

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



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region VIII

**Subject:** POLREP #3  
Progress  
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:** 9/25/2012  
**Reporting Period:** August - September 2012

1. Introduction

1.1 Background

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

1.1.1 Incident Category

CERCLA Non-time Critical Removal Action

1.1.2 Site Description

**Mining:** The Site is the location of historical mining and mineral processing only. The removal action involves the consolidation of approximately 260,000 cubic yards (cy) of waste rock into an on-site repository.

1.1.2.1 Location

The Barker Hughesville Mining District NPL Site (Site) is within Judith Basin County and Cascade County, 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 with contaminated mine waste, numerous adit discharges 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 waste rock has been consolidated in the repository on land now owned by Doe Run Resources. The repository is designed so as to minimize infiltration and run-on and, in turn, prevent migration of hazardous substances from the waste rock. The cover system includes a geo-synthetic membrane and a soil cap.

The removal action is expected to contribute to remedial performance, is intended to provide long-term protection, and to be consistent with future actions at the Site. Waste hauling is now completed and liner is being placed on the repository. The following is reported as of the inspection on September 24 and 25.

#### **2.1.2 Response Actions to Date**

- **The final surveyed volume of waste now in the repository is approximately 230,000 cubic yards. Waste hauling was completed during the week September 10<sup>th</sup> and repository grading was completed.**

**Liner (40 mil, LLDPE – textured) installation was started on September 24 and is expected to be completed within ten days. Geocomposite (drainnet/geotextile) layer will be placed over the geomembrane (liner), and then the soil cover will follow.**

**Amendments (lime kiln dust and organic matter) were added to the Wright/Edwards area soils. Timber and slash from the area was placed in the base of the drainage; additional will be added as part of the revegetation / restoration phase. Galena Creek channel alignment and armoring is largely completed. However specific areas need to receive additional and larger riprap, and some sections the must be widened to accommodate flows. Limestone rock has been imported from a nearby borrow site on private land and is being used for the channel armoring.**

**The two larger culverts were placed in the channel above and below the Block P mine reach with a rock layer within the base of the pipe.**

**There is approximately, 8,500 cyds of top soil and 14,500 cyds of common fill soil staged at the repository area. A portion of the common borrow has been used to reshape the Galena Creek riparian and channel. The soil/slash piles also located at the repository area will be used to restore disturbed sites.**

**The Belt Patent waste rock was removed and is prepared for revegetation.**

**A small pile of waste rock (approximately 200 cy) located adjacent to the Block P mine waste dump was reclaimed in-place to avoid additional disturbance and due to the steep slopes accessing the area**

**Benches are being cut into the Block P mine slope to allow equipment access to apply the lime and compost amendments to the steep slope. Amendments will be added and then hydro-seeding will be performed.**

**Two areas of underground mine workings (stopes or shafts, etc) were exposed between the Block P mine adit and the utility building located on the opposite side of Galena Creek. Both of these openings were filled and sealed with a soil bentonite mixture.**

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

- An Administrative Order on Consent was signed in June 2011 to have the Doe Run Company 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

| <i>Waste Stream</i> | <i>Medium</i> | <i>Quantity</i> | <i>Manifest #</i> | <i>Treatment</i> | <i>Disposal</i> |
|---------------------|---------------|-----------------|-------------------|------------------|-----------------|
| Mine waste          | soil          | 122,000 cy      | NA                | NA               | Landfill        |
| Mine waste          | soil          | 162,000 cy      |                   |                  | Landfill        |
| Mine waste          | soil          | 230,000 cy      | oniste            |                  | Landfill        |
|                     |               |                 |                   |                  |                 |

## 2.2 Planning Section

### 2.2.1 Anticipated Activities

- Liner installation on the repository will continue through early October. Repository soil capping will begin following the installation of the geo-net drainage layer placement.
- Galena creek channel restoration will continue the week of September 24 at the Block P Mine.
- Hydro-seeding will be performed following the soil amendment applications at the cleanup sites.
- Repository seeding will follow the soil cap placement possibly delayed until Spring.

#### 2.2.1.1 Planned Response Activities

#### 2.2.1.2 Next Steps

- Additional investigations for mine impacted water may be performed to identify potential source of seep at the Block P mine below the adit discharge at the Block P Mine that is discharging to Galena Ck.

#### 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

USDA Forest Service staff are involved with the site on a routine basis, including the District Ranger for the Belt Ranger District and Forest Service OSC.

## 4. Personnel On Site

Doe Run has a fulltime person overseeing the operations, and Barr Engineering maintains a field engineer onsite.

The contractor has a superintendant, 2 operators and 7 truck drivers.

## 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.