U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Grandview Mine and Mill - Removal Polrep
Initial Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region X

Subject: **POLREP #1**
Initial
Grandview Mine and Mill

Metaline Falls, ID
Latitude: 48.8691345 Longitude: -117.3579841

To:
From: Earl Liverman, On-Scene Coordinator
Date: 8/22/2011
Reporting Period: 08/15/2011

1. Introduction

1.1 Background

Site Number:	10DY	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	5/5/2011
Response Authority:	CERCLA	**Response Type:**	Time-Critical
Response Lead:		**Incident Category:**	
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	8/15/2011	**Start Date:**	8/15/2011
Demob Date:		**Completion Date:**	
CERCLIS ID:	WASFN 1002165	**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category

Inactive mine and mill site.

1.1.2 Site Description

1.1.2.1 Location

The inactive lead-zinc Grandview Mine and Mill is located in the lower Pend Oreille River Valley, approximately 0.75 mile from the east bank of the Pend Oreille River, and approximately 2 miles northeast of Metaline Falls, Pend Oreille County, Washington (latitude 48°52'22.04"N; longitude 117°21 '26.16"W).

The entire Site is approximately 17.1 acres, and almost all of this area has been affected by the former mining and milling operations. The Site is the location of a former lead and zinc mine and mill operation. Production at the Grandview Mine and Mill is recorded as taking place from 1924 through 1964. It is reported that more than one million tons of ore were mined and milled during the 40 years of operations at the Site. At a time during the 1950s, it is reported that up to 800 tons of ore was being milled per day and that these milling operations were occurring up to seven days a week.

The mine and mill areas are located in Government Lots 9 and 11 in Section 22. American Zinc, Lead, and Smelting Company conducted the mining and milling operations at the Site from some time in the 1950s until production ceased in 1964. On or about 17 November 1971, American Zinc Company (formerly known as American Zinc, Lead, and Smelting Company) sold all their mining claims to Washington Resources Inc., including Government Lots 9 and 11. These lots and mineral rights are currently owned by Washington Resources, LLC. Blue Tee. Corp. is the successor corporation to American Zinc Company. The tailings deposit area is located within Government Lot 10 and this property is currently owned by Teck Washington Incorporated. In 1967 the City of Seattle obtained an interest in real property located along the Pend Oreille River at the Site. The tailings deposit area extends to this property which is under the jurisdiction and control of Seattle City Light.

1.1.2.2 Description of Threat

Five metals – arsenic, cadmium, lead, mercury, and zinc – have been identified as the contaminants of concern

(COCs) because of their concentrations and frequency of detections. Other metals and SVOCs identified as COPCs with media-specific concentrations exceeding screening criteria are co-located with the COCs and a removal action focused on the metal COCs will necessarily affect these contaminants. The elevated concentrations of arsenic, cadmium, lead, mercury, and zinc found in Site surface soils along with other metals, and widespread evidence of Site use indicate that the air and soil (inhalation and ingestion) human exposure pathways exist. Nearby residents, workers, recreationists, and/or trespassers could be exposed to the mine-waste contaminants found in soils. Although not open to the public, there is widespread evidence of Site use, including all-terrain vehicle tracks, motorcycle tracks, spent ammunition casings, and acts of vandalism. The potential for exposure is elevated further because of the attractiveness of visiting the remnants of historical aboveground mining structures.

The mine-waste contaminated soils are not vegetated, thus the soils are susceptible to migration within the Site and off-Site because of water- and wind-borne influences. Because the mine-waste contaminated materials and soils are not vegetated, spring time snow melt, rainfall or other forms of run-off inducing events will tend to spread the contaminated materials throughout and further from the Site. The warmer temperatures and dry weather typical in the summer and fall months in and near the Site contribute to wind-borne dispersal of mine-contaminants.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

EPA conducted a Preliminary Assessment/Site Investigation (PA/SI) at the Site in 2000. Surface and subsurface soil, sediment, surface water, and ground water samples were collected during this activity. The maximum metal concentrations for only the inorganic contaminants-of-concern for soil and sediment are shown below. Soil samples were collected from the Lower level, including the abandoned container and drum area, waste rock piles, tailing pile, and former wastewater ditch. The sediment samples were collected at a point below the escarpment where overland runoff from the Grandview tailings pile most likely entered the Pend Oreille River floodplain. The soil data is compared against the Washington Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup levels, and the sediment data is compared against the Consensus-based Sediment Quality Guidelines.

