



February 16, 2009

Mr. Leo Francendese
On-Scene Coordinator
U.S. Environmental Protection Agency
61 Forsyth Street, SW 11th Floor
Atlanta, Georgia 30303

**Subject: Surface Water Sampling Letter Report
Barite Hills Nevada Goldfields Site
McCormick, McCormick County, South Carolina
Contract No. EP-W-05-053
Technical Direction Document (TDD) No.: TNA-05-003-0049**

Dear Mr. Francendese:

T N & Associates, Inc. (TN&A), Superfund Technical Assessment and Response Team (START), prepared this Letter Report detailing activities performed in support of the Barite Hills Nevada Goldfields site (the site) investigation under Contract Number (No.) EP-W-05-053, Technical Direction Document (TDD) No. TNA-05-003-0049. All activities and procedures were performed in accordance with the EPA Science and Ecosystems Support Division (SESD) Region 4 Field Branches Quality System and Technical Procedures dated November 2007, and the EPA-approved site-specific Quality Assurance Project Plan (QAPP).

Under this work assignment, START was tasked with conducting water sampling of the Main Pit lake (the lake) and Hawes Creek tributary (the creek). Two samples were collected from the lake and three samples were collected near seep locations along the creek. Water quality parameters were measured simultaneously to water sampling. The site location map with sample locations and a map of the creek pH changes are provided in Attachment A. Water quality parameters from January 2009 and a comparative table of potentially applicable standards can be found in Attachment B with corresponding graphs. Laboratory analytical data is in Attachment C and the HASP is Attachment D.

Site Background

The site is an abandoned pit mine located approximately 3 miles south of McCormick, McCormick County, South Carolina between US Highway (Hwy) 378 and US Hwy 221 on the northern side of Road 30. The site is located in a relatively remote area; there are no buildings, homes, or commercial buildings within 0.5 mile of the site boundary.

The site is located along a topographic high ridge area forming the headwaters of Mineral Springs. The topography of the area consists of rolling hills with ridgelines at an elevation of about 500 feet above mean sea level (amsl). Within the site, the ridgeline comprising the site has a high point of about 510 feet amsl and an average elevation of approximately 480 feet amsl.

The Main Pit from the mining operations remains. When the mine was abandoned, the Main Pit flooded. The waste rock stockpiles previously surrounding the eastern and southeastern portions of the Main Pit were a source of acid rock drainage. The pit contains approximately 60 million gallons of water with an historical pH of 2 and a high dissolved metal content.

Field Investigation Activities

On 01/30/09, START conducted surface water sampling. The investigation consisted of measuring water quality and collecting water samples from the lake. A Health and Safety Plan (HASP) was developed for the site prior to fieldwork activities.

START collected one sample from the lake and four samples from the creek (Figure 1). Water quality parameters were measured at each sample location (Table 1). The lake water column was measured every meter from the surface to the bottom. BHR-MPS-008 was collected one meter below the lake water surface. BHR-S1-006 and BHR-S2-006 were collected from pooled water along the creek at Seep 1 and Seep 2, respectively. BHR-S3-006 was collected from the southwest fork in the creek at Seep 3 and BHR-S0-006 collected from the southeast fork. Lake samples were analyzed by Analytical Environmental Services, Inc. (AES) for dissolved target analyte list (TAL) metals, TAL metals, total organic carbon, pH, sulfate, and ferric/ferrous speciation. Creek samples were analyzed for pH, sulfate, and dissolved TAL metals. Aliquots sampled for dissolved TAL metals were filtered on-site using a 0.45 micron filter. Laboratory analytical reports are provided in Attachment C.

Conclusions

Table 2 is an analytical comparison of the lake surface from June 2008 through January 2009 of potentially applicable standards including priority and non-priority pollutants (http://www.epa.gov/waterscience/standards/wqslibrary/sc/sc_4_wqs.pdf). Graph 1 illustrates the lake surface dissolved metal concentrations overtime. Graph 2 is a close up of Graph 1 detailing lower concentrations. Table 3 is an analytical comparison of Seep 1, Seep 2, and Seep 3 overtime. Graphs 3, 4, and 5 illustrate Seep 1, Seep 2, and Seep 3, respectively, concentrations overtime. Graph 6 compares seep concentrations for January 2009. Graph 7 is a close up of Graph 6 detailing lower concentrations. Tables and graphs can be found in Attachment B.

Surface Water Sampling Letter Report

Barite Hills site

Page 3 of 3

If you have any questions or comments regarding this Letter Report or require any additional information, please contact me at (678) 355-5550 ext. 5710 or contact Russell Henderson, Project Manager, at ext. 5707.

Sincerely,

A handwritten signature in cursive script, appearing to read "Dannena Bowman".

Dannena Bowman

Junior Geologist

T N & Associates, Inc.

