/kg	<0.033mg/kg	91.7%
S539110	TP-07-T	9/26/06	16mg/kg	68.3mg/kg	3320mg/kg	16700mg/kg	1.65mg/kg	96.6%
S539111	TP-07-S2	9/26/06	6.4mg/kg	<0.20mg/kg	12.30mg/kg	59.1mg/kg	<0.033mg/kg	92.8%
S539112	TP-08-S	9/26/06	2.9mg/kg	1.03mg/kg	9.91mg/kg	982mg/kg	<0.033mg/kg	63.6%
S539113	TP-08-T	9/26/06	20mg/kg	46.7mg/kg	1030mg/kg	12500mg/kg	1.05mg/kg	97.3%
S539114	TP-09-S01	9/26/06	4.1mg/kg	0.48mg/kg	31.8mg/kg	913mg/kg	<0.033mg/kg	63.1%
S539115	TP-09-T	9/26/06	23mg/kg	56.6mg/kg	2220mg/kg	14500mg/kg	1.51mg/kg	94.5%
S539116	TP-09-S02	9/26/06	6.3mg/kg	<0.20mg/kg	16.30mg/kg	155mg/kg	<0.033mg/kg	82.9%

Soil Samples: As Received Basis

Certificate: WA C1268
AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

Reviewed By: _____ Date: 10/18/06

SVL ANALYTICAL, INC.

Quality Control Report
Part I Prep Blank and Laboratory Control Sample

Client :URS CORP. SVL JOB No: 125591

Analyte	Method	Matrix	Units	Prep Blank	True	LCS	Found	LCS %R	Analysis Date
Arsenic	6010B	SOIL	mg/kg	<2.5	100		100	100.0	10/12/06
Cadmium	6010B	SOIL	mg/kg	<0.20	100		107	107.0	10/12/06
Lead	6010B	SOIL	mg/kg	<0.75	100		112	112.0	10/12/06
Zinc	6010B	SOIL	mg/kg	1.5	100		106	106.0	10/12/06
Mercury	7471A	SOIL	mg/kg	<0.033	0.834		0.873	104.7	10/04/06

LEGEND:
LCS = Laboratory Control Sample LCS %R = LCS Percent Recovery N/A = Not Applicable

SVL ANALYTICAL, INC.

Quality Control Report
Part II Duplicate and Spike Analysis

Client :URS CORP. SVL JOB No: 125591

Test	Method	Mtx	QC SAMPLE ID	Units	Result	Duplicate Found		MSD RPD%	Matrix Spike Result	SPK ADD		%R	Analysis Date
As	6010B	S	1	mg/kg	5.8	106	M	0.9	107	100		101.2	10/12/06
Cd	6010B	S	1	mg/kg	0.96	107	M	0.9	108	100		107.0	10/12/06
Pb	6010B	S	1	mg/kg	31.2	169	M	1.2	167	100		135.8	10/12/06
Pb	6010B	S	1	mg/kg	31.2	N/A		N/A	137	100	A	105.8	10/12/06
Zn	6010B	S	1	mg/kg	1870	2010	M	3.9	2090	100		R >4S	10/12/06
Hg	7471A	S	1	mg/kg	0.068	0.200	M	5.1	0.190	0.167		73.1	10/04/06

LEGEND:

RPD% = (|SAM - DUP| /((SAM + DUP)/2) * 100) UDL = Both SAM & DUP not detected. *Result or *Found: Interference required dilution.

RPD% = (|SPK - MSD| /((SPK + MSD)/2) * 100) M in Duplicate/MSD column indicates MSD.

SPIKE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added

QC limits for MS recoveries apply only if the spike is at least 1/4 the concentration of the analyte in the sample.

Control limits for the RPD apply only if the concentration of the analyte in the sample is at least five times the reporting limit.

