Leviathan Mine Superfund Site

U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • February 2017

History and Timeline

Background

Leviathan Mine is an abandoned open-pit sulfur mine. The mine is located approximately 25 miles southeast of Lake Tahoe high on the eastern slope of the Sierra Nevada mountain range, in a remote portion of northeastern Alpine County, CA surrounded by national forest and private land. The acid mine drainage (AMD) from Leviathan Mine has historically contaminated a nine-mile stretch of the Leviathan-Bryant Creek watershed, impacting Leviathan, Aspen, and Bryant Creeks, as well as the East Fork Carson River. In 2000, the U.S. Environmental Protection Agency (EPA) added the mine and the impacted areas (the "Superfund site") to the National Priorities List (NPL). The NPL is the list of the most complex, uncontrolled hazardous waste sites throughout the United States that threaten public health and the environment.

The historical activities from the Leviathan Mine have created AMD, impacting the surrounding environment. Sulfuric acid is created when water (rainwater, snowmelt and subsurface water) interacts with rocks containing sulfur-bearing minerals. The resulting highly acidic water moves into the surrounding environment, such as the groundwater, surface water and soil, and may have harmful effects on humans, animals and plants.

Although a long-term cleanup plan has not been developed, early cleanup activities are being conducted to reduce the discharge of untreated AMD. In the mid-1980s, the Pollution Abatement Project began which included re-grading the site, building evaporation ponds, and channeling the creek. Interim treatment systems have greatly improved the water quality of the Leviathan-Bryant Creek watershed.

