

Bonita Peak Mining District Update

September 2019



COLORADO
Department of Public
Health & Environment



<http://www.epa.gov/superfund/bonita-peak>

Current Activities

- EPA has completed mixing sludge from the Gladstone interim water treatment plant (IWTP) with tailings at the Kittimac source area. The mixture was used to stabilize the source areas at Kittimac. Final grading and revegetation is underway and will be completed this fall.
- In spring 2019, EPA reviewed dewatering methods for the IWTP sludge to make transportation, handling, and storage of that sludge more effective. After a bench scale test on that dewatering was conducted, EPA selected a contractor—who specializes in centrifugal sludge dewatering processes—to begin pilot testing at the IWTP. That pilot testing is ongoing.

- One of the leading sources of metals loading to nearby waterways originates from the runoff of contaminated soils from mine tailings in the Bonita Peak Mining District (BPMD). In an effort to stabilize the solid media in source areas in BPMD, EPA is implementing a BioCement pilot study on the north side of Kittimac. BioCement is a technology that provides an innovative erosion control strategy that uses natural biochemical reactions that solidify loose soils into rock through “microbial induced calcite precipitation.” The process involves the manipulation of on-site microbial populations so only microbes with the ability to transform calcium into calcite are present. These existing, target microbes will then be fed a calcium rich solution allowing for the “cementation” of loose soils through calcite precipitation. A total of four 5' x 15' areas of the Kittimac site will be treated with BioCement over a two-month period to evaluate if this innovative technology will effectively secure the tailings in place and minimize the runoff of contaminated soils.



From tailings to rock, the BioCement process.

This BioCement pilot study will determine if this technology can be used for stabilization for additional tailings and soil. If successful, it may be used to stabilize the railroad spur which is adjacent to Kittimac. The railroad spur is an important cultural resource and may be used to stabilize mine waste at other source areas within the BPMD.

Site Updates

- EPA successfully completed the drilling of its monitoring well into the American Tunnel in August 2019. EPA is in the process of analyzing the groundwater data collected from the well. EPA will continue to monitor water levels over time using a transducer in the well. Water quality data and water level measurements will inform future decisions about how to manage the Bonita Peak Groundwater System to control and/or treat discharges from affected mines.
- EPA has completed its Site-wide Operating Procedure which documents The EPA's process for compliance with the National Historic Preservation Act (NHPA) as an applicable requirement of Superfund response actions at BPMD. EPA is committed to the protection of cultural resources and compliance with the NHPA and will work to ensure that any final remedy selected by the agency complies with the NHPA. This document can be found at the link below.
- The Sunnyside Gold Corporation recently granted EPA access to perform focused geotechnical evaluations of the four Mayflower tailings impoundments in order to determine if the Mayflower impoundments are suitable locations for a long-term repository for the IWTP sludge and mine waste from the BPMD.
This repository investigation will begin with a geotechnical evaluation of four test pits, one at each of the tailings impoundments. Then EPA will drill a borehole at each of the four Mayflower tailings impoundments. The data from this investigation will include water level measurements as well as geotechnical and geochemical sample collection. The test pits and boreholes will be drilled in October 2019.
- EPA intends to implement remedial actions, as described in the Interim Record of Decision, at the Henrietta, Natalie Occidental, and Koehler/Junction source areas in October 2019.



Historic rail spur at Kittimac.

New on the Web

- [Bonita Peak Mining District Update, August 2019 – Spanish \(PDF\)](https://sempub.epa.gov/src/document/08/100006844) (2 pp, 1 MB)
(Novedades del distrito minero Bonita Peak, agosto de 2017)
<https://sempub.epa.gov/src/document/08/100006844>
- [Site-Wide Operating Procedure: Compliance with the National Historic Preservation Act at the Bonita Peak Mining District Superfund Site \(PDF\)](https://sempub.epa.gov/src/document/08/100006709) (9 pp, 900 K)
<https://sempub.epa.gov/src/document/08/100006709>