QC Sample 1: SVL SAM No.: 539097 Client Sample ID: TP-01-S

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REPORT OF ANALYTICAL RESULTS

CLIENT : URS CORP.
PROJECT:

Sample Receipt: 9/28/06
Report Date: 10/12/06

SVL JOB: 125592

SVL ID	CLIENT SAMPLE ID		As 6010B	Cd 6010B	Pb 6010B	Zn 6010B	Hg 7471A	% Sol. 999
S539119	TP-10-S	9/26/06	2.9mg/kg	0.94mg/kg	9.99mg/kg	1440mg/kg	<0.033mg/kg	59.7%
S539120	TP-10-T	9/26/06	<13*mg/kg	50.5mg/kg	1430mg/kg	14000mg/kg	1.10mg/kg	94.3%
S539121	TP-11-S	9/26/06	3.6mg/kg	0.45mg/kg	12.40mg/kg	390mg/kg	<0.033mg/kg	67.3%
S539122	TP-11-T	9/26/06	13mg/kg	51.6mg/kg	1560mg/kg	14300mg/kg	1.02mg/kg	94.3%
S539123	TP-12-S	9/26/06	3.1mg/kg	1.07mg/kg	71.2mg/kg	1310mg/kg	0.058mg/kg	80.4%
S539124	TP-12-T	9/26/06	15mg/kg	59.1mg/kg	1280mg/kg	17700mg/kg	1.57mg/kg	93.8%
S539125	TP-13-S	9/26/06	5.0mg/kg	1.64mg/kg	46.7mg/kg	2180mg/kg	<0.033mg/kg	70.4%
S539126	TP-13-T	9/26/06	15mg/kg	39.3mg/kg	856mg/kg	12100mg/kg	0.282mg/kg	94.2%
S539127	TP-14-S	9/26/06	<2.5mg/kg	<0.20mg/kg	15.70mg/kg	695mg/kg	<0.033mg/kg	60.3%
S539128	TP-14-T	9/26/06	14mg/kg	37.8mg/kg	1320mg/kg	10300mg/kg	0.940mg/kg	85.2%
S539129	TP-15-T	9/26/06	24mg/kg	24.7mg/kg	547mg/kg	7550mg/kg	0.642mg/kg	97.6%
S539130	TP-15-S	9/26/06	5.4mg/kg	<0.20mg/kg	15.40mg/kg	1690mg/kg	<0.033mg/kg	77.8%

*Elevated Detection Limit Due to Matrix Interference.
Soil Samples: As Received Basis

Certificate: WA C1268
AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

Reviewed By: _____ Date: 10/12/06

SVL ANALYTICAL, INC.

Quality Control Report
Part I Prep Blank and Laboratory Control Sample

Client :URS CORP. SVL JOB No: 125592

Analyte	Method	Matrix	Units	Prep Blank	True	LCS	Found	LCS %R	Analysis Date
Arsenic	6010B	SOIL	mg/kg	<2.5	100		97.0	97.0	10/12/06
Cadmium	6010B	SOIL	mg/kg	<0.20	100		105	105.0	10/12/06
Lead	6010B	SOIL	mg/kg	<0.75	100		111	111.0	10/12/06
Zinc	6010B	SOIL	mg/kg	<1.0	100		113	113.0	10/12/06
Mercury	7471A	SOIL	mg/kg	<0.033	0.834		0.853	102.3	10/04/06

LEGEND:
LCS = Laboratory Control Sample LCS %R = LCS Percent Recovery N/A = Not Applicable

SVL ANALYTICAL, INC.

