

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Henson Creek Mines - Ute Ulay Mine - Removal Polrep
Final Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region VIII

Subject: POLREP #5
Final
Henson Creek Mines - Ute Ulay Mine
08LJ-OU1
Lake City, CO
Latitude: 38.0196390 Longitude: -107.3770100

To: David Ostrander, 8EPR-ERP

From: Steven Way, OSC
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Date: 7/9/2014

Reporting Period: July 27, 2013 - June 30, 2014

1. Introduction

1.1 Background

Site Number:	08LJ-OU1	Contract Number:	
D.O. Number:		Action Memo Date:	4/15/2013
Response Authority:	CERCLA	Response Type:	Time-Critical
Response Lead:	EPA	Incident Category:	Removal Action
NPL Status:	Non NPL	Operable Unit:	
Mobilization Date:	5/21/2013	Start Date:	5/23/2013
Demob Date:	7/26/2013	Completion Date:	10/30/2013
CERCLIS ID:		RCRIS ID:	
ERNS No.:		State Notification:	February 2013
FPN#:		Reimbursable Account #:	

1.1.1 Incident Category

CERCLA Time-Critical Removal Action

1.1.2 Site Description

The Ute Ulay Mine and Mill Site is an inactive gold, silver, lead and zinc mining and milling operation located near Lake City, Colorado. The Site includes a flotation mill with mixed tailing and waste rock piles, several open portals and a shaft. The mill tailing and waste rock piles are situated adjacent to Henson Creek. The tailing and waste rock piles are located on both privately-owned and Bureau of Land Management (BLM) lands at the Site.

1.1.2.1 Location

The Ute Ulay Mine and Mill is located 4 miles west of the Lake City, Hinsdale County, Colorado.

1.1.2.2 Description of Threat

The Site is located in an area that is subject to heavy snow with a pronounced spring snowmelt. In addition, the Site is within an avalanche hazard area. In 2011, an avalanche occurred east of the Ute Ulay Mine and Mill Site. The avalanche filled the channel, blocked the river and backed Henson Creek up to approximately 30 feet deep, submerging a section of the waste dump adjacent to the large mill tailing impoundment. A release of tailing materials occurred when Henson Creek broke through the avalanche debris. Routine run-off events cause releases to the environment of tailings and waste rock containing hazardous substances.

Sensitive ecosystem impacts may occur in the event of a large mass of waste release into Henson Creek, which is a tributary to Lake Fork of the Gunnison. Lake Fork River is considered a Cold Water Aquatic Life Class 1 by the State of Colorado. Sampling and analyses conducted by CDPHE in 2000 and 2011 indicate the presence of several known contaminants of concern, especially arsenic and lead. In addition, cadmium, copper, manganese, silver, zinc and mercury have been detected in concentrations exceeding the MacDonald PEC for freshwater aquatic ecosystems guideline related to sediment contaminants. All of the materials contaminated with hazardous substances have been left unsecured in tailing and/or waste rock piles.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

In addition to the ongoing erosion of mine waste into the adjacent Hensen Creek, the potential for more substantial releases existed. Based on investigation and geotechnical analysis, the EPA, DRMS and CDPHE determined that the most significant hazard at the Site is the potential for a failure of the mine waste rock dump slope and mill tailing impoundments into Hensen Creek. The stability analysis demonstrates that slope failure is likely under extreme loading events such as an earthquake or rapid drawdown of contained water and that these slopes are only marginally stable in their existing conditions. The factors of safety were calculated for several cross sections on the mine waste dump and were found to be below 1.4 and as low as 0.86 for the primary waste rock slope. Generally, slope stability should be above a factor of safety of 1.5. Additional review of the geotechnical data by the US Bureau of Reclamation engineering staff indicated that in some areas onsite material was likely less stable than the above analysis concluded.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

This action involves the following key elements: (1) re-grading of tailing and waste rock piles to achieve an acceptable slope stability and reduce the potential for catastrophic failure into Hensen Creek; (2) re-grading to promote positive drainage, minimize water run-on, and prevent erosion into Hensen Creek; (3) as determined appropriate, amending the mill tailings with a cement mixture to stabilize wet tailings; and (4) securing the top, accessible areas of waste with earthen cover material, as necessary to reduce human exposure. BLM-managed land and private land on-site will provide the area necessary to allow re-grading of waste to achieve stable slope conditions. Design drawings are being developed and will show the proposed grading plan to achieve acceptable slope stability. In addition, both unamended and cement amended waste blends were analyzed for material strengths, and it was determined that some portion of the waste would be amended with cement to increase the stability of the resulting repository.

