United States Environmental Protection Agency

OSWER/OSRTI
State, Tribal, and Site Identification Branch
Washington, DC 20460

NATIONAL PRIORITIES LIST (NPL)

****Final Site****

September 2007

FORMOSA MINE | Douglas County, Oregon

Site Location:

The Formosa Mine site is a former copper, zinc and thorium mine in Douglas County, in southwest Oregon, approximately 25 miles south of Roseburg.

Site History:

Mining occurred from 1910-1937, after which there was a documented thriving fishery as late as the 1980s. Formosa Exploration Inc. (FEI) re-opened the mine from 1990 until 1993, producing 350 to 400 tons of ore per day. Reclamation began in 1994 and proved ineffective in addressing continuing releases to adjacent streams. This site is no longer an active mine, but is an ongoing source of contamination to Middle Creek and beyond.

Site Contamination/Contaminants:

Storm water-driven contaminant releases from the mine have lead to an annual discharge of approximately five million gallons of acid rock drainage, containing up to 30,000 pounds of dissolved copper and zinc, along with other metals. Heavy metals concentrations in Middle Creek and the South Fork, and into Cow Creek, exceed aquatic life standards by a factor of between 10 and 100. The heavy metals are severely degrading the aquatic habitat for macroinvertebrates, resident fish, coastal steelhead trout, and Oregon coastal coho salmon. The primary sources of these metals is underground mine workings, surface tailing piles and the transport of metals to these creeks via ground water and surface storm water flow. Significant concentrations of arsenic, barium, copper, lead, mercury, nickel, and zinc have been detected in all source samples collected at the site.

Potential Impacts on Surrounding Community/Environment:

Low pH shallow ground water and adit drainage to surface water, both laden with high concentrations of metals, have been draining into the headwaters of Middle Creek and the South Fork of Middle Creek. The resultant discharge has contaminated the entire 13 mile reach of Middle Creek and the South Fork drainage, and Cow Creek.

Response Activities (to date):

As part of the reclamation of the mine, FEI removed a substantial portion of nearly 20 tons of sphalerite along with some finely ground pyritic waste rock it had released into Middle Creek before the mine's closure in 1994. Other site reclamation efforts included: (1) construction of an encapsulation mound and drain fields to try to prevent seepage of acid mine drainage; and (2) backfilling of crushed ore, tailings, and zinc concentrate into underground mine workings, creating additional sources of contamination that are now draining into ground water and surface water.

In November 2000, the Oregon Department of Environmental Quality installed a water diversion system to try to divert drainage from Bureau of Land Management land back to the much larger private portion of the site. The diversion system has not been successful.

[The description of the site (release) is based on information available at the time the site was evaluated with the HRS. The description may change as additional information is gathered on the sources and extent of contamination. See 56 FR 5600, February 11, 1991, or subsequent FR notices.]