Quality Control Report
Part II Duplicate and Spike Analysis

Client :URS CORP. SVL JOB No: 125592

Test	Method	Mtx	QC SAMPLE ID Units	Result	Duplicate or MSD Found		RPD%	Matrix Spike Result	SPK ADD	%R	Analysis Date
As	6010B	S	1 mg/kg	2.9	101	M	1.0	102	100	99.1	10/12/06
Cd	6010B	S	1 mg/kg	0.94	103	M	0.0	103	100	102.1	10/12/06
Pb	6010B	S	1 mg/kg	9.99	119	M	1.7	117	100	107.0	10/12/06
Zn	6010B	S	1 mg/kg	1440	1590	M	15.6	1360	100	R >4S	10/12/06
Hg	7471A	S	1 mg/kg	<0.033	0.175	M	1.1	0.173	0.167	103.6	10/04/06

LEGEND:
RPD% = (|SAM - DUP| /((SAM + DUP)/2) * 100) UDL = Both SAM & DUP not detected. *Result or *Found: Interference required dilution.
RPD% = (|SPK - MSD| /((SPK + MSD)/2) * 100) M in Duplicate/MSD column indicates MSD.
SPIKE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added
QC limits for MS recoveries apply only if the spike is at least 1/4 the concentration of the analyte in the sample.
Control limits for the RPD apply only if the concentration of the analyte in the sample is at least five times the reporting limit.
QC Sample 1: SVL SAM No.: 539119 Client Sample ID: TP-10-S

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REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : URS CORP.
SVL JOB # : 125593
SVL SAMPLE # : 539135

CLIENT SAMPLE ID: TP-02-S
Sample Collected: 9/26/06 9:14
Sample Receipt : 9/28/06
Date of Report : 10/13/06

Sample Matrix: Solid Waste
Extraction : TCLP **
Extracted: 10/11/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	10/12/06
Barium	2.24	mg/L Ext		100.0	6010B	10/12/06
Cadmium	0.0170	mg/L Ext		1.0	6010B	10/12/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	10/12/06
Lead	<0.050	mg/L Ext		5.0	6010B	10/12/06
Selenium	0.06	mg/L Ext		1.0	6010B	10/12/06

** Sample extracted according to EPA method 1311 (TCLP).
Tests:TCLP METALS-RCRA|
Certificate: WA C1268

Reviewed By: N Glenn Date 10/13/06
10/13/06 15:20

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

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REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : URS CORP.
SVL JOB # : 125593
SVL SAMPLE # : 539136

CLIENT SAMPLE ID: TP-02-T
Sample Collected: 9/26/06 9:20
Sample Receipt : 9/28/06
Date of Report : 10/13/06

Sample Matrix: Solid Waste
Extraction : TCLP **
Extracted: 10/11/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	10/12/06
Barium	<1.00	mg/L Ext		100.0	6010B	10/12/06
Cadmium	0.328	mg/L Ext		1.0	6010B	10/12/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	10/12/06
Lead	5.23	mg/L Ext		5.0	6010B	10/12/06
Selenium	<0.05	mg/L Ext		1.0	6010B	10/12/06

** Sample extracted according to EPA method 1311 (TCLP).
Tests:TCLP METALS-RCRA
Certificate: WA C1268

Reviewed By: NSkri Date 10/13/06
10/13/06 15:20

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

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REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : URS CORP.
SVL JOB # : 125593
SVL SAMPLE # : 539137

CLIENT SAMPLE ID: TP-06-T
Sample Collected: 9/26/06 12:50
Sample Receipt : 9/28/06
Date of Report : 10/13/06

Sample Matrix: Solid Waste
Extraction : TCLP **
Extracted: 10/11/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	10/12/06
Barium	<1.00	mg/L Ext		100.0	6010B	10/12/06
Cadmium	0.623	mg/L Ext		1.0	6010B	10/12/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Mercury	0.00025	mg/L Ext		0.2	7470A	10/12/06
Lead	7.99	mg/L Ext		5.0	6010B	10/12/06
Selenium	<0.05	mg/L Ext		1.0	6010B	10/12/06

** Sample extracted according to EPA method 1311 (TCLP).
Tests:TCLP METALS-RCRA
Certificate: WA C1268

Reviewed By: NSlm Date 10/13/06
10/13/06 15:20

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

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REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : URS CORP.
SVL JOB # : 125593
SVL SAMPLE # : 539138

CLIENT SAMPLE ID: TP-06-S
Sample Collected: 9/26/06 12:58
Sample Receipt : 9/28/06
Date of Report : 10/13/06

