Work Plan
Camp Bird Removal Action
07/07/2017

Site Name: Camp Bird Mine
Site ID: A8H9

Purpose

This Work Plan is in support of the Administrative Settlement Agreement and Order on Consent for Removal Action (AOC) between the Bankruptcy Estate of Camp Bird Colorado, Inc. (Respondent), Caldera Mineral Resources, LLC (Purchaser), and the United States Environmental Protection Agency (EPA). Purchaser has acquired certain surface and mineral rights associated with the Camp Bird Mine through a bankruptcy settlement with Respondent. In connection with the purchase, Purchaser is required to complete certain tasks at the mine as described herein.

Site Description

The Camp Bird Mine is an underground mine, located 6 miles south of Ouray, Colorado. The Site subject to this Work Plan consists of three cells of tailings that are located near the entrance to the 14-Level of the mine. These tailings rest in direct proximity to Sneffels, Imogene and Canyon Creeks (see attached Site Map). Sneffels and Imogene Creeks enter the Site upstream and combine near the center of the tailings to form Canyon Creek. Canyon Creek flows downstream to Ouray.

Aerial View of the Camp Bird Mine at the Entrance to Level 14 in 2002[1]

[1] Source: Mining History Association, http://www.mininghistoryassociation.org/CampBird.htm.

The two tailings cells located on the south side of Canyon Creek are referred to as the "historic tailings" and are associated with milling activities believed to date back to the early 1900s. The third and largest tailings cell located on the north side of Canyon Creek is referred to as the "modern tailings" and was last used for disposal in the late 1990s. The modern tailings occur within the boundary of an active mining permit that is administered by the Colorado Division of Reclamation, Mining and Safety (DRMS).

The Site also includes a large rock glacier around the 3-Level of the mine which may be used as a source of rip rap and cover material. The two areas are connected by a rough 2.5-mile dirt road.

Site Evaluation

The historic tailings cell that is furthest downstream is being actively eroded by a side drainage that flows into Canyon Creek. The slopes of both the historic and modern tailings are susceptible to erosion and instability from storm water runoff and flood events in the perennial drainages. The historic tailings are also largely uncovered making them susceptible to wind erosion.

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).

Objectives

1. Prevent erosion of tailings from 100-year flood events in the adjacent perennial streams.
2. Prevent erosion of tailings from wind, storm water runoff, and side drainages that flow into the adjacent perennial streams.

Required Tasks

The tasks required by this Work Plan are divided into two phases. Phase 1 addresses erosion and erosion potential at the historic tailings. Phase 2 addresses erosion and erosion potential at the modern tailings. Deliverable dates assume August 1, 2017 as the date of ratification of the AOC by Purchaser, pursuant to the Section XXXI of the AOC. If the ratification is later, the deliverable dates will be updated accordingly. Other timeline references herein are estimates and may vary depending on adverse weather conditions (e.g. high stream flows and snow cover), availability of suitable capping, rip-rap and topsoil materials, and/or delayed access from third parties.

A. GENERAL PROJECT MANAGEMENT

Description: Perform project management duties and general support functions.

Deliverables	Due Dates
Health and Safety Plan	August 1, 2017
Emergency Notification Plan	August 1, 2017
Monthly Status Update Template	August 1, 2017
Monthly Status Update	7th of each month
Final Report Template	February 1, 2019
Final Report	March 1, 2019

B. PHASE 1: PREVENT EROSION OF HISTORIC TAILINGS

Phase 1 Task 1: Improve the existing road between 14-Level and 3-Level of the mine and/or identify alternate sources of rip rap and cover material.

Description: Improve the approximately 2.5-mile-long, 4-wheel drive road between the tailings cells (~9,800 ft. elev.) and the large rock glacier located above the entrance to 3-Level (~11,500 ft. elev.) of the mine. The road will be used by off road haul trucks to transport a limited amount of rip-rap and cover material from the rock glacier down to the removal area. Maintain traffic control and public safety on the road during construction and use. *This task may be eliminated if suitable alternative source(s) of rip rap and cover material are identified.*

Access: The road is designated a county road by Ouray County and portions of it pass through United States Forest Service (USFS) lands. Input and/or access from both Ouray County and USFS will be required prior to initiating task.

Timeline: The road improvements are anticipated to be completed during the 2017 construction season. Use of the road for transport of capping and rip-rap materials is anticipated to begin late in the 2017 construction season and may continue into the 2018 construction season.

Deliverables	Due Dates
EPA approved map of proposed road improvements.	August 15, 2017
EPA approved Traffic Control and Public Safety Plan.	August 15, 2017
EPA approval of work completed on the road and/or approval of alternative source of rip rap material.	December 1, 2017

Phase 1 Task 2: Stabilize downstream historic tailings cell.

