

**Deliverable**  
**Project Schedule**  
**Restoration Material Estimates**  
Camp Bird Removal Action

**Site Name:** Camp Bird Mine

**Site ID:** A8H9

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**Prepared for:** Martin McComb, On-Scene Coordinator, EPA

**Date:** September 15, 2017

**Purpose**

This DRAFT deliverable is a requirement under the Camp Bird Mine Removal Action Work Plan (Work Plan) in support of the Administrative Settlement Agreement and Order on Consent for Removal Action (AOC) between the U.S. Environmental Protection Agency (EPA) and Caldera Mineral Resources, LLC (Caldera). The AOC was ratified by Caldera on August 31, 2017.

Under the Work Plan the deliverables included herein are due September 15, 2017. The deliverables include a DRAFT description of the anticipated project schedule, a list of equipment and personnel, and a DRAFT description and estimate of restoration materials.

**Project Schedule:**

Calendar Summary

- May 30, 2017 through June 2, 2017: Geotechnical drilling was completed at the modern and historic tailings.
- June 2016 through the present: designs have been underway for both phases and tasks. The finalization of the designs will meet or pre-date the deliverable due dates in the Work Plan.
- August 15-20: trenching and initial mobilization to site
- August 21-October 31: Phase 1 Tasks 1, 2, 4 have all been underway since August 21 and will continue until the approximate end-date of the 2017 construction season (~October 31), depending on road and weather conditions. P1T1 will have been worked on the entirety of the dates, but by necessity, won't be completed until the project as a whole is completed. P1T2 is anticipated to be completed or nearly so. P1T4, Imogene Creek from the pipe bridge to the low-water crossing is completed as of September 15. P1T4, Canyon Creek along the downstream historic tailings and the low area between the historic tailings might be completed. P1T3 is not anticipated to be addressed during the 2017 construction season. A hydromulch test strip might be completed on the modern tailings as part of Phase 2, but more research and design needs to be completed.
- October 31, 2017 to May 31, 2018: approximate range of offseason dates. Site maintenance and security will be implemented during the offseason. Design work will be underway as needed.
- June 1, 2018 – July 15, 2018: approximately range of dates for shaping and grading upstream historic tailings under P1T3. P1T1 will be ongoing until project completion.
- July 16, 2018 to October 31, 2018: approximate range of dates for low flows in perennial drainages that will allow for restoration and bank stabilization under P1T4. P1T1 will be ongoing until project completion.

## Day-to-Day Summary

Individual personnel will vary depending on the type of work being completed at any given time. For individuals actively working, the only regimented, mandatory day-to-day work schedule will be during weekdays, Monday through Friday; weekends and federal holidays will be optional as individuals deem necessary to meet project goals. In general, the work day begins at 7:30am and ends at 5:00pm. Hours are adjusted as needed to meet project goals or personal needs.

## **Personnel & Equipment:**

### Primary Project Personnel:

Caldera Mineral Resources, LLC: Mike Thompson (Project Coordinator) and Ronald Williams (Site Safety Officer and operator)

Blackford Welding and Construction, LLC: Phil Blackford (operator), Mike Luther (operator), Paul Michaels (operator), Scott Blackford (operator), Jeremy Blackford (laborer), Dick Zanett (operator), James Kaiser (electrician)

### Support Personnel:

Franklin Drilling & Blasting, Inc.: Jeff Franklin (driller), Chris Maschino (driller)

Mobile Machine Care, LLC: Josh Prosser

Clarke & Company: Wacey Clarke, Jason Landini

Tony Schmidt (carpenter)

### Suppliers:

Parish Oil Company

Western Petroleum Company

ERTEC Environmental Systems

Triton Environmental

### Design Personnel:

Western Stream Works, Inc.: Bill Coughlin (Hydrologist)

DOWL Engineering: Dan Quigley (Engineer), Laurie Brandy (Geologist)

Geonads, LLC: Wayne Pandorf (Geotechnical Engineer)

### Equipment:

Loader, Caterpillar 950F (Blackford)

Bulldozer, Caterpillar D5NXL (Blackford)

Excavator w/ rock hammer, Komatsu 228USLC (Blackford)

Excavator, Caterpillar 321CLCR (Blackford)

Excavator, Caterpillar 320B (Blackford)

Excavator, Caterpillar 336F (Blackford rental)

Bulldozer, Caterpillar D6M (Caldera)

Loader, Caterpillar IT62H (Caldera)

Bulldozer LGP, 750 John Deere (Caldera rental)

Haul Truck, 40 ton, articulated, Bell 35D (Caldera rental)

Track-mats, homemade (Caldera rental)

Grizzly, Blueline 3-4yd<sup>3</sup> Model (Caldera rental)

Track Drill, Tamrock Tiger (Franklin)

Cap Magazine

Powder Magazine

## Restoration Material Estimates

There are 4 different materials that are being utilized at the site.

1. **Topsoil:** Currently, this is largely being salvaged from the gently graded area above the sedimentation pond. The source is a mix of topsoil, colluvium and inert blast rock that has been used and reused at various stages of the mine's reclamation and construction history. The graded area source contains roughly 15,000 cubic yards of material. Another topsoil source is located adjacent to and above the 14-Level portal area. This has not been relied upon yet. At this time, there appears to be enough topsoil in close proximity to the site to complete Phase 1.
2. **Wasterock:** Inert wasterock is being utilized for road base and could be used for geotechnical engineering purposes in P1T3. There is roughly 30,000 cubic yards of this material but it is not all readily available because it comprises the mine pad where the shop, supplies, vehicles and equipment is staged. Another possible source of inert wasterock is from the Revenue Mine. An agreement is currently being negotiated to govern if and how those materials would be brought on site. There could be as much as 65,000 tons available, which is much more than Caldera will ever need for the Work, but the availability of this material is dependent on factors that are outside of Caldera's control. At this time, the completion of the Work is not contingent upon securing an outside source of inert wasterock.
3. **Vane-Arm Blocks:** The estimated volume needed of large blocks suitable for the 28 planned vane arms is roughly 1,120 cubic yards. Roughly ½ of that has either been stockpiled or installed (e.g. Imogen Creek). At this time it is anticipated that the remainder of the vane arm material can be produced from blasting and boulder harvesting.
4. **Rip-Rap:** The most difficult volume estimate pertains to rip-rap which will be placed on an as needed basis on the stream banks between vane arms. It is anticipated that the entirety of the needed rip-rap can be salvaged from the area immediately surrounding the tailings. It is currently being screened from the graded area above the sedimentation pond and from undersized blast rock resulting from producing vane arm blocks. Rip-rap can also be salvaged from the creeks as they are cleared of obstructions and the banks are widened. However, it is still possible that the U.S. Mountain rock slide may need to be relied upon for rip-rap.