Sample Matrix: Solid Waste
Extraction : TCLP **
Extracted: 10/11/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	10/12/06
Barium	<1.00	mg/L Ext		100.0	6010B	10/12/06
Cadmium	0.0197	mg/L Ext		1.0	6010B	10/12/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	10/12/06
Lead	<0.050	mg/L Ext		5.0	6010B	10/12/06
Selenium	<0.05	mg/L Ext		1.0	6010B	10/12/06

** Sample extracted according to EPA method 1311 (TCLP).
Tests:TCLP METALS-RCRA
Certificate: WA C1268

Reviewed By: NSmi Date 10/13/06
10/13/06 15:20

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

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REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : URS CORP.
SVL JOB # : 125593
SVL SAMPLE # : 539139

CLIENT SAMPLE ID: TP-10-S
Sample Collected: 9/26/06 16:18
Sample Receipt : 9/28/06
Date of Report : 10/13/06

Sample Matrix: Solid Waste
Extraction : TCLP **
Extracted: 10/11/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	10/12/06
Barium	1.07	mg/L Ext		100.0	6010B	10/12/06
Cadmium	<0.0100	mg/L Ext		1.0	6010B	10/12/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	10/12/06
Lead	<0.050	mg/L Ext		5.0	6010B	10/12/06
Selenium	<0.05	mg/L Ext		1.0	6010B	10/12/06

** Sample extracted according to EPA method 1311 (TCLP).
Tests:TCLP METALS-RCRA
Certificate: WA C1268

Reviewed By: _____ Date 10/13/06
10/13/06 15:20

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

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REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : URS CORP.
SVL JOB # : 125593
SVL SAMPLE # : 539140

CLIENT SAMPLE ID: TP-10-T
Sample Collected: 9/26/06 16:27
Sample Receipt : 9/28/06
Date of Report : 10/13/06

Sample Matrix: Solid Waste
Extraction : TCLP **
Extracted: 10/11/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	10/12/06
Barium	<1.00	mg/L Ext		100.0	6010B	10/12/06
Cadmium	0.420	mg/L Ext		1.0	6010B	10/12/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	10/12/06
Lead	6.59	mg/L Ext		5.0	6010B	10/12/06
Selenium	<0.05	mg/L Ext		1.0	6010B	10/12/06

** Sample extracted according to EPA method 1311 (TCLP).
Tests:TCLP METALS-RCRA|
Certificate: WA C1268

Reviewed By: NSlevin Date 10/13/06
10/13/06 15:20

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

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REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : URS CORP.
SVL JOB # : 125593
SVL SAMPLE # : 539141

CLIENT SAMPLE ID: TP-12-S
Sample Collected: 9/26/06 15:32
Sample Receipt : 9/28/06
Date of Report : 10/13/06

Sample Matrix: Solid Waste
Extraction : TCLP **
Extracted: 10/11/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	10/12/06
Barium	1.65	mg/L Ext		100.0	6010B	10/12/06
Cadmium	0.0432	mg/L Ext		1.0	6010B	10/12/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	10/12/06
Lead	0.351	mg/L Ext		5.0	6010B	10/12/06
Selenium	<0.05	mg/L Ext		1.0	6010B	10/12/06

** Sample extracted according to EPA method 1311 (TCLP).
Tests:TCLP METALS-RCRA
Certificate: WA C1268

Reviewed By: NSmi Date 10/13/06
10/13/06 15:20

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

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REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : URS CORP.
SVL JOB # : 125593
SVL SAMPLE # : 539142

CLIENT SAMPLE ID: TP-12-T
Sample Collected: 9/26/06 15:35
Sample Receipt : 9/28/06
Date of Report : 10/13/06

Sample Matrix: Solid Waste
Extraction : TCLP **
Extracted: 10/11/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	10/12/06
Barium	<1.00	mg/L Ext		100.0	6010B	10/12/06
Cadmium	0.778	mg/L Ext		1.0	6010B	10/12/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	10/12/06
Lead	8.72	mg/L Ext		5.0	6010B	10/12/06
Selenium	<0.05	mg/L Ext		1.0	6010B	10/12/06