2.1.2 Response Actions to Date

From May 21, 2013, to July 26, 2013, EPA conducted numerous response activities on-site to reduce the potential for catastrophic failure of mill tailings into Hensen Creek. In summary, as necessary, EPA excavated and amended the wet mill tailings with approximately 2 percent cement for stabilization and then mixed the amended tailings on a one-to-one ratio with waste rock. The blended waste was placed in lifts to establish re-graded slopes of approximately 2.5 H : 1 V or flatter angles for acceptable slope stability. Rip-rap was installed along approximately 75 feet of the creek at the downstream end of the Site to reduce the potential for under-cutting and erosion of the toe of the slope. EPA completed construction of the repository and de-mobilized on July 26, 2013. The Site was surveyed on July 30, 2013, and as-built plans were prepared. Details of EPA's response actions are included in Polreps #1 - #4.

On October 2, 2013, the Colorado Division of Reclamation Mining and Safety (DRMS) mobilized to the Site to place a final rock cap over the slopes of the repository and the access roads and perform final grading and re-vegetation. This work was performed on behalf of BLM as outlined in the joint Action Memorandum.

Prior to placement of the rock cap, approximately 2,000 feet of drainage channels and rock berms were covered in geotextile fabric to reduce erosion. A total of 3,680 cubic yards of the final cover rock, ranging from six inches to four feet in diameter, were placed on the repository, including channels and roadside berms. A portion of the slope at the toe was covered with rock screened from on-site material. The cap was a generally a minimum of eight inches in depth.

Access roads were graded to a final two percent minimum grade to ensure proper drainage and finished with road base material donated by Hinsdale County. Approximately 308 cubic yards of road base were placed at a minimum four inch depth on all roads throughout the Site and compacted.

Two areas of approximately one half acre were amended and re-vegetated using compost, biosol, and reseeded with a BLM-approved seed mix. DRMS completed construction activities on October 30, 2013.

The OSC conducted a final inspection of the Site on June 27, 2014 to evaluate the cover and slope conditions following the spring snow melt, and all drainage features and slopes appeared stable without evidence of erosion.

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

An enforcement addendum addressing PRPs is attached to the Action Memo.

2.1.4 Progress Metrics

<i>Waste Stream</i>	<i>Medium</i>	<i>Quantity</i>	<i>Manifest #</i>	<i>Treatment</i>	<i>Disposal</i>
Tailings	solids	14,800 cy	Na	amended	onsite
Waste Rock	solids	15,800 cy	Na	amended	onsite

2.2 Planning Section

2.2.1 Anticipated Activities

2.2.1.1 Planned Response Activities

No additional response activities are planned. Post-reclamation monitoring will occur in the spring and summer of 2014.

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

2.4.1 Narrative

NA

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

Hinsdale County and the BLM are the current land owners at the Site and are both responsible for post-removal Site controls.

The former landowner of the Ute Ulay Mine and Mill and owner of LKA International, paid for a portion of the blasting to generate rock and donated the rock used for the final cover on the regraded slopes

4. Personnel On Site

All federal personnel and contractors demobilized July 26, 2013. State personnel and contractors demobilized October 30, 2013.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

6.1 Internet location of additional information/report

The Hinsdale County website includes additional information regarding the Ute Ulay Mine Project at: www.hinsdalecountycolorado.us

EPA has additional information regarding the removal at: www.epaossc.org/UteUlayMine.

6.2 Reporting Schedule

This is the final report.

7. Situational Reference Materials

No information available at this time.