United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Friday, November 14, 2008
From: Leo Francendese

Subject: O&M Update
Barite Hill Nevada Goldfields
McCormick, SC
Latitude: 33.8711000
Longitude: -82.2972000

POLREP No.:	19	**Site #:**	A4NZ
Reporting Period:	11/08 - 03/02	**D.O. #:**	
Start Date:	10/15/2007	**Response Authority:**	CERCLA
Mob Date:	10/15/2007	**Response Type:**	Time-Critical
Demob Date:	11/3/2008	**NPL Status:**	Non NPL
Completion Date:	11/3/2008	**Incident Category:**	Removal Action
CERCLIS ID #:		**Contract #**	
RCRIS ID #:			

Site Description

The Barite Hill/Nevada Goldfields site is located approximately 3 miles south of McCormick, South Carolina between US 378 and US 221 on the northern side of Road 30 in McCormick County, South Carolina. The mine site is relatively remote; there are no buildings, homes, or commercial buildings within 0.5 miles of the boundary. The site actively mined gold from 1991 to 1995. From 1995 until Nevada Goldfields filed for Chapter 7 Bankruptcy in 1999, the reclamation of the site was being addressed by Nevada Goldfields. On July 7, 1999 Nevada Goldfields handed the facility's keys to SCDHEC and abandoned the site.

The site is located along a topographic high ridge area forming the headwaters of an unnamed tributary to Hawes Creek. The topography of the area consists of rolling hills with ridgelines at an elevation of about 500 feet. Within the site, the ridgeline comprising the site has a high point of about 510 feet and an average elevation of approximately 480 feet.

The permitted mine site totals 795.2 acres. Of this total, 659.7 acres are designated as buffer area (areas not disturbed beyond the pre-mine natural state); therefore the maximum disturbance area is 135.5 acres.

The facility used a cyanide solution in a heap leach process to extract gold from ore. There are 7 processing ponds and 1 sediment pond onsite. Three large, multi-acre waste rock piles exist in varying condition. Each waste rock pile has the potential for producing acid. Storm water run on and runoff are not controlled at the site. The Main Pit ("Acid Pit") from the mining operations remains. The 10 acre Acid Pit contains approximately 60,000,000 gallons of water with an average pH of 2 ~ 2.2 and a high dissolved metal content. Seeps from the Acid Pit containing acidic water with high dissolved metal content are being released to the northern unnamed tributaries of Hawes Creek which borders the pit at a rate of approximately 5 gpm.

As per a referral by the State of South Carolina, the EPA Region 4 Removal Program conducted a Removal Site Evaluation (RSE) according to the National Contingency Plan (NCP). During the RSE of March 2007, the OSC conducted an emergency response whose scope included the demolition of a furnace building and onsite neutralization of over 2000 lbs of varying strength acids and bases. As of 9/19/07, the Agency has approved an Action Memorandum to conduct a removal action. The removal action commenced on 10/15/07 and includes a Bureau of Reclamation designed cap for the 250,000 CYS of acid producing waste rock adjacent to the Acid Pit, Acid Pit neutralization and cyanide deactivation in one of the onsite process ponds.

The project is expected to take about 12 to 16 months to complete and is projected to cost approximately 4,000,000 dollars. Details concerning this action can be found in both the documents section and Pollution Reports (POLREPS) which are updated on a periodic basis.

Current Activities

Monitoring Activities:

Currently, START conducts monthly Main Pit lake (the lake) and Mineral Springs (the creek) surface water sampling. Sampling reports from each month can be found at these links:
November 2008 http://epaosc.net/sites/2768/files/1108letterreport.pdf
December 2008 http://epaosc.net/sites/2768/files/1208letterreport.pdf
January 2009 http://epaosc.net/sites/2768/files/0109letterreport.pdf

Maintenance Activities:

Erosion Control

February 22 – 27, 2009
During this week, ERRS contractor implemented erosion controls in the watershed drainage area at southeast end of Main Pit lake. START was tasked with documenting site activities and updating the OSC. OSC was on-site 02/26 - 27/2009.

A combination of silt fencing, straw bails, re-grading, rip-rap, and hydroseeding were used as controls. Please see before and after pictures in photolog (http://epaosc.net/sites/2768/files/022709erosionphotolog.pdf). In total, 453 ft. silt fencing, 86 straw bails, 500 tons large rip-rap, 100 tons small rip-rap, and 84 cu. yds. soil was used. Large rip-rap provided by Hansen rock quarry and trucked by MC Hauling.

ERRS and START demobed 02/27/2009.

Planned Removal Actions

At the direction of OSC, ERRS will reseed rest of watershed drainage area with bahia. In addition, landscaper will repair damaged irrigation system.

Next Steps

- The current real-time monitoring system for the pit lake has been taken offline and replaced by monthly sampling events. The pit lake retains an average pH of 5.5 with negative ORP approaching 200. Both are indications of successful ongoing treatment.
- A long term monitoring system is being coordinated with the remedial program to replace the prior system. The design presentation occurred on October 2nd in Atlanta. The Barite Removal Project Team was present as well as the RPM, Removal/Remedial Program Management, and the design contractor. Additional funding will be added by the removal program to the pool of available funds for long term monitoring. Final working designs have been submitted for comment and review among the coordinating parties.
- As per the Action Memo, the Removal Program Project Team will continue to provide 2 years of O&M in coordination with SCDHEC.

Key Issues

- The Barite Hill Pit Lake has demonstrated a 79 to 88 % cost savings as compared to traditional acid mine pit closures. Mass balance calculations of pit lake acid producing vs pit lake acid neutralizing potential demonstrate long term sustainability. A summary of the removal remedy, including these calculations and supporting analytical evidence is being compiled. A final draft of these findings are attached. Innovative and Low Cost Remedy at the Bartie Hill Pit Lake (Final Draft)

response.epa.gov/baritehillnevadagoldfieldsremoval