** Sample extracted according to EPA method 1311 (TCLP).
Tests:TCLP METALS-RCRA
Certificate: WA C1268

Reviewed By: NBuin Date 10/13/06
10/13/06 15:20

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

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REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : URS CORP.
SVL JOB # : 125593
SVL SAMPLE # : 539143

CLIENT SAMPLE ID: TP-14-S
Sample Collected: 9/26/06 18:32
Sample Receipt : 9/28/06
Date of Report : 10/13/06

Sample Matrix: Solid Waste
Extraction : TCLP **
Extracted: 10/11/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	10/12/06
Barium	1.28	mg/L Ext		100.0	6010B	10/12/06
Cadmium	0.0113	mg/L Ext		1.0	6010B	10/12/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	10/12/06
Lead	0.097	mg/L Ext		5.0	6010B	10/12/06
Selenium	<0.05	mg/L Ext		1.0	6010B	10/12/06

** Sample extracted according to EPA method 1311 (TCLP).
Tests:TCLP METALS-RCRA
Certificate: WA C1268

Reviewed By: NBaui Date 10/13/06
10/13/06 15:20

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

SVL ANALYTICAL, INC.
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REPORT OF ANALYTICAL RESULTS (TCLP)

CLIENT : URS CORP.
SVL JOB # : 125593
SVL SAMPLE # : 539144

CLIENT SAMPLE ID: TP-14-T
Sample Collected: 9/26/06 18:37
Sample Receipt : 9/28/06
Date of Report : 10/13/06

Sample Matrix: Solid Waste
Extraction : TCLP **
Extracted: 10/11/06

Determination	Result	Units	Dil'n	TCLP Reg. Limit	Method	Analysis Date
Silver	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Arsenic	<0.050	mg/L Ext		5.0	6010B	10/12/06
Barium	<1.00	mg/L Ext		100.0	6010B	10/12/06
Cadmium	0.413	mg/L Ext		1.0	6010B	10/12/06
Chromium	<0.0500	mg/L Ext		5.0	6010B	10/12/06
Mercury	<0.00020	mg/L Ext		0.2	7470A	10/12/06
Lead	8.32	mg/L Ext		5.0	6010B	10/12/06
Selenium	<0.05	mg/L Ext		1.0	6010B	10/12/06

** Sample extracted according to EPA method 1311 (TCLP).
Tests:TCLP METALS-RCRA|
Certificate: WA C1268

Reviewed By: _____ Date 10/13/06
10/13/06 15:20

AZ: AZ0538 CA: NO. 2080 CO: 9/1/05 ID: ID00019 MT: 6/6/05 NV: 8/1/05 WA: C1268

SVL ANALYTICAL, INC.

Quality Control Report
Part I Prep Blank and Laboratory Control Sample

Client :URS CORP.

SVL JOB No: 125593

Analyte	Method	Matrix	Units	Prep Blank	True	LCS	Found	LCS %R	Analysis Date
Silver	6010B	ESOIL	mg/L Ext	<0.0500	1.00		1.08	108.0	10/12/06
Arsenic	6010B	ESOIL	mg/L Ext	<0.050	1.00		1.14	114.0	10/12/06
Barium	6010B	ESOIL	mg/L Ext	<1.00	20.0		20.2	101.0	10/12/06
Cadmium	6010B	ESOIL	mg/L Ext	<0.0100	0.200		0.201	100.5	10/12/06
Chromium	6010B	ESOIL	mg/L Ext	<0.0500	1.00		1.06	106.0	10/12/06
Lead	6010B	ESOIL	mg/L Ext	<0.050	1.00		1.09	109.0	10/12/06
Selenium	6010B	ESOIL	mg/L Ext	<0.05	0.20		0.20	100.0	10/12/06
Mercury	7470A	ESOIL	mg/L Ext	<0.00020	0.00500		0.00539	107.8	10/12/06

LEGEND:
LCS = Laboratory Control Sample LCS %R = LCS Percent Recovery N/A = Not Applicable

SVL ANALYTICAL, INC.

