U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Barker Hughesville Mining District NPL - Block P Mine Complex - Removal Polrep
Initial Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region VIII

Subject: **POLREP #1**
Initial
Barker Hughesville Mining District NPL - Block P Mine Complex
08-5N
Monarch, MT
Latitude: 47.0878906 Longitude: -110.6378174

To:
From: Steve Way, OSC
Date: 11/14/2011
Reporting Period:

1. Introduction

1.1 Background

Site Number:	08-5N	**Contract Number:**	
D.O. Number:	NA	**Action Memo Date:**	8/19/2010
Response Authority:	CERCLA	**Response Type:**	Non-Time-Critical
Response Lead:	PRP	**Incident Category:**	Removal Action
NPL Status:	NPL	**Operable Unit:**	OU1
Mobilization Date:		**Start Date:**	10/1/2010
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category

CERCLA Non-time Critical Removal Action

1.1.2 Site Description

1.1.2.1 Location

The Barker Hughesville Mining District NPL Site (Site) is within Judith Basin and Cascade counties, approximately 40 miles southeast of Great Falls, Montana. The removal action includes related activities at Block P Mine, Wright and Edwards mines, Belt Patent Mine, and Grey Eagle Mine ('Block P Mine Complex'). Upper Galena Creek drainage is located in the center of the Site, downstream of Green Creek and Daisy Creek. It encompasses about 1,178 acres and includes Galena Creek from Block P Mine through the town of Barker. The Upper Galena Creek drainage also includes Silver Creek and Bend Gulch Creek. There are a total of 19 mine sites located within this drainage, the largest of which is Block P Mine. Water quality in Galena Creek is poor throughout the drainage due to degrading influences from Block P Mine Complex. Upstream tributaries are contaminated with mine waste and numerous adits discharge to the creek and recharge from impacted groundwater. Creek water is often rust-colored, the pH is seasonally low, and the stream bed is iron stained.

1.1.2.2 Description of Threat

Analyses of samples collected at the Site indicate the presence of high concentrations of heavy metals including zinc, cadmium and lead in waste, sediment and mine drainage waters. For example, flows from Block P Mine adit contain zinc at concentrations ranging from 27,000 to 30,000 micrograms per liter (ug/L). In addition, these same hazardous substances are found in several miles of surface water at the Site.

Aquatic life in Galena Creek below the Block P Mine Complex is practically non-existent. Impacts to aquatic life are evident in the Dry Fork of Belt Creek below the confluence with Galena Creek due to elevated concentrations of heavy metals and low pH water being transported from the mines. Galena Creek surface water sampling shows that concentrations

of heavy metals increase 10 to 20 times immediately below the Block P Mine from those samples collected immediately above the Block P Mine. These concentrations are more than 10 times above the surface water quality standards for some metals.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

The estimated waste rock volume for the five mines of the Block P Mine Complex is approximately 260,000 cubic yards. (Includes mines waste dumps: Block P, Wright, Edwards, Belt Patent and an unnamed pile.) These waste rock dumps are located within the channels of Galena Creek and a tributary (an intermittent stream) to Silver Creek. Recent samples have shown lead concentrations in the waste rock dumps range from approximately 4,500 milligrams per kilogram (mg/kg) to 21,000 mg/kg. Zinc is also highly elevated in several waste rock samples with concentrations ranging up to approximately 3,000 mg/kg. Water from seasonal snow melt run-off and precipitation events percolate through the mine wastes, producing acid mine drainage from the dumps, releasing hazardous substances into area drainages and associated groundwater, and eroding additional wastes into surface water.

In addition, contaminated water accumulated in underground mine workings flows from adits directly into surface drainages. Flow volumes from the Block P Mine adit (discharge water at approximately a pH of 3.5 standard units) vary widely during the year, ranging as high as approximately 300 gallons per minute. Also, alluvial groundwater levels rise seasonally, saturating portions of the waste dumps which further contribute to hazardous substance releases into surface water.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

The recommended actions include removing waste rock from its current location on the Block P Mine Complex mines on hillsides (slopes) adjacent to Galena Creek and in and along surface water drainages and consolidating the waste rock into an engineered repository located on-Site. Currently, Area 2 as described in the EE/CA, is the planned location for the on-Site repository. The repository will be designed so as to minimize infiltration and run-on and, in turn, prevent migration of hazardous substances from the waste rock. The removal action is expected to contribute to remedial performance, to provide long-term protection, and to be consistent with future actions at the Site.

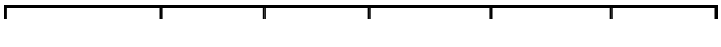
2.1.2 Response Actions to Date

- Site preparations began in October 2010 with the filling of the Block P Mine shaft by installing a concrete plug and allowing it to cure over the winter. Haul road improvements to the repository were started also.
- The hoist building over the shaft was removed for safety; it was unstable.
- Mobilization and road repair began in late June 2011. The county road repairs below the Block P Mine, where Galena Creek washed out the road, were necessary to allow Site access. The shaft opening above the plug was filled.
- Repository – Area 2 (approximately 8 acres) clearing and soil stock piling started the week of July 11, 2011. (The waste area footprint is approximately 250,000 square feet.)
- Limestone rock (approximately 6 inch lift) was placed over the base of the repository to provide buffering of the water infiltrating the waste during spring melt/run-off.
- Waste rock removal from the estimated 235,000 cubic yard Block P Mine waste dump began on July 25.
- Waste rock placement in the repository included compaction of waste in 12 to 18 inch lifts and graded according to the design plans. Also, building debris was distributed across lifts and crushed by the dozer tracks.
- Temporary water management practices implemented at the landing area adjacent to the Block P adit resulted in the flow from the adit to discontinue. A diversion trench intercepted a subsurface flow that appeared to influence the flow from the adit to the point where no flow was being observed from the adit.
- The haul operations were discontinued due to weather by October 24, 2011, with an estimate 123,000 cy placed.
- Site stabilization measures were installed to control erosion and run-off and operations shut-down by October 28, 2011.

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

- An Administrative Order on Consent was signed in June 2011 to implement the removal action. Prior to that an AOC was in effect for the Engineering Evaluation and Cost Analysis (EE/CA) in 2008.

2.1.4 Progress Metrics



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

2.2 Planning Section

2.2.1 Anticipated Activities

- **Waste rock removal from the Block P Mine will continue in 2012. Work on the Wright and Edwards mine waste will also begin.**
- **Repository capping will begin if not be completed by the end of next season. A geo-membrane will be placed on the waste and then covered with an earthen cover.**
- **Galena Creek channel restoration will occur following the removal of the waste rock at the Block P Mine.**
- **Re-vegetation activities for the disturbed areas will begin next year. Soil amendments will be needed to adjust for low pH and possibly elevated metals.**

2.2.1.1 Planned Response Activities

2.2.1.2 Next Steps

- **A re-vegetation plan must be submitted by the PRP.**
- **Preparations for next field season.**

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

No information available at this time.

4. Personnel On Site

No information available at this time.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.