Description: This tailings cell is located on the southeast side of Canyon Creek, and is uncapped and bisected by a north-south trending side channel that flows into Canyon Creek. Remove and consolidate tailings east of the side channel with tailings on the west side of the side channel. Stabilize the length of the side channel with rip-rap. Design and construct erosion control features across the entire disturbed and uncapped areas. Cover the entire disturbed and uncovered areas on either side of side channel with topsoil/compost. Establish vegetation as needed to stabilize all exposed areas.

Timeline: The excavation, grading and erosion control will be completed during construction season 2017. Capping and revegetation is anticipated to be completed during the 2018 construction season.

Notes: A portion of this area is on USFS property. Input and/or access from USFS will be required prior to initiating task.

Deliverables	Due Dates
EPA approved map of planned erosion control and restoration features.	August 15, 2017
EPA approved Cut/Fill/Excavation Plan and appropriate design sketches.	August 15, 2017
EPA approval of excavation, grading and erosion control on downstream historic tailings cell.	December 1, 2017
EPA approval of capping and revegetation on downstream historic tailings cell.	December 1, 2018

Phase 1 Task 3: Stabilize upstream historic tailings cell.

Description: This tailings cell is uncapped and located east and adjacent to Imogene Creek, and southeast and adjacent to Canyon Creek. Regrade and stabilize slopes of the tailings in accordance with an engineered, geotechnical stability analysis. Construct appropriate erosion control features and cap all areas with inert cap rock and/or topsoil/compost. Establish vegetation as needed to stabilize areas where the matrix of the cover material is prone to erosion from storm water runoff.

Timeline: Geotechnical analysis and regrading is anticipated to be completed during 2017 construction season. Capping and revegetation is anticipated to be completed during 2018 construction season.
Notes: A portion of this area underlies active powerlines operated by San Miguel Power Association, Inc. (SMPA). Depending on the design criteria for this task, the powerlines may need to be reconfigured, which may need to be completed by SMPA before and during this task.

Deliverables	Due Dates
EPA approved map of planned erosion control and restoration features.	September 15, 2017
EPA approved Cut/Fill/Excavation Plan and appropriate design sketches.	September 15, 2017
EPA approval of grading and erosion control on upstream historic tailings cell.	December 1, 2017
EPA approval of capping and revegetation on upstream historic tailings cell.	December 1, 2018

Phase 1 Task 4: Enhance and reinforce streams adjacent to historic tailings.
Description: The toes of the historic tailings are susceptible to erosion from Imogene Creek and Canyon Creek during flood events. In tandem with the regrading in Task 3, excavate, widen, and armor the banks of Imogene Creek from the pipe bridge downstream to the confluence with Sneffels Creek. And in tandem with Tasks 2 and 3, excavate, widen, and armor the right bank of Canyon Creek from the confluence of Sneffels and Imogene Creeks downstream to the disturbed area in Task 2. Excavation, widening, and armoring of the streambanks shall be completed to the extent necessary to prevent erosion of tailings from 100-year flood events. Remove, the large block of San Juan Tuff resting in/near the floodplain below the historic tailings. Amend uncovered areas of the streambanks and stream channel with a combination of rip-rap, erosion control features, and topsoil/compost. Establish vegetation as needed to stabilize amendments.
Timeline: By proximity, this task will begin coincident with Tasks 2 and 3 during the 2017 construction season and is anticipated to be completed during the 2018 construction season.

Deliverables	Due Dates
EPA approved Stream Restoration Plan and appropriate design sketches.	September 1, 2017
EPA approved schedule for completion of specific restoration features.	September 1, 2017
EPA approval of condition of stream corridors in anticipation of 2018 spring runoff.	December 1, 2017
EPA approval of final condition of stream corridors.	December 1, 2018

C. PHASE 2: PREVENT EROSION OF MODERN TAILINGS

Description: As delineated in the AOC, the design and implementation of this phase may be completed under the authority and oversight of DRMS. The work will include regrading and stabilizing the slopes of the modern tailings in accordance with an engineered, geotechnical stability analysis, and enhancing the left banks of Sneffels and Canyon Creeks to prevent erosion of the modern tailings from 100-year flood events.
Timeline: The Permit will be amended by January 31, 2018 and the implementation of the task will begin during the 2018 construction season.
Notes: If the Permit is not amended by January 31, 2018 unless this date is extended by DRMS, this Work Plan shall be amended to include the design and implementation of this task under EPA authority and oversight.

Deliverables	Due Dates
Apply for Succession of Operator with DRMS	August 1, 2017
Submit amendment to Active Mining Permit including design of proposed erosion control features on the modern tailings.	December 1, 2017
DRMS approval of amended Active Mining Permit to include components of a work plan.	January 31, 2018
Initiate construction of erosion control features on the modern tailings.	July 1, 2018