Quality Control Report
Part II Duplicate and Spike Analysis

Client :URS CORP. SVL JOB No: 125593

Test	Method	Mtx	QC SAMPLE ID	Units	Result	Duplicate or MSD Found		RPD%	Matrix Spike Result	SPK ADD		%R	Analysis Date
Ag	6010B	E	1	mg/L	Ex <0.0500	1.04	M	1.0	1.05	1.00		105.0	10/12/06
As	6010B	E	1	mg/L	Ex <0.050	1.28	M	0.8	1.27	1.00		127.0	10/12/06
As	6010B	E	1	mg/L	Ex <0.050	N/A		N/A	1.14	1.00	A	114.0	10/12/06
Ba	6010B	E	1	mg/L	Ex 2.24	21.8	M	0.5	21.7	20.0		97.3	10/12/06
Cd	6010B	E	1	mg/L	Ex 0.0170	0.237	M	2.1	0.232	0.200		107.5	10/12/06
Cr	6010B	E	1	mg/L	Ex <0.0500	1.04	M	1.0	1.03	1.00		103.0	10/12/06
Pb	6010B	E	1	mg/L	Ex <0.050	1.06	M	0.9	1.05	1.00		105.0	10/12/06
Se	6010B	E	1	mg/L	Ex 0.06	0.25	M	0.0	0.25	0.200		95.0	10/12/06
Hg	7470A	E	1	mg/L	Ex <0.00020	0.00110	M	0.9	0.00111	0.0010		111.0	10/12/06

LEGEND:

RPD% = (|SAM - DUP| /((SAM + DUP)/2) * 100) UDL = Both SAM & DUP not detected. *Result or *Found: Interference required dilution.

RPD% = (|SPK - MSD| /((SPK + MSD)/2) * 100) M in Duplicate/MSD column indicates MSD.

SPIKE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added

QC limits for MS recoveries apply only if the spike is at least 1/4 the concentration of the analyte in the sample.

Control limits for the RPD apply only if the concentration of the analyte in the sample is at least five times the reporting limit.

QC Sample 1: SVL SAM No.: 539135 Client Sample ID: TP-02-S

TCLP Extraction Log

PART I

JOB#: 125593

SVL ANALYTICAL, INC.

CASE #: SAS #: SDG #:

SVL#	M	ClientID	Init. Wt.	mls H2O	Init. pH	mls 1N HCl	pH	mls ext. fluid/type	Sample Wt.	Final pH
pH 4 Buffer					3.99		3.99			4.00
pH 7 Buffer					7.00		7.00			7.01
539133	ES	EXTRACTION FLUID 1								4.93
~~539134~~	~~ES~~	~~EXTRACTION FLUID 2~~								
539135	ES	TP-02-S	5g	96.5mls	7.78	3.5mls	1.85	2000mls#1	100g	5.10
539136	ES	TP-02-T	5g	96.5mls	9.38	3.5mls	3.83	2000mls#1	100g	6.26
539137	ES	TP-06-T	5g	96.5mls	9.25	3.5mls	2.89	2000mls#1	100g	6.32
539138	ES	TP-06-S	5g	96.5mls	8.64	3.5mls	1.87	2000mls#1	100g	6.08
539139	ES	TP-10-S	5g	96.5mls	7.75	3.5mls	1.74	2000mls#1	100g	5.02
539140	ES	TP-10-T	5g	96.5mls	9.19	3.5mls	4.04	2000mls#1	100g	6.26
539141	ES	TP-12-S	5g	96.5mls	8.43	3.5mls	1.79	2000mls#1	100g	5.07
539142	ES	TP-12-T	5g	96.5mls	9.29	3.5mls	2.62	2000mls#1	100g	6.26
539143	ES	TP-14-S	5g	96.5mls	8.34	3.5mls	1.88	2000mls#1	100g	5.01
539144	ES	TP-14-T	5g	96.5mls	8.96	3.5mls	4.94	2000mls#1	100g	6.23

Extraction Started By: [signature] Date/Time: 10/11/06 1600

Extraction Completed By: [signature] Date/Time: 10/12/06 1000

Client: URS CORP.

