

United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Saturday, April 19, 2008

From: Leo Francendese

Subject: Grading/Capping/Pit Treatment Continues

Barite Hill Nevada Goldfields

McCormick, SC

Latitude: 33.8711000

Longitude: -82.2972000

POLREP No.:	8	Site #:	A4NZ
Reporting Period:		D.O. #:	
Start Date:	10/15/2007	Response Authority:	CERCLA
Mob Date:	10/15/2007	Response Type:	Time-Critical
Demob Date:		NPL Status:	Non NPL
Completion Date:		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

CONSTRUCTION ACTIVITIES

- Carbide lime neutralization of the Acid Pit water began on February 4th, 2008. To date approximately 1710 tons of carbide lime have been mixed into the pit waters at a 4% mixture rate in an aerated batched application system developed and constructed by the prime contractor.
- Patented carbon loading treatment methodology continued as part of the Acid Pit treatment strategy. The treatment will continue simultaneously with the neutralization. To date, approximately 1136 tons of Georgia Pacific provided, aged-wood chips, 375 tons of molasses and 21 tons of methanol have been carbon loaded into the Acid Pit.
- Carbide lime neutralization is proceeding accordingly. The Acid Pit turned over this week and provided adequate blending of the surface and subsurface zones while sustaining an oxidation reduction potential (orp) conducive to the proliferation of sulfate reducing bacteria and an overall Acid Pit pH of approx 6. Data as of 3-13-08 indicate an 80 to 99% reduction in zinc, aluminum and copper. Additional water quality results are pending.
- Grading of the south waste rock pile is complete and the initial layer of saprolite has been laid in accordance with BOR plans. The carbide lime treatment system was moved to allow final grading of the north waste rock pile.
- As part of the BOR reclamation design, two wells upgradient of the Acid Pit (near the access road) were drilled to explore an additional source of total watershed water to the Acid Pit. The current design surface drainage watershed is approx 20 acres. These wells are intended to serve as a backup water source for maintaining a subaqueous cap on residual pyritic material in the event of future droughts and to serve potential future irrigation needs for vegetative cap growth. The per well yields are approx 15 gal/min.
- EPA warehouse support contracts were onsite 4-18-08 to repair onsite weather station and relocate it to nearby Acid Pit eastern rim ridge.

INVESTIGATION/EVALUATION ACTIVITIES IN SUPPORT OF BOR DESIGN

- BOR Reclamation Design in progress. BOR submitted 100% complete grading plans for the south waste rock pile as of the beginning of March. Plans have been submitted to the SCDHEC for review and comment. No substantial objections have been raised to date.
- Flood hydrology calculations were completed for the mine pit watershed. Spillway design calculations are 80% complete.
- Samples were taken of the pregnant pond sump for scoping of the to be executed cyanide deactivation. Additional samples were taken to verify the cyanide levels.
- Georgia Pacific delivered approx 20 tons of material to be used as topsoil. Results are pending for carbon and nitrogen analysis in order to determine suitability of the material for revegetation.
- Satellite recorded mini-trolls continue to operate in the Acid Pit at 5' and 40' measuring parameters such as DO, ORP, pH, temperature and turbidity.
- Please see www.isi-data.com for updates at 1:00 PM and 7:00 AM. Login: jharrington Pass: jharrington.
- Weather station continues to monitor and record daily work conditions.

MEETINGS/PUBLIC AFFAIRS

- BOR visited the site on 4-15-08 to discuss as built spillway designs and conduct field surveillance of the proposed water level.
- SCDHEC representatives were onsite 4-16-08 to survey the progress and coordinate with OSC. The State continues to be satisfied with the pace, design and success of the project. Additionally, the State has been contacted by a Canadian company interested in future land use. As of 4-17-08, SCDHEC has contacted Region 4's Land Use Initiative Team and the OSC will coordinate with them as this proposal progresses.
- Georgia Pacific representatives were also onsite 4-16-08 to discuss pending delivery of material to be used as the base for topsoil to the cap.

response.epa.gov/baritehillnevadagoldfieldsremoval