

Walker Mine Tailings Site

Name, Location, and Type of Mine or Mine

Feature: The Walker Mine Tailings is located in Plumas County on the Plumas National Forest, 15 miles east of Quincy, California.

Project Partners: U.S. Forest Service, Department of Conservation, Department of Geological and Environmental Sciences at California State University, Chico

Project Cost: \$667, 680

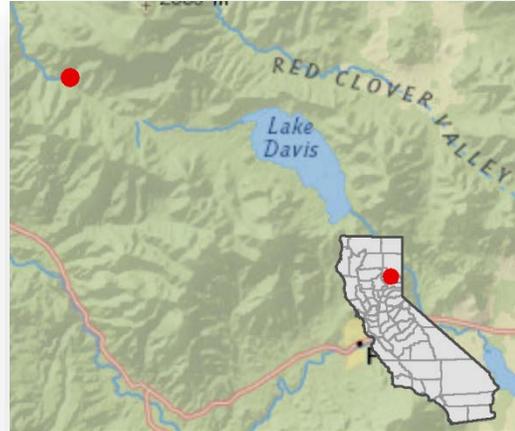
Remediation/Cleanup Funding Source: USFS, DOC, CSU Chico

Mine History/Project Background

The Walker Mine produced significant quantities of copper and minor amounts of gold and silver during its operation between 1915 and 1941. Tailings were produced from a mill located at the mine. The tailings flowed as a slurry, 3/4 of a mile southwest and downstream of the mill to the confluence of Dolly Creek (DC) and Little Grizzly Creek (LGC). Free water in the tailings evaporated long ago leaving approximately 100 acres of fine-grained, sandy, silty, and clayey tailings.



Silica-laden dust blows across the tailings, impacting air quality. Photo: Dave Brown, CSU Chico (2014)



The Walker Mine and the mine tailings sites have long polluted DC and LGC with heavy metals. Efforts to address contaminant releases from the Walker Mine and the tailings site extend over decades. The Central Valley Regional Water Quality Control Board has adopted several waste discharge requirements since 1958 with the last issued in 2000. In the 1990s the Forest Service conducted a Site Investigation and a Feasibility Study as part of a Remedial Investigation that resulted in a Record of Decision (ROD) in 1994.

Among the nine recommendations listed in the ROD, the USFS, DOC and CSU Chico are focused on developing a revegetation plan to revegetate 60 acres of the tailings area with a sustainable community of grasses, shrubs, and trees, and elimination of the inhalation hazard from fugitive dust onsite.

Remediation/Cleanup Approach

The following activities have occurred onsite:

- Collection of 34 tailings samples in 2014. Samples analyzed for total metals and nutrients.
- Ambient dust monitoring during summer of 2014. Weather monitoring during summer of 2014 and 2015.
- Construction of two vegetation test plots in 2014, testing both possible amendments and cover types. These test plots were modified in 2015 based on results from the previous year's monitoring.
- **Installation of lysimeters and column leach tests in 2014 to determine** if proposed amendments will mobilize nutrients or heavy metals. Additional column tests were performed in 2015 to test the water retention capabilities of various amendments.



Vegetation test plot installed in 2014.
Photo: Sarah Reeves, DOC (2014)

Challenges

During two years of project work the following issues have been identified.

- Wind-blown tailings covered the test plots, threatening to swamp the seeds in the test plots before germination could take place.
- The winter of 2013-14 was a below normal water year resulting in less moisture than needed to sustain the seeds planted in the test plots.
- Restrictions on irrigating the test plots further limited the success of the seeds to germinate.