Received: 9/28/06

v3.0

Soil Job also

TCLP Extraction Log
PART II

JOB#: 125593
SVL ANALYTICAL, INC.

CASE #: SAS #: SDG #:

SVL#	M	ClientID	Ext. Fluid pH	Multi-phasic Y/N	% Solids Wet	% Solids Dry	% Solids %	Part Size Reduction Y/N	Sample Filtration	Air Temp.	RPM
539133	ES	EXTRACTION FLUID 1	4.93								
~~539134~~	~~ES~~	~~EXTRACTION FLUID 2~~									
539135	ES	TP-02-S	4.93	N			100%	N	Y	22°C/24°C	30
539136	ES	TP-02-T	4.93	N			100%	N	Y	22°C/24°C	30
539137	ES	TP-06-T	4.93	N			100%	N	Y	22°C/24°C	30
539138	ES	TP-06-S	4.93	N			100%	N	Y	22°C/24°C	30
539139	ES	TP-10-S	4.93	N			100%	N	Y	22°C/24°C	30
539140	ES	TP-10-T	4.93	N			100%	N	Y	22°C/24°C	30
539141	ES	TP-12-S	4.93	N			100%	N	Y	22°C/24°C	30
539142	ES	TP-12-T	4.93	N			100%	N	Y	22°C/24°C	30
539143	ES	TP-14-S	4.93	N			100%	N	Y	22°C/24°C	30
539144	ES	TP-14-T	4.93	N			100%	N	Y	22°C/24°C	30

Extraction Started By: GA Date/Time: 10/11/06 1600

Extraction Completed By: GA Date/Time: 10/12/06 1000

Client: URS CORP.
Received: 9/28/06

v3.0

Soil Job also

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891
Certificate: WA C1268

CLIENT : URS CORP.
PROJECT: 36298195.00001
CLIENT SAMPLE ID: UD-5@1.2'
Sample Collected: 11/15/06 9:05
Sample Receipt : 11/16/06
Date of Report : 11/17/06 As Received Basis

SVL JOB: 126505
SAMPLE: 548523
% Solids: 90.6%
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
Arsenic	7.2	mg/kg		6010B	11/16/06
Cadmium	2.97	mg/kg		6010B	11/16/06
Mercury	0.060	mg/kg		7471A	11/16/06
Lead	144	mg/kg		6010B	11/16/06
Zinc	941	mg/kg		6010B	11/16/06

Tests:URS SOIL MET/HG

Reviewed By: NSlui Date 11/17/06
11/17/06 12:38

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

SVL ANALYTICAL, INC.
One Government Gulch ▪ P.O. Box 929 ▪ Kellogg, Idaho 83837-0929 ▪ Phone: (208)784-1258 ▪ Fax: (208)783-0891

Certificate: WA C1268

CLIENT : URS CORP.
PROJECT: 36298195.00001
CLIENT SAMPLE ID: UD-5@.3'-.4'
Sample Collected: 11/15/06 8:55
Sample Receipt : 11/16/06
Date of Report : 11/17/06 As Received Basis

SVL JOB: 126505
SAMPLE: 548524
% Solids: 88.2%
Matrix: SOIL

Determination	Result	Units	Dilution	Method	Analyzed
Arsenic	13.1	mg/kg		6010B	11/16/06
Cadmium	22.3	mg/kg		6010B	11/16/06
Mercury	0.628	mg/kg		7471A	11/16/06
Lead	813	mg/kg		6010B	11/16/06
Zinc	5740	mg/kg		6010B	11/16/06

Tests:URS SOIL MET/HG

Reviewed By: _____ Date 11/17/06
11/17/06 12:38

AZ: AZ0538 CA: CERT NO. 2080 CO: CERT NO. ID00019 ID: ID00019 MT: CERT. 0027 NV: CERT. ID19 WA: C1268

SVL ANALYTICAL, INC.

