United States Environmental Protection Agency
Region IX
POLLUTION REPORT

Date: Thursday, May 27, 2010
From: Tom Dunkelman

Subject: Fluids Management III Final POLREP
Yerington Anaconda Mine
102 Burch Dr., Yerington, NV
Latitude: 38.9988000
Longitude: -119.1911000

POLREP No.:	8	**Site #:**	09GURV08
Reporting Period:	10/2008 - 5/2010	**D.O. #:**	022-9036
Start Date:	9/8/2008	**Response Authority:**	CERCLA
Mob Date:	9/8/2008	**Response Type:**	Time-Critical
Demob Date:	5/27/2010	**NPL Status:**	Non NPL
Completion Date:	5/27/2010	**Incident Category:**	Removal Action
CERCLIS ID #:		**Contract #**	EP-W-07-022
RCRIS ID #:			

Site Description

The Yerington Mine Site is located approximately two miles west of Yerington, directly off of Highway 95, at 103 Burch Drive, Yerington, Lyon County, Nevada, and includes portions of Township 13N, Range 25E, Sections 4, 5, 8, 9, 16, 17, 20, and 21 (Mount Diablo Baseline and Meridian) on the Mason Valley and Yerington USGS 7.5 minute quadrangles. The geographic coordinates are 38E 59' 53.06" North latitude and 119E 11' 57.46" West longitude. The Site occupies 3,468.50 acres of disturbed land in a rural area, bordered to the north by open fields of alfalfa and residential acreage, and to the east by Highway 95, which separates the Site from the city of Yerington. Approximately fifty percent of the Site is privately owned land, and the rest is land within the jurisdiction, custody and control of the United State Bureau of Land Management ("BLM").

The Site began operation in or about 1918, originally known as the Empire Nevada Mine. In 1953, Anaconda Minerals Company ("Anaconda") acquired and began operating the Site. In or about 1977, Atlantic Richfield Company ("Atlantic Richfield") acquired Anaconda and assumed its operations at the Site. In June 1978, Atlantic Richfield terminated operations at the Site. In or about 1982, Atlantic Richfield sold its interests in the private lands within the Site to Don Tibbals, a local resident, who subsequently sold his interests with the exception of the Weed Heights community to Arimetco, Inc. ("Arimetco"), the current owner. Arimetco operated a copper recovery operation from existing ore heaps within the Site from 1989 to November 1999. Arimetco has terminated operations at the Site and is currently managed under the protection of the United States Bankruptcy Court in Tucson, Arizona.

EPA conducted an initial removal action at the Site, from February to May 2006. This work focused on removal of PCB containing transformers and fugitive dust suppression including construction of an 80-acre soil cap and application of a soil sealant to other areas of the site believed to be contributing dust.

From August to November 2006, EPA condcuted a second removal action which addressed fluids management problems associated with the Arimetco Heap Leach System. This system includes ten ponds, all of which are in varying stages of disrepair. As part of this removal action, EPA conducted repairs and improvements to the Slot Pond #2, constructed an interceptor trench along the Megapond and constructed a four-acre Evaporation Pond.

In August and November 2007, EPA ERS conducted two additional removal assessments at the Site. One assessment focused on evaluating radiological contamination of the "Process Area" of the Site. The second removal assessment performed in August 2007 consisted of sub-surface sampling and analysis beneath the Arimetco heap leach ponds.

From October to November 2007, EPA conducted a removal action to address fluids management issues associated with the Bathtub Pond. This removal action included removal of sediments and liner from the pond, backfilling and grading the pond and construction of an interceptor trench along the shoulder of the

pond.

Current Activities
10/20/08- 5/27/2010.

In September-October 2008, approximately 8,000 cubic yards of kerosene contaminated soil, were excavated by EPA from the area of the Old and New Raffinate Ponds and the associated underground vaults. This work is documented in a report prepared by the EPA START contractor dated May 28, 2008. This soil was placed in two bioremediation cells located on top of an existing heap leach pad (the Slot Heap Leach Pad). This leach pad, which is at least 120 feet in height, sits on top of an HDPE liner. The average soil thickness within the bioremediation cells is approximately two feet. Nutrients (hay, manure, diammonium phosphate, ammonium nitrate) and water were added in proportions recommended by the EPA Environmental Response Team (ERT), and the pads were covered with a liner in order to limit evaporation. This work was completed in October 2008. A sampling and analysis plan was prepared by the EPA START contractor in September 2008. For sampling purposes, the northern pad was divided into two sections BTA1 and BTA2, while the southern pad was also divided into two sections BTA3 and BTA4. Samples have been collected on four occasions at roughly six month intervals (Oct. 2008, May 2009, October 2009, March 2010), in order to monitor the bioremediation progress. For each sampling event, a 4-point composite sample was collected from each of the four sampling areas. Total Petroleum Hydrocarbon (TPH)-Diesel analyses were performed by the EPA Richmond lab. In May 2009, the covers were removed from the pads, additional water and fertilizer was added, the material was turned using a bulldozer and the pads were recovered with a liner. In the winter of 2009, the cover of Cell BTA-3 was torn off by wind. It was replaced in May 2009. In the winter of 2010, the covers of Cell BTA-3 and BTA-1 were torn off by wind. This may explain why the bioremediation process of these two cells has lagged slightly behind the other two cells. In May 2010, EPA removed the cover from the cells, applied additional water and turned the soil using a bulldozer.

Analytical Summary - TPH Diesel results (ppm) for Kerosene Bioremediation Cells and Percent Contaminant Reduction

Sample #	Oct. 2008	May 2009	Oct 2009	March 2010	% Reduction
BTA1	1,800	540	170	270	85%
BTA2	3,200	320	130	120	97%
BTA3	4,300	1,000	530	650	85%
BTA4	6,000	1,200	550	160	97%

Given the significant reduction in contaminant concentration and mass, EPA believes that bioremediation has progressed sufficiently to terminate treatment. The average contaminant reduction for the bioremediation cells exceeds 90%. Neither EPA nor Nevada have a specific soil remediation standard for either kerosene or TPH. Prior to the initiation of bioremediation activities, VOC and SVOC contaminant concentrations were all below the EPA Industrial Preliminary Remediation Goals (PRGs). Section 445.347 of the Nevada Administrative Code (NAC) identifies a reporting guideline of 100 mg/kg. This is a reporting guideline only and is not a cleanup standard. Given the significant reduction in contaminant mass, that all VOCs and SVOCs are below industrial PRGs, the low levels of TPH remaining in the soil, and the fact that the bioremediation cell sits on top of a heap leach pad that is more than 120 feet thick and is underlain by an HDPE liner; EPA has terminated the bioremediation process.

Planned Removal Actions
Bioremediation of the kerosene contaminated soil has progressed to a satisfactory level and EPA has terminated bioremdiation efforts. The Phase III Fluids Management removal action is now complete.

Next Steps
None

Key Issues
None