Superfund Technical Assessment and Response Team (START)

Enclosures

Attachment A – Figures

Attachment B – Tables & Graphs

Attachment C – Analytical Data

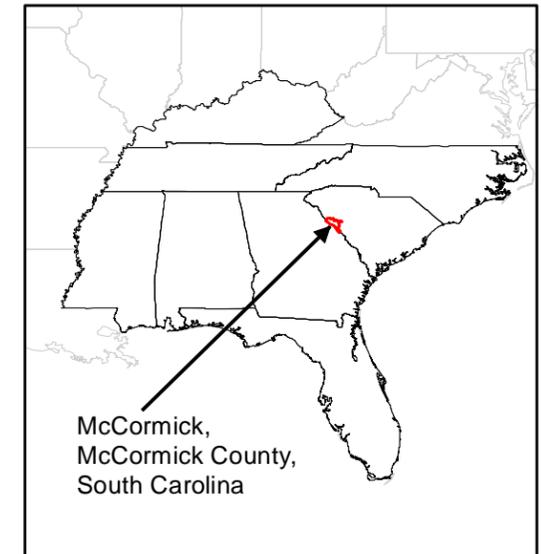
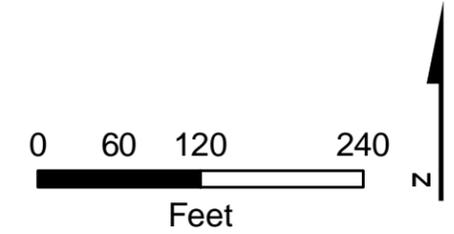
Attachment D – HASP

ATTACHEMENT A
FIGURES



Legend

- Sample Locations
- Hawes Creek



**BARITE HILLS
MCCORMICK, MCCORMICK
COUNTY, SOUTH CAROLINA
TDD No. TNA-05-003-0049**

**FIGURE 1
SAMPLE LOCATIONS**



**ATTACHMENT B
TABLES & GRAPHS**

Table 1
Water Quality Parameters

Nov. 19/21, 2008 YSI 5200

Main Pit Lake

depth (m)	pH	ORP (mV)	DO (mg/L)	Temp (°C)	Conductivity (mS/cm)
1	4.38	43.8	4.74	13.41	3.327
2	4.6	-74.5	0.9	14.83	3.607
3	4.73	-88.3	0.63	14.88	3.575
4	4.81	-94.2	0.6	14.87	3.559
5	4.76	-96.5	0.47	14.87	3.537
6	4.81	-99.4	0.43	14.87	3.534
7	4.82	-100.1	0.4	14.87	3.529
8	4.82	-102.8	0.38	14.81	3.527
9	4.72	-136.9	0.39	16.12	3.818
10	4.65	-154.9	0.3	16.71	4.009
11	4.8	-197	0.43	16.69	3.774
12	5.26	-196.8	0.4	16.66	3.684

Creeks

Location	pH	ORP (mV)	DO (mg/L)	Temp (°C)	Conductivity (mS/cm)
1					
2	3.05	452	3.1	7.91	3.568
3 SE	6.54	232	4.17	9.24	0.429
3 SW					

Dec. 16, 2008 YSI 5200

Main Pit Lake

depth (m)	pH	ORP (mV)	DO (mg/L)	Temp (°C)	Conductivity (mS/cm)
1	4.9	-42	1.5	11.59	3.258
2	4.95	-60	1.86	11.67	3.277
3	4.98	-64	2.39	11.66	3.278
4	5.02	-66	0.86	11.63	3.276
5	5.04	-70	0.71	11.62	3.276
6	5.07	-71	0.67	11.63	3.279
7	5.07	-71	0.63	11.64	3.28
8	5.08	-72	0.61	11.64	3.28
9	5.08	-72	0.6	11.63	3.28
10	5.1	-73	0.58	11.63	3.28
11	5.1	-73	0.57	11.63	3.28
12	5.1	-73	0.56	11.63	3.28
13	5.08	-94	0.54	11.66	3.285
14	5.8	-102	0.39	11.86	2.732
15	5.82	-113	0.41	11.85	2.721

Table 1
Water Quality Parameters

Feb. 7, 2009

Horbia U-22XD
Main Pit Lake

depth (m)	pH	ORP (mV)	DO (g/L)	Temp (°C)	Conductivity (mS/cm)
1	5.27	-6	1.79	9.7	6.44
2	5.27	-8	1.27	9.3	7.12
3	5.26	-9	0.79	9	6.02
4	5.27	-8	0.76	9	5.82
5	5.27	-10	0.7	8.9	6.09
6	5.27	-8	0.67	8.9	8.09
7	5.27	-35	0.58	8.9	9.3
8	5.27	-40	0.54	8.9	6.64
9	5.27	-40	0.55	9	8.12
10	5.27	-40	0.54	9	9.49
11	5.27	-10	0.74	8.9	6.9
12	5.98	-146	0	10	3.88
13	6.08	-160	0	10	2.56
14	6.09	-165	0	10	2.26
15	6.1	-185	0	10.4	1.7

Jan. 30, 2009

Creeks

Location	pH	ORP (mV)	DO (mg/L)	Temp (°C)	Conductivity (mS/cm)
1	2.6			8.2	
2	2.68			8.4	
3 SE	5.17			9.3	
3 SW	3.65			10.2	