MAXIMUM SOIL CONTAMINANT CONCENTRATIONS (milligrams per kilogram)			
Location	**Contaminant**		
	Arsenic	**Cadmium**	**Lead**
Abandoned Container & Drum Area	64.9	99.5	14,600
Waste Rock Piles	44.0	23.3	4,930
Suspected Tailings Pile	15.1	58.4	2,260
Former Wastewater Drainage Ditch	31.2	41.8	43,000
ECOLOGY METHOD A SOIL CLEANUP LEVELS (milligrams per kilogram)			
Unrestricted Land Uses	20	2	250
Industrial Properties	20	2	1,000

MAXIMUM SEDIMENT CONTAMINANT CONCENTRATIONS (milligrams per kilogram)			
Location	**Contaminant**		
	Arsenic	**Cadmium**	**Lead**
Point where overland runoff from the Grandview tailings pile most likely entered the Pend Oreille River floodplain	5.2	1.4	827
CONSENSUS-BASED SEDIMENT QUALITY GUIDELINES (milligrams per kilogram)			
Probable Effects Concentration	33	4.98	128

EPA and the Bureau of Land Management (BLM) visited the Grandview Mine and Mill Site to conduct a visual inspection of the property and surrounding area during July 2002. While EPA did not collect any environmental samples, BLM screened three locations at the mill operations area (Lower Level) using a field portable X-ray fluorescence (FPXRF) instrument. The screening results for lead were 2,320 parts per million (ppm), 2,720 ppm, and 36,582 ppm.

In September 2006, URS Corporation (URS) conducted field work to better define the nature and extent of tailings in the Tailings Accumulation Area including volume, metals concentrations, and waste characteristics. Concentrations of lead and cadmium in all tailings samples exceeded the MTCA Method A Soil Cleanup Levels for Unrestricted Land Use. Arsenic exceeded the MTCA Method A Soil Cleanup Level

for Unrestricted Land Use in 10 of 16 samples. Five tailings samples and five native soils samples were analyzed for waste characteristics (soluble metals) using the Toxicity Characteristic Leaching Procedure (TCLP). All five tailings samples analyzed by the TCLP exceeded the toxicity criterion for lead; none of the five native soil samples, which were collected from areas underlying the tailings, analyzed by the TCLP exceeded any toxicity criteria. URS also identified an additional channel (the Man-Made Ditch), which was observed to contain residual tailings and extends from the lower portion of the Drainage Ditch to the bluff above the Pend Oreille River floodplain, bypassing the Tailings Accumulation Area. Additionally, URS concluded that the Tailings Accumulation Area contains approximately 20,700 cubic yards (yd^3) of tailings, at a maximum thickness of 11 to 19 feet).

EPA conducted a removal evaluation of the nearby Pend Oreille Village and the Upper Level of the Grandview Mine and Mill in 2007. Surface soils near the following four mine operations (Upper Level) were screened and sampled: blacksmith/machine shop, diamond core storage shack, electric cars, and powder magazine. FPXRF screening data showed the following elevated lead concentrations: 1,645 ppm, 1,801 ppm, 2,288 ppm, 2,588 ppm, 3,059 ppm, and 5,114 ppm. The laboratory data showed lead at 176 mg/kg, 5,060 mg/kg, 5,510 mg/kg, 6,180 mg/kg, and 8,990 mg/kg.

ENTACT, LLC (ENTACT) conducted supplemental investigations at the Site on behalf of the PRPs in 2008. The field work included screening for metals using FPXRF equipment and screening for volatile organic compounds using a photoionization detector. Laboratory analyses of selected samples were conducted to confirm the field screening results. Field surveys were made to better delineate the extent and volume of development rock and tailings in the Upper Level Mine Area, the Lower Level Mill Area, the Drainage Ditch, the Tailings Accumulation Area, the Downgradient Ditch, and the Man-Made Ditch. The volume estimates were 18,000 yd^3 and 915 yd^3 for the Tailings Accumulation Area and the Downgradient Ditch, respectively. The supplemental investigation confirmed the presence of several contaminants above soil cleanup criteria, identified additional areas impacted by the former mining and milling operations, and developed volume estimates for all of the areas impacted by development rock and tailings.