Quality Control Report
Part II Duplicate and Spike Analysis

Client :URS CORP. SVL JOB No: 126505

Test	Method	Mtx	QC SAMPLE ID	Units	Result	Duplicate or MSD Found		RPD%	Matrix Spike Result	SPK ADD	%R	Analysis Date
As	6010B	S	1	mg/kg	7.2	105	M	1.9	107	100	99.8	11/16/06
Cd	6010B	S	1	mg/kg	2.97	90.4	M	2.2	92.4	100	89.4	11/16/06
Pb	6010B	S	1	mg/kg	144	225	M	2.7	219	100	75.0	11/16/06
Zn	6010B	S	1	mg/kg	941	890	M	3.8	857	100	R >4S	11/16/06
Hg	7471A	S	1	mg/kg	0.060	0.238	M	2.1	0.243	0.167	109.6	11/16/06

LEGEND:

RPD% = (|SAM - DUP| /((SAM + DUP)/2) * 100) UDL = Both SAM & DUP not detected. *Result or *Found: Interference required dilution.

RPD% = (|SPK - MSD| /((SPK + MSD)/2) * 100) M in Duplicate/MSD column indicates MSD.

SPIKE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added

QC limits for MS recoveries apply only if the spike is at least 1/4 the concentration of the analyte in the sample.

Control limits for the RPD apply only if the concentration of the analyte in the sample is at least five times the reporting limit.

QC Sample 1: SVL SAM No.: 548523 Client Sample ID: UD-5@1.2'

SUL

126505

Chain of Custody Record

1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246
504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

Anatek Log-In #

Company Name: URS	Project Manager: DANE ENOS
Address: 920 N. Argonne	Project Name & #: 36298195.00001
City: Spokane State: WA Zip: 99212	Purchase Order #: 11
Phone: 509-928-4413	Sampler Signature: Kathleen A Kees
Fax: 928-4415	Shipped Via/Other:

Turn Around Time & Reporting

- [X] Next Day*
- [X] 2nd Day*
- [ ] Normal

Results needed by: 11/17/06

- [ ] Phone
- [ ] Mail
- [ ] Fax

*Please call to verify rush charges before submitting samples

Provide Sample Description

List Analyses Requested

Note Special Instructions/Comments

Preservative:

Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	Total As, Cd, Pb, Zn	HOLD	Note Special Instructions/Comments
	UD-1@1'	11/14/06 15:00	SOIL	1	8oz	X		24-48 hr TAT
	UD-1@2'	15:00				X		24-48 hr TAT
	UD-2@surface	15:30					X	Hold Sample
	UD-3@1'-5'	16:00					X	Hold Sample
	UD-4@1'-5'	16:05					X	Hold Sample
	UD-5@1.2'	11/15/06 9:05				X		24-48 hr TAT
	UD-5@3'-4'	08:55				X		24-48 hr TAT

upon arrival 13°C.

	Printed Name	Signature	Company	Date	Time
Relinquished by	KAKees	Kathleen A Kees	URS Corp	11/15/06	15:35
Received by	MA Pitt	Margaret C. Pitt	URS Corp	11/15/06	16:20
Relinquished by	MA Pitt	Margaret C. Pitt	URS Corp	11/15/06	16:20
Received by	L Johann	Linda Johann	SUL CDA	11/15/06	1620
Relinquished by	L Johann	Linda Johann	SUL CDA	11/16/06	0715
Received by		Larry A. Green	SUL	11/16/06	0715

Lab Use Only

Received Intact?	YES	NO
Labels & Chain Agree?	YES	NO
Containers Sealed?	YES	NO

Describe _____

Page _____ of _____