**Table 2
Pit Lake Surface Potentially Applicable Standards Comparison**

	Human Health	SCDHEC WQC under R61-68		Oct. 2007	Jun. 10, 2008	Jul. 30, 2008	Aug. 22, 2008	Nov. 19, 2008	Dec. 16, 2008	Jan. 30, 2009
	MCL	CMC	CCC	BHB-005	BHR-5-001	BRR-JR-LAKE		BHR-MPS-001	BHR-MPS-006	BHR-MPS-006
				Pit Water Untreated (mg/L)	Pit water treated (Dissolved, mg/L)					
Potentially Applicable Standards (priority pollutants)										
Antimony	0.006	NSA	NSA	0.02	0.006	0.2	0.2	BRL*	BRL*	BRL*
Arsenic	0.01	0.34	0.15	0.968	BRL†	BRL†	BRL†	BRL‡	BRL‡	BRL‡
Cadmium	0.005	0.008	0.0026	1.57	BRL#	BRL#	BRL#	BRL#	BRL#	BRL#
Chromium	0.1	0.57	0.074	0.141	BRL†	BRL†	BRL†	BRL†	BRL†	BRL†
Copper	1	0.057	0.039	287	BRL†	BRL†	BRL†	BRL†	0.0278	0.0293
Lead	0.015	0.32	0.005	0.161	BRL†	BRL†	BRL†	0.0353	BRL†	BRL†
Nickel	0.61	1.071	0.167	0.404	0.163	BRL*	BRL*	BRL*	BRL*	BRL*
Selenium	0.05	NSA	0.005	0.23	0.022	0.028	0.01	BRL*	BRL*	BRL*
Zinc	5	0.339	0.339	40.2	1.44	BRL*	BRL*	0.118	0.061	0.0628
Potentially Applicable Standards (non-priority pollutants)										
Aluminum	0.2	0.75	0.087	224	0.347	BRL§	BRL§	0.257	0.314	BRL§
Iron	0.3		1	1150	309	322	287	169	212	165
Manganese	0.05-0.1			13.6	10.6	11	11.7	9.33	11.2	10.2

Notes:

SCDHEC - South Carolina Department of Health and Environmental Control
a - South Carolina Regulation 61-68, Water Classifications and Standards,
adopted June 2004 and adjusted for water hardness of 400 mg/L.

MCL - Maximum contaminant level

CMC - Criterion maximum concentration

CCC - Criterion continuous concentration

mg/L - Milligrams per liter

NSA - Standard not available

BRL - Below reporting limit

* - Reporting limit 0.02

† - Reporting limit 0.01

‡ - Reporting limit 0.05

- Reporting limit 0.005

§ - Reporting limit 0.2

Yellow - Exceeds one criteria (Human Health Standard or SCDHEC WQC)

Red - Exceeds all criteria (both Human Health Standard and SCDHEC WQC)

Table 3
Creek Potentially Applicable Standards Comparison

Seep 1	Human Health			SCDHEC WQC under R61-68			Bucket #2	Bucket #2	Nov. 19, 2008	Dec. 16, 2008	Jan. 30, 2009
	MCL	CMC	CCC	Jul. 30, 2008	Aug. 22, 2008	BHR-PIT-001	BHR-S1-006	BHR-S1-006			
Potentially Applicable Standards (priority pollutants)											
Antimony	0.006	NSA	NSA	NA	NA	BRL*	BRL*	BRL*			
Arsenic	0.01	0.34	0.15	NA	NA	BRL‡	BRL‡	BRL‡			
Cadmium	0.005	0.008	0.0026	5.05	0.005	0.353	0.456	0.611			
Chromium	0.1	0.57	0.074	NA	NA	0.0136	BRL†	0.0104			
Copper	1	0.057	0.039	84.3	0.138	13.7	14.7	19.3			
Lead	0.015	0.32	0.005	NA	NA	0.0432	0.0322	0.0473			
Nickel	0.61	1.071	0.167	NA	NA	0.0851	0.102	0.138			
Selenium	0.05	NSA	0.005	NA	NA	0.0286	BRL*	0.0238			
Zinc	5	0.339	0.339	45.6	0.157	10.3	13.9	19.1			
Potentially Applicable Standards (non-priority pollutants)											
Aluminum	0.2	0.75	0.087	NA	NA	36.4	35.4	41.7			
Iron	0.3		1	1070	493	58.9	159	200			
Manganese	0.05-0.1			23.6	6.93	13.4	15.7	19.6			

