



United States Environmental Protection Agency
Region 8 Emergency Response Unit
Denver, CO



Report: Camp Bird Removal Objectives and Estimated Costs

Date: 11/29/2016

Site Name: Camp Bird Mine

Site ID: A8H9

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Notice: Preliminary Information

Category: Site Description

Last Updated: 11/17/2016

The Camp Bird is a famous gold mine located near Ouray, CO. A large amount of mine waste is located at the entrance to the mine's Level 14. Three water bodies run in direct contact to this mine waste: Sneffels Creek, Imogene Creek and Canyon Creek (which is formed by the confluence of Sneffels and Imogene Creeks).

Aerial View of the Camp Bird Mine at the Entrance to Level 14 in 2002¹



¹ Source: Mining History Association, <http://www.mininghistoryassociation.org/CampBird.htm>.

Notice: Preliminary Information

Category: Removal Site Evaluation

Last Updated: 11/29/2016

EPA response personnel have visited the site during a variety of stream flow regimes. Mine waste is being actively eroded into all three water bodies: Sneffels Creek, Imogene Creek and Canyon Creek. This mine waste contains heavy metals. Circumstances at the Site meet the requirements for a removal action under Section 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

Contaminated Material Entering Canyon Creek at the Camp Bird Mine



Notice: Preliminary Information

Category: Removal Action Objectives

Last Updated: 12/04/2016

EPA's On Scene Coordinator has identified the following areas and objectives for a removal action at the Camp Bird Mine Site. These areas and objectives were established assuming that the area will be actively mined.

Area: A1

Description: Portion of the southeast waste pile east of the side drainage that bisects the pile.

Approximate Size: 1 acre

Objectives: Remove the mine waste in this area and consolidate it with the mine waste in area A2. Install erosion control features, apply topsoil and/or compost and revegetate all disturbed areas.

Relationship to Permitted Mine Area: Not included.

Area: A2

Description: Portion of the southeast waste pile west of a side drainage that bisects the pile.

Approximate Size: 3 acres

Objectives: Pull the waste back away from Canyon Creek and the side drainage. Regrade the waste pile (regraded slopes should not exceed 3:1). Consolidate all contaminated material upland away from the creek and the side drainage. Install erosion control features, apply topsoil and/or compost and revegetate all bare and disturbed areas.

Relationship to Permitted Mine Area: Not included.

Area: B

Description: Southwest pile closest to the entrance of the Level 14 tunnel.

Approximate Size: 9 acres

Objectives: Pull the waste back away from Canyon and Imogene Creeks and regrade the pile. Regraded slopes should not exceed 3:1. Consolidate all contaminated material upland away from the creeks. Install erosion control features across the entire area. Apply topsoil and/or compost and revegetate all bare and disturbed areas that are not included in the existing permitted mine area. Insure a cap of non-contaminated material exists in those areas within the existing permitted mine area.

Relationship to Permitted Mine Area: The upland area (~3 acres) and structures around the tunnel entrance are included in the permitted mine area.

Area: C

Description: Area to the west of Sneffels and Imogene Creeks.

Approximate Size: 5 acres

Objectives: Install erosion control features and insure that a cap of non-contaminated material exists on the area.

Relationship to Permitted Mine Area: This area is included in the permitted mine area.

Alternate Approach: This area could be excluded from the removal action and maintained to support future land use.

Area: D

Description: Tailings ponds and associated slopes north of Canyon Creek.

Approximate Size: 17 acres

Objectives: Stabilize the existing slopes of the tailings ponds with erosion fabric keyed in at the top and bottom of the slopes. Cover these slopes with non-contaminated material. The lower slopes should include rip rap.

Relationship to Permitted Mine Area: This area is included in the permitted mine area.

Area: E

Description: Sneffels Creek, Imogene Creek and Canyon Creek as they pass through the Site.

Approximate Size: 1200 feet

Objectives: Remove choke point on Canyon Creek, widen all river channels and armor both banks with imported rip-rap to account for a 100-year flood event. Apply topsoil and/or compost, terrain features and revegetate river channel within the constructed floodplain.

Relationship to Permitted Mine Area: Not included.

Areas of Interest at the Camp Bird Site



Notice: Preliminary Information

Category: Removal Action Cost Estimates

Last Updated: 12/04/2016

This cost estimate was established assuming that the area will be actively mined.

Item	Description	Cost
Labor, Travel, Per Diem and Lodging	EPA On Scene Coordinator, Contracted Project Manager, Field Accountant, Foreman, Equipment Operators, Truck Drivers and Laborers	\$875,000
Equipment Rentals, Freight and Fuel	80,000lb Bulldozer, 50,000lb Bulldozer, 80,000lb Excavator, Off Road Water Truck, 3 Off Road Dump Trucks, 40,000lb Wheel Loader, Stake-bed, Pick Ups, Office Trailer, Conex Storage Box and Toilet Rentals	\$645,000
Cover Material	Compost and/or topsoil (delivered to bottom of the Camp Bird Road), erosion fabric and other miscellaneous supplies and services.	\$950,000
Analytical	Personal air monitoring	\$1,000
	Total	\$2,471,000