URS conducted supplemental investigations at the Site on behalf of the PRPs in 2010. The field work included collection of 13 mine tailing and waste rock samples for analysis using the Synthetic Leachate Procedure Testing (SPLP) and installation of four groundwater monitoring wells. Analytical results for SPLP metals concentrations indicate that the contaminants of concern were not detected in samples at concentrations exceeding SPLP decision criteria. Analytical results indicate that the contaminants of concern were not detected in groundwater samples during two sampling events at concentrations exceeding groundwater decision criteria.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

EPA, along with START and ERRS contractors, mobilized to the Site on Monday 15 August 2011. Initially, cleanup activities focused on delivery of equipment and materials and construction of Site infrastructure such as construction of temporary on-Site access, setup of office and storage trailers, and setup of fuel containment cells. Soon thereafter, ERRS began development of the footprint of the respository to be constructed on-Site, including clearing and grubbing of vegetation, demolishing the existing concrete silo and appurtenant concrete structures, and staging other ancillary debris, as well as clearing vegetation from the drainage ditch. At the same time, START began monitoring air quality and sampling for asbestos-containing materials in structures to be demolished and to delineate the extent of contamination at various areas found throughout the Site. Additionally, the excavation of mine tailings from the Tailings Accumulation Area and transport of the tailings to the repository was started. Project-wide Best Management Practices (BMPs), including "Greener" BMPs, were implemented to protect workers, the community, and the environment from short-term construction impacts.

2.1.2 Response Actions to Date

Refer to Section 2.1.1.1.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

EPA entered into an Administrative Settlement Agreement and Order on Consent with the PRPs for response costs, access, institutional controls, and long-term maintenance, monitoring, and repair in June 2011.

2.1.4 Progress Metrics

To date, approximately 2300 cubic yards of mine-waste contaminated material and other debris has been placed in the repository. At the end of the removal action, it is estimated that approximately 50,000 cubic yards will have been placed into the repository.

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

Continued excavation of mine-waste material from subareas found throughout the Site, including the Upper Level Mine, Lower Level Mill, and Drainage Ditch Subarea, Tailings Accumulation Subarea, and Man-Made Ditch and Downgradient Ditch Subarea. All excavated materials and other concrete, metal, and other wood debris will be consolidated at the repository located in the Lower Level Mill subarea.

Continued air quality monitoring and delineation of the extent of contamination, along with continued implementation of BMPs to protect workers, the community, and the environment from short-term construction impacts.

2.2.1.2 Next Steps

Refer to Section 2.2.1.1.

2.2.2 Issues

None.

2.3 Logistics Section

Sufficient personnel, equipment, and material are available to support cleanup activities.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

2.5.1 Safety Officer

On 15 August 2011, the site health and safety plan was finalized and signed by all Site personnel. Safety briefings are conducted daily. On 17 August 2011, START initiated daily routine and specific air monitoring at select locations throughout the Site.

2.6 Liaison Officer

The EPA OSC notified local community and law enforcement officials about the cleanup activity and duration. Keeping local residents informed about the cleanup activity is ongoing.

2.7 Information Officer

2.7.1 Public Information Officer

Refer to Section 2.6.

2.7.2 Community Involvement Coordinator

Refer to Section 2.6.

3. Participating Entities

3.1 Unified Command

Not applicable.

3.2 Cooperating Agencies

Not applicable.

4. Personnel On Site

Personnel On-Site

1 - EPA OSC

1 – START (E&E)

15 – ERRS (EQM, Global Diving & Salvage, McGilivary Environmental)

5. Definition of Terms

Niot applicable.

6. Additional sources of information

6.1 Internet location of additional information/report

Not applicable.

6.2 Reporting Schedule

The next POLREP will be submitted on or about 16 September 2011.

7. Situational Reference Materials

None.