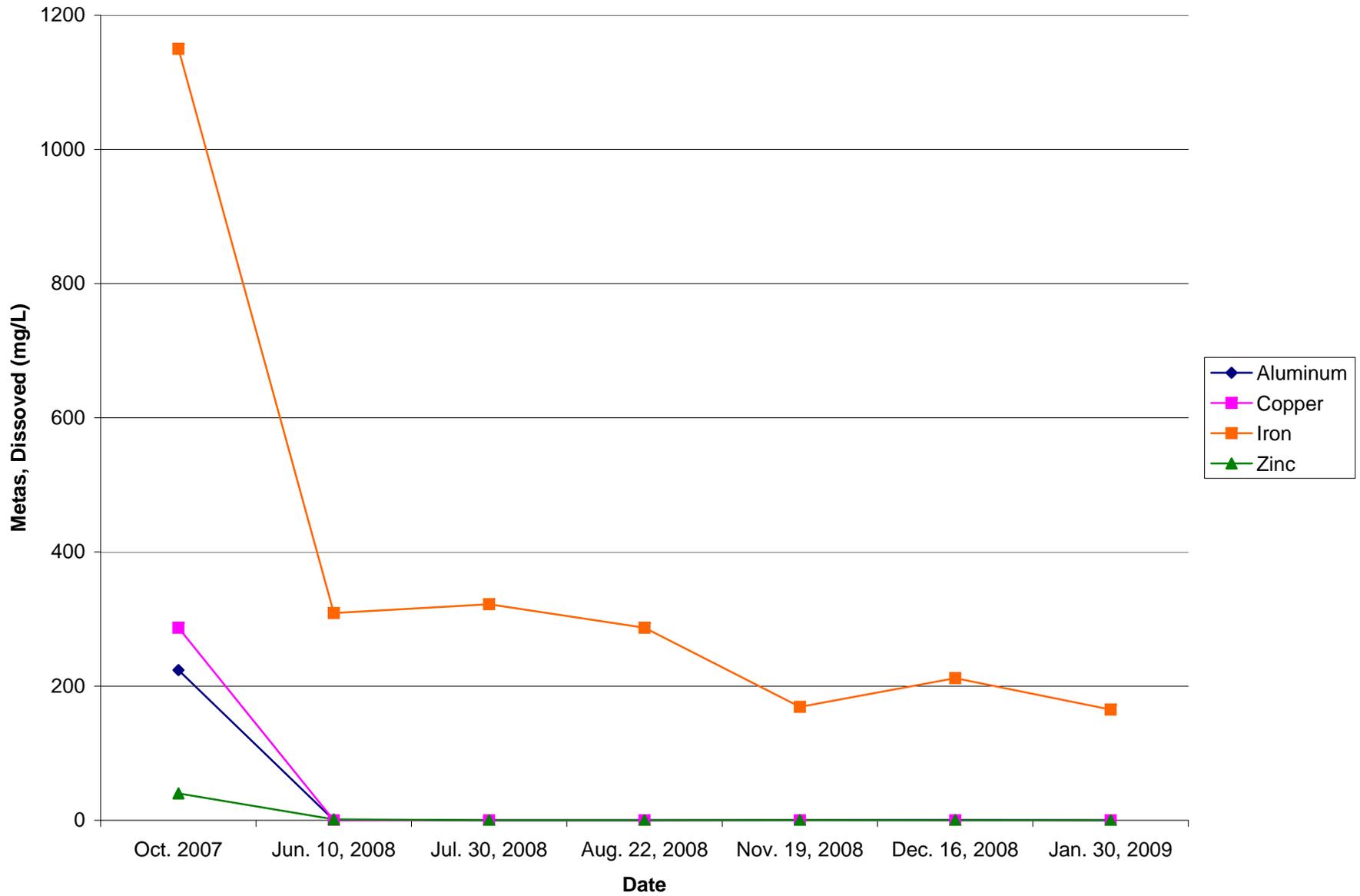
Seep 2	Human Health			SCDHEC WQC under R61-68			Bucket #2	Bucket #2	Nov. 21, 2008	Dec. 16, 2008	Jan. 30, 2009
	MCL	CMC	CCC	Jul. 30, 2008	Aug. 22, 2008	BHR-P2-005	BHR-S2-006	BHR-S2-006			
Potentially Applicable Standards (priority pollutants)											
Antimony	0.006	NSA	NSA	NA	NA	BRL*	BRL*	BRL*			
Arsenic	0.01	0.34	0.15	NA	NA	BRL‡	BRL‡	BRL‡			
Cadmium	0.005	0.008	0.0026	5.05	0.005	0.894	0.271	0.385			
Chromium	0.1	0.57	0.074	NA	NA	0.013	BRL†	BRL†			
Copper	1	0.057	0.039	84.3	0.138	27.7	9.27	12.4			
Lead	0.015	0.32	0.005	NA	NA	0.0323	0.0109	0.0193			
Nickel	0.61	1.071	0.167	NA	NA	0.215	0.0704	0.102			
Selenium	0.05	NSA	0.005	NA	NA	0.0562	BRL*	BRL*			
Zinc	5	0.339	0.339	45.6	0.157	31.2	9.62	14.1			
Potentially Applicable Standards (non-priority pollutants)											
Aluminum	0.2	0.75	0.087	NA	NA	48.6	18.1	22.3			
Iron	0.3		1	1070	493	171	87.5	115			
Manganese	0.05-0.1			23.6	6.93	53.3	15.3	26.6			

Seep 3	Human Health			SCDHEC WQC under R61-68			Bucket #2	Bucket #2	Nov. 21, 2008	Dec. 16, 2008	Jan. 30, 2009
	MCL	CMC	CCC	Jul. 30, 2008	Aug. 22, 2008	BHR-P3-005	BHR-S3-006	BHR-S3-006			
Potentially Applicable Standards (priority pollutants)											
Antimony	0.006	NSA	NSA	NA	NA	BRL*	BRL*	BRL*			
Arsenic	0.01	0.34	0.15	NA	NA	BRL‡	BRL‡	BRL‡			
Cadmium	0.005	0.008	0.0026	5.05	0.005	BRL#	BRL#	0.0224			
Chromium	0.1	0.57	0.074	NA	NA	BRL†	BRL†	BRL†			
Copper	1	0.057	0.039	84.3	0.138	0.0192	0.011	0.0973			
Lead	0.015	0.32	0.005	NA	NA	BRL†	BRL†	BRL†			
Nickel	0.61	1.071	0.167	NA	NA	BRL*	BRL*	BRL*			
Selenium	0.05	NSA	0.005	NA	NA	BRL*	BRL*	BRL*			
Zinc	5	0.339	0.339	45.6	0.157	0.349	0.0987	0.808			
Potentially Applicable Standards (non-priority pollutants)											
Aluminum	0.2	0.75	0.087	NA	NA	BRL§	BRL§	0.948			
Iron	0.3		1	1070	493	0.172	0.153	0.473			
Manganese	0.05-0.1			23.6	6.93	0.414	0.0826	2.27			