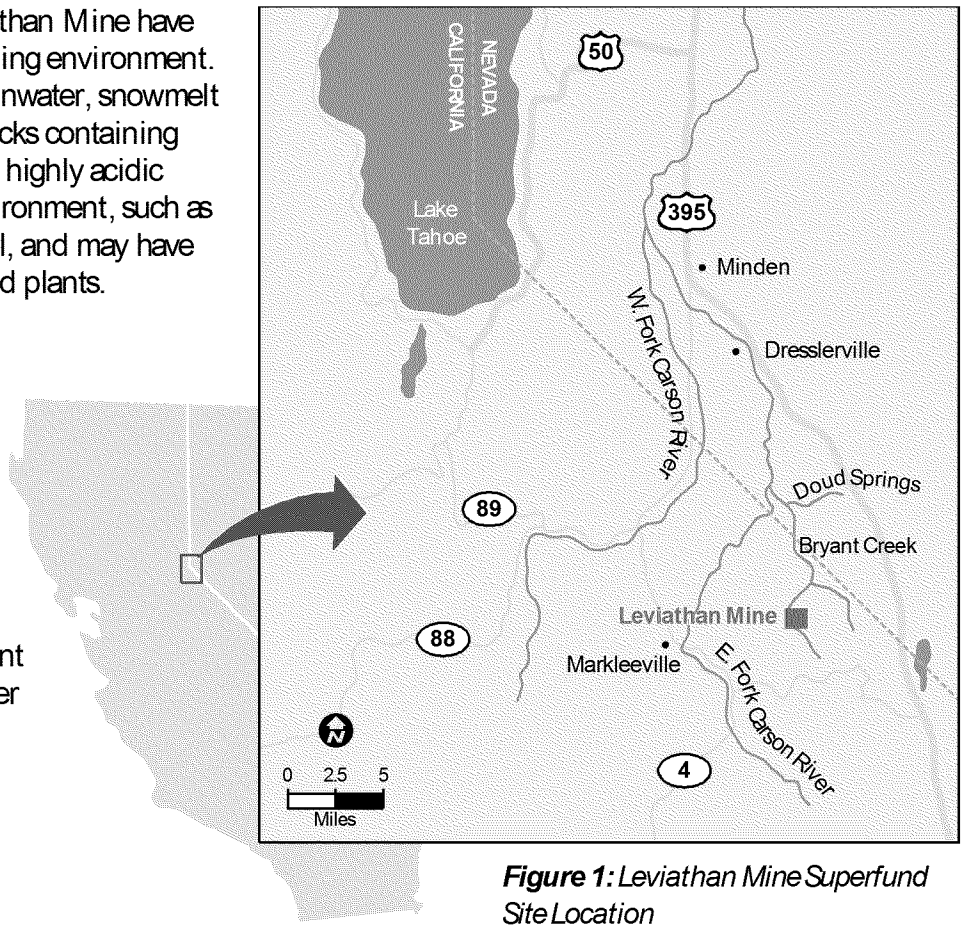


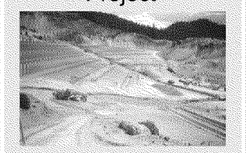
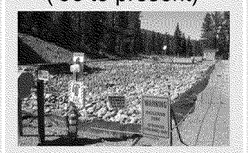
Figure 1: *Leviathan Mine Superfund Site Location*

Acid Mine Drainage (AMD)
When highly acidic water that is rich in metals moves (or drains) out of a mined area into the environment

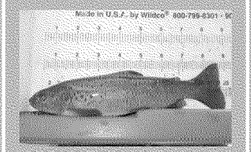
Timeline for the Leviathan Mine Superfund Site

1863-1872	1873-1935	1935-1941	1952-1962	1977	1982-1984	1985	1995-1998	1999	2000
Underground mining for copper	Inactive	Underground mining for sulfur	Open pit sulfur mining by the Anaconda Company Fish kills reported in 1950's	Atlantic Rich f ield Company purchased Anaconda	USGS Groundwater monitoring began ('82) RWQCB acquired the site to address water quality ('84)		Benthic macroinvertebrate sampling begins ('95) EPA and ARC Pond water treatment field studies Surface water monitoring begins ('97-'98)		Supported by the Washoe Tribe, EPA added the site to the National Priorities List (NPL)

Early Interim Actions (Summary)

2001 - 2009	2009-2010	2014	2015	2016	2017	2018	2019	2020	2021
Lime treatment system	High-density sludge treatment system ('09 to present)		Results of revegetation efforts, July 2015			Pollution Abatement Project 	Aspen Seep Bioreactor ('96 to present) 	Pond water treatment system ('99 to present)	

RI/FS Schedule

2001 - 2009	2009-2010	2014	2015	2016	2017	2018	2019	2020	2021
RI/FS Ordered from EPA to ARC ('08) Groundwater Wells ('08)	Workplans & Field Sampling ('09) Groundwater Wells	Workplans & Field Sampling	Workplans & Field Sampling Evaluate Data & Identify Gaps 	Workplans & Field Sampling Evaluate Data & Identify Gaps	Evaluate Data & Identify Gaps** Sample & Resample to Fill Data Gaps**	Final RI/FS Report**			

Overall Schedule

2019	2020	2021
Proposed Plan** Public Meeting**	Record of Decision**	Remedial Design**

Treatment System Achievements 1999-2016

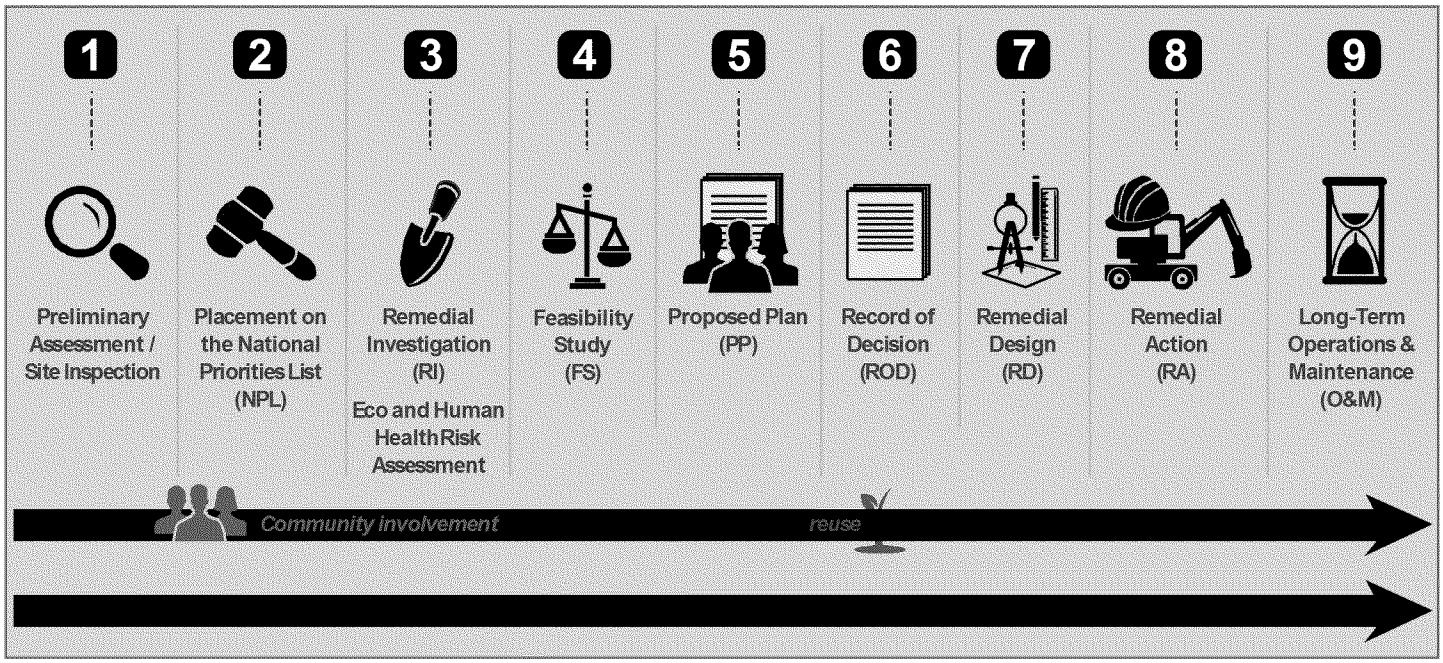
	CA RWQCB	ARC	TOTAL	
Water Treated	107,480,000	137,672,000	245,152,000	Gallons
Aluminum Removed	405,337	43,606	448,943	Pounds
Arsenic Removed	5,500	267	5,767	Pounds
Iron Removed	592,284	219,856	812,140	Pounds
Nickel Removed	6,466	1,031	7,497	Pounds

Acronyms

RWQCB – California Regional Quality Control Board
USGS – United States Geological Survey
ARC – Atlantic Rich f ield Company
EPA – United States Environmental Protection Agency
RI/FS – Remedial Investigation/Feasibility Study

***Proposed Schedule*

The Superfund Process



Washoe Tribe of Nevada & California Role

EPA's Policy on Consultation and Coordination with Indian Tribes discusses EPA's responsibility to consult with tribes and consider their interests when taking action that may affect them or their resources. EPA works with the Washoe Tribe and provides funding through a cooperative agreement. The Washoe Tribe has given helpful comments on a number of site documents.

For More Information

Visit one of the Information Repositories located at:

Douglas County Library
1625 Library Lane
Minden, NV 89423
(775) 782-9841

EPA Superfund Records Center
95 Hawthorne St., 4th Floor
San Francisco, CA 94105
(415) 536-2000

Talk with one of the EPA or Washoe Tribe of Nevada & California representatives:

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Websites:
Leviathan Mine Superfund Site – **http://go.usa.gov/x9mf4**
April 2015 Site Updates Fact Sheet – **http://go.usa.gov/x9mfZ**

Be included on the Leviathan Mine Superfund site mailing list by contacting Yolanda Sanchez.

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