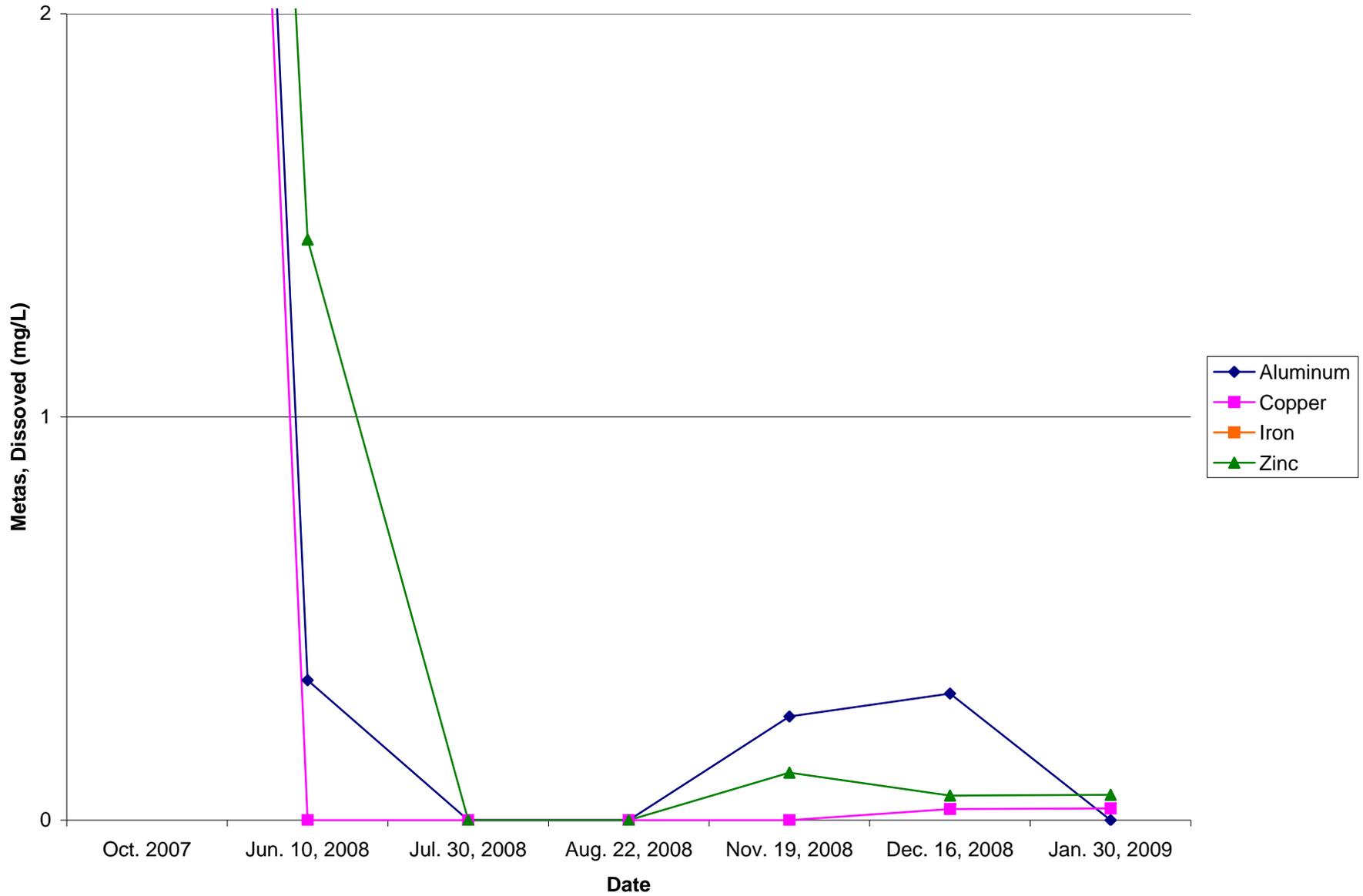
Notes:

- SCDHEC - South Carolina Department of Health and Environmental Control
 - a - South Carolina Regulation 61-68, Water Classifications and Standards, adopted June 2004 and adjusted for water hardness of 400 mg/L.
- MCL - Maximum contaminant level
- CMC - Criterion maximum concentration
- CCC - Criterion continuous concentration
- mg/L - Milligrams per liter
- NSA - Standard not available
- NA - Not analyzed
- BRL - Below reporting limit
 - * - Reporting limit 0.02
 - † - Reporting limit 0.01
 - ‡ - Reporting limit 0.05
 - # - Reporting limit 0.005
 - § - Reporting limit 0.2
- Yellow - Exceeds one criteria (Human Health Standard or SCDHEC WQC)
- Red - Exceeds all criteria (both Human Health Standard and SCDHEC WQC)

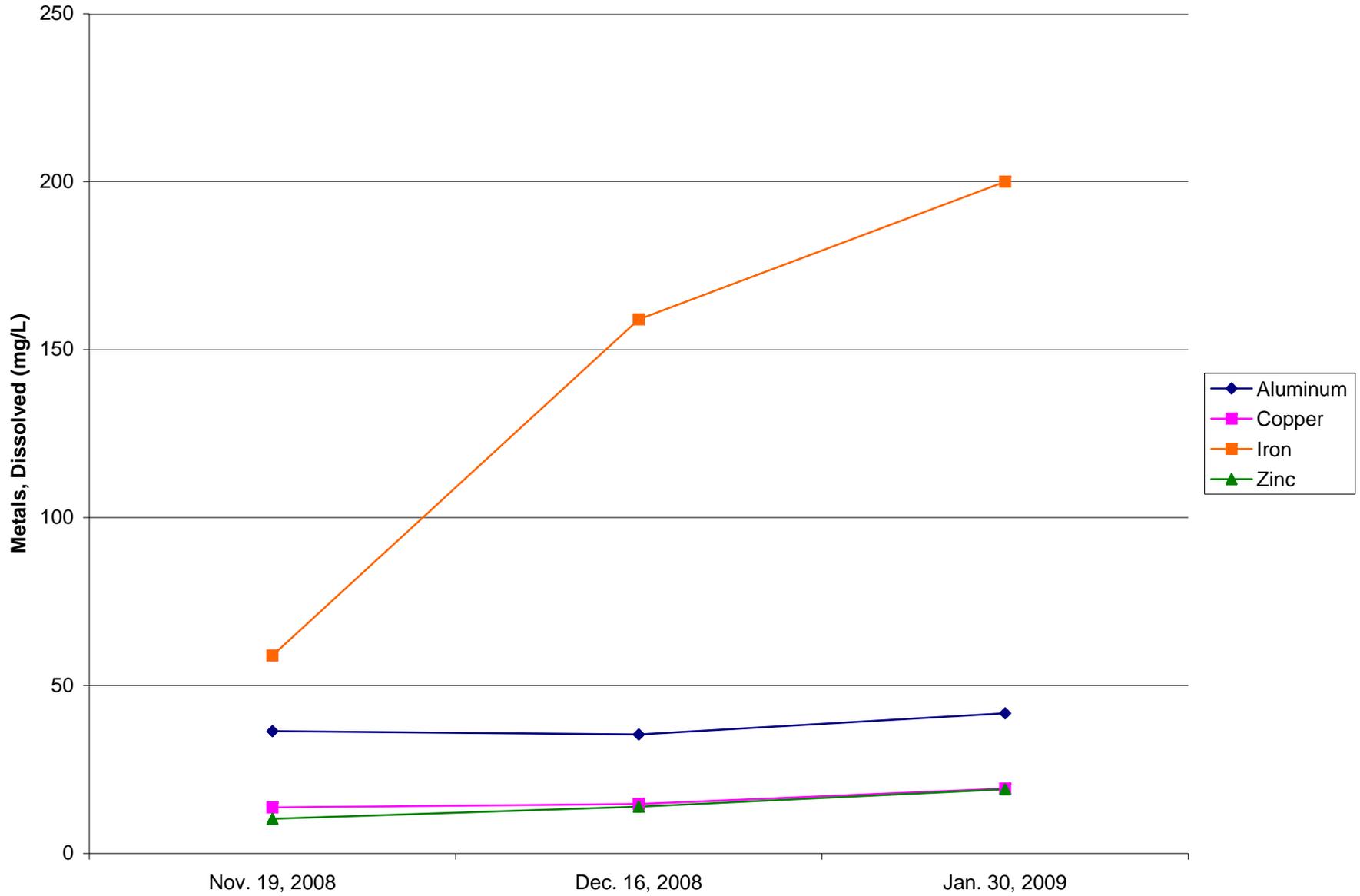
Graph 1
Pit Lake Surface Comparison



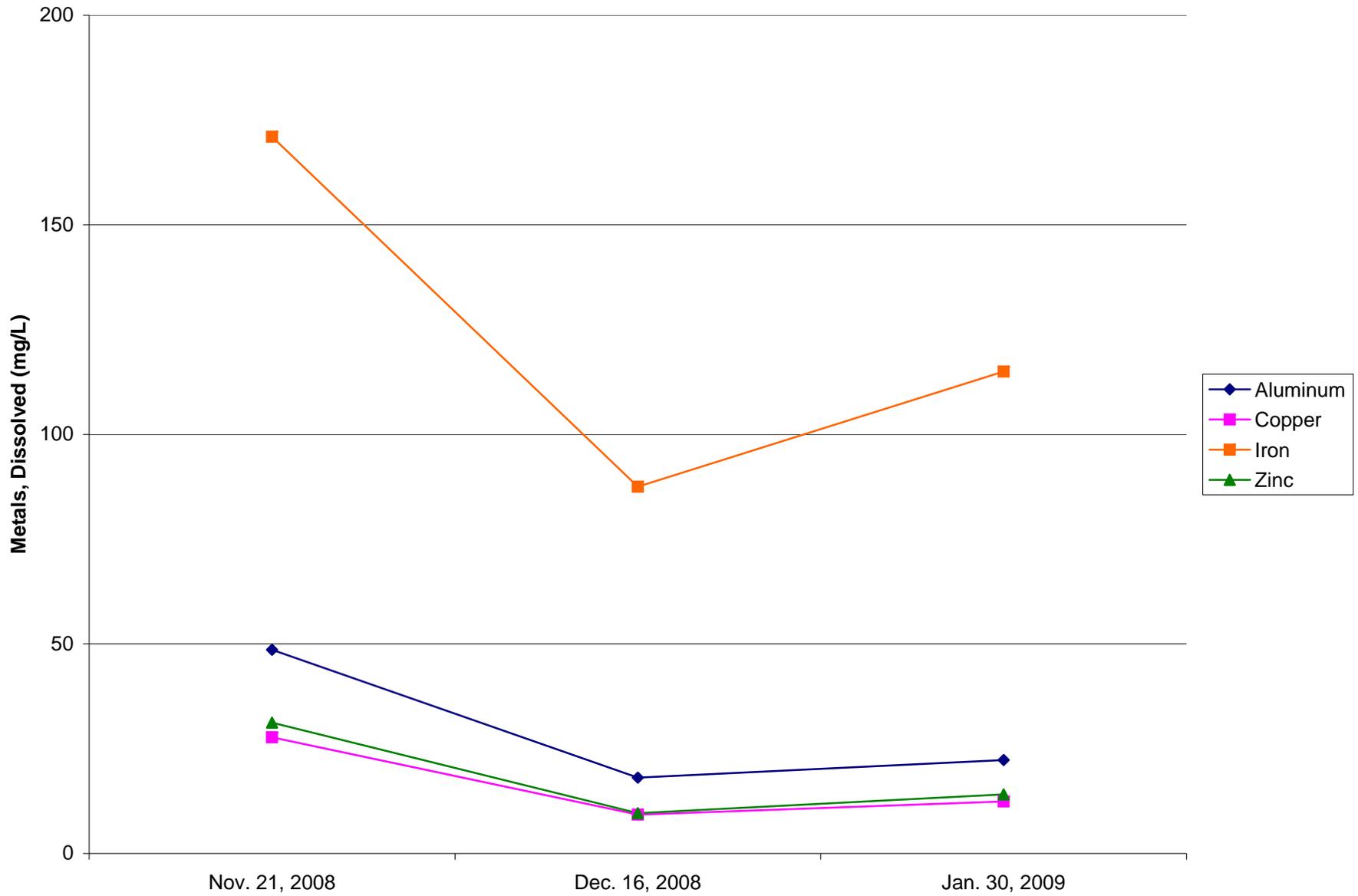
Graph 2
Pit Lake Surface Comparison Detailed



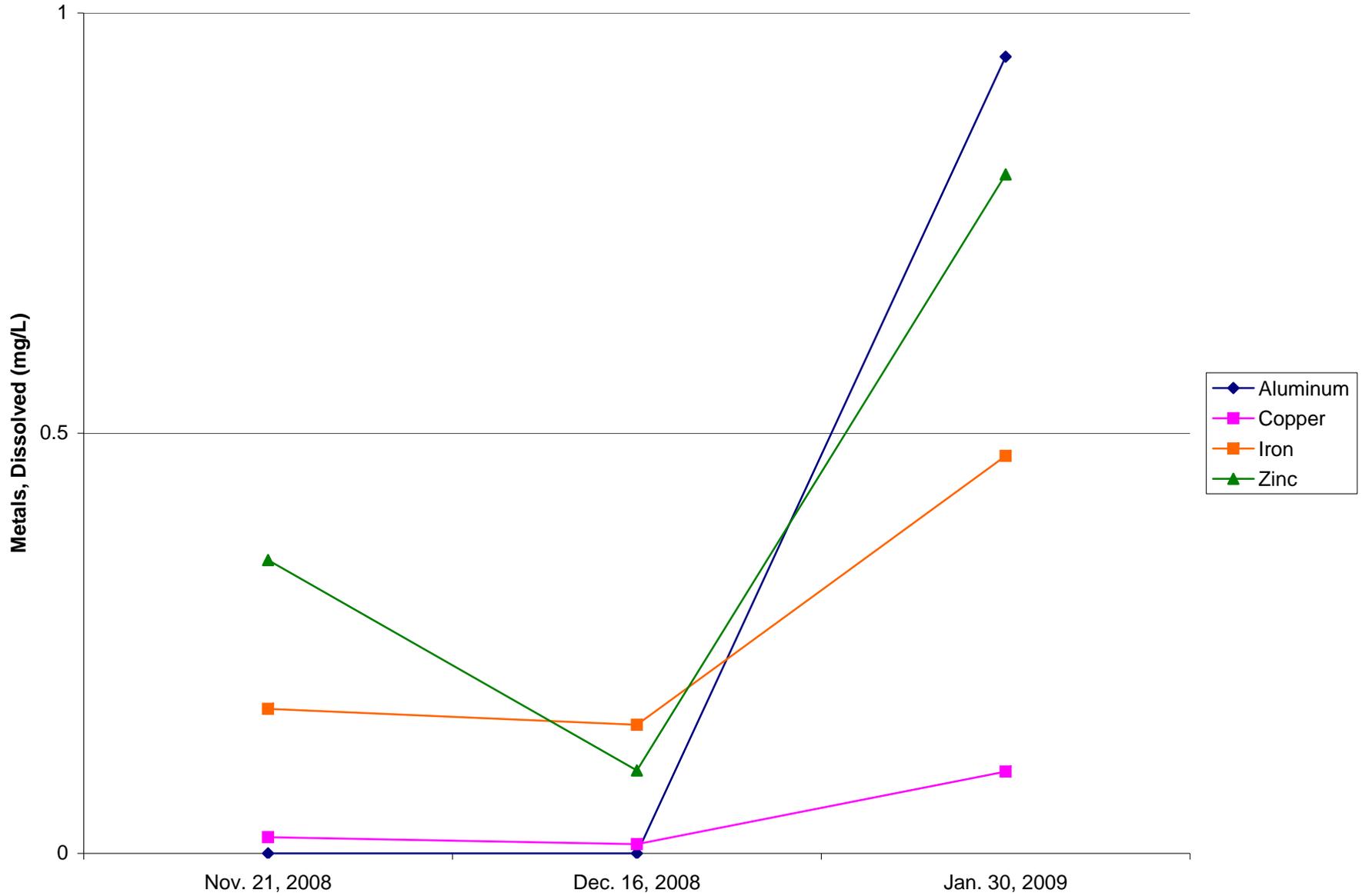
Graph 3
Seep 1 Comparison



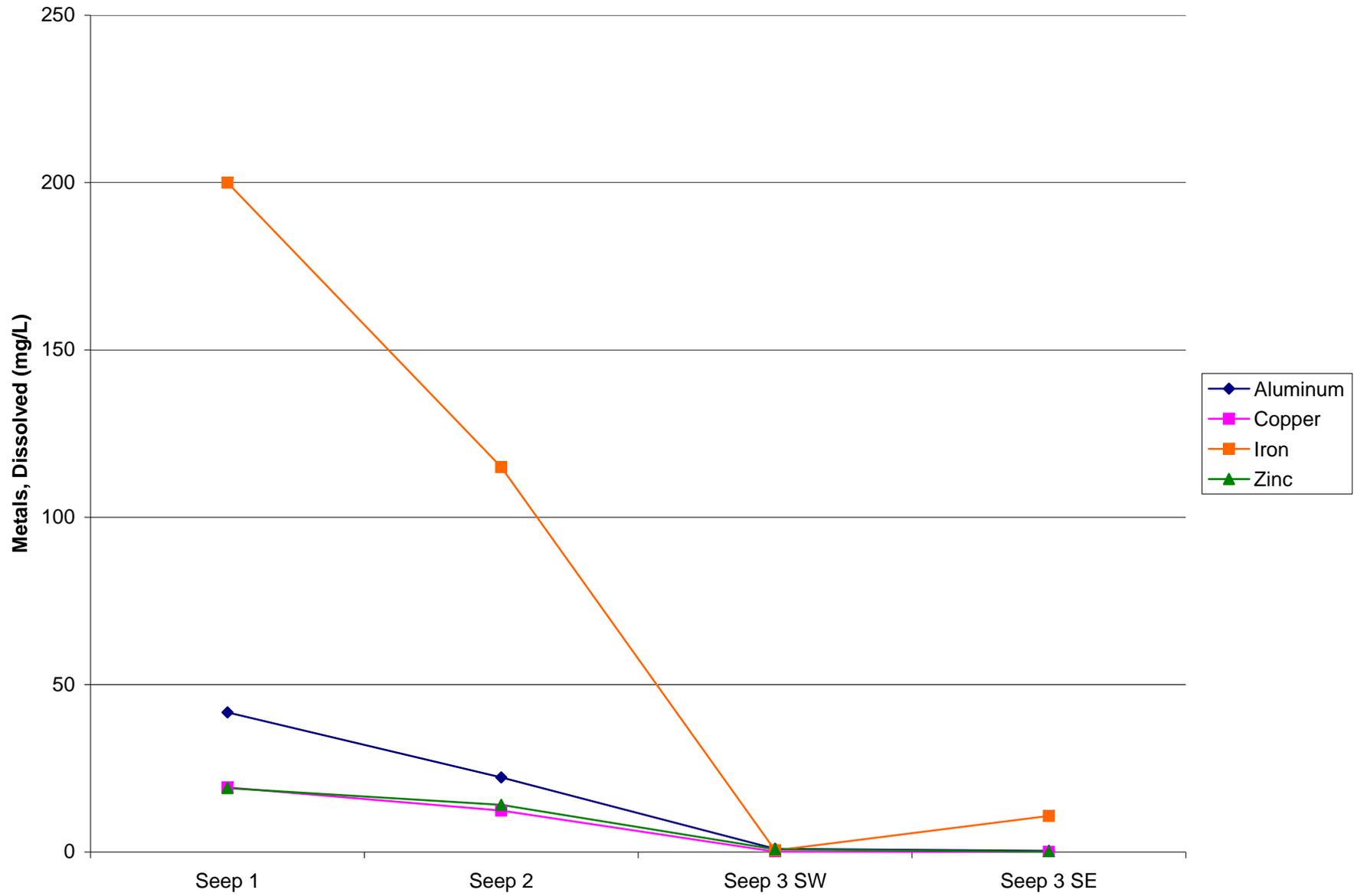
Graph 4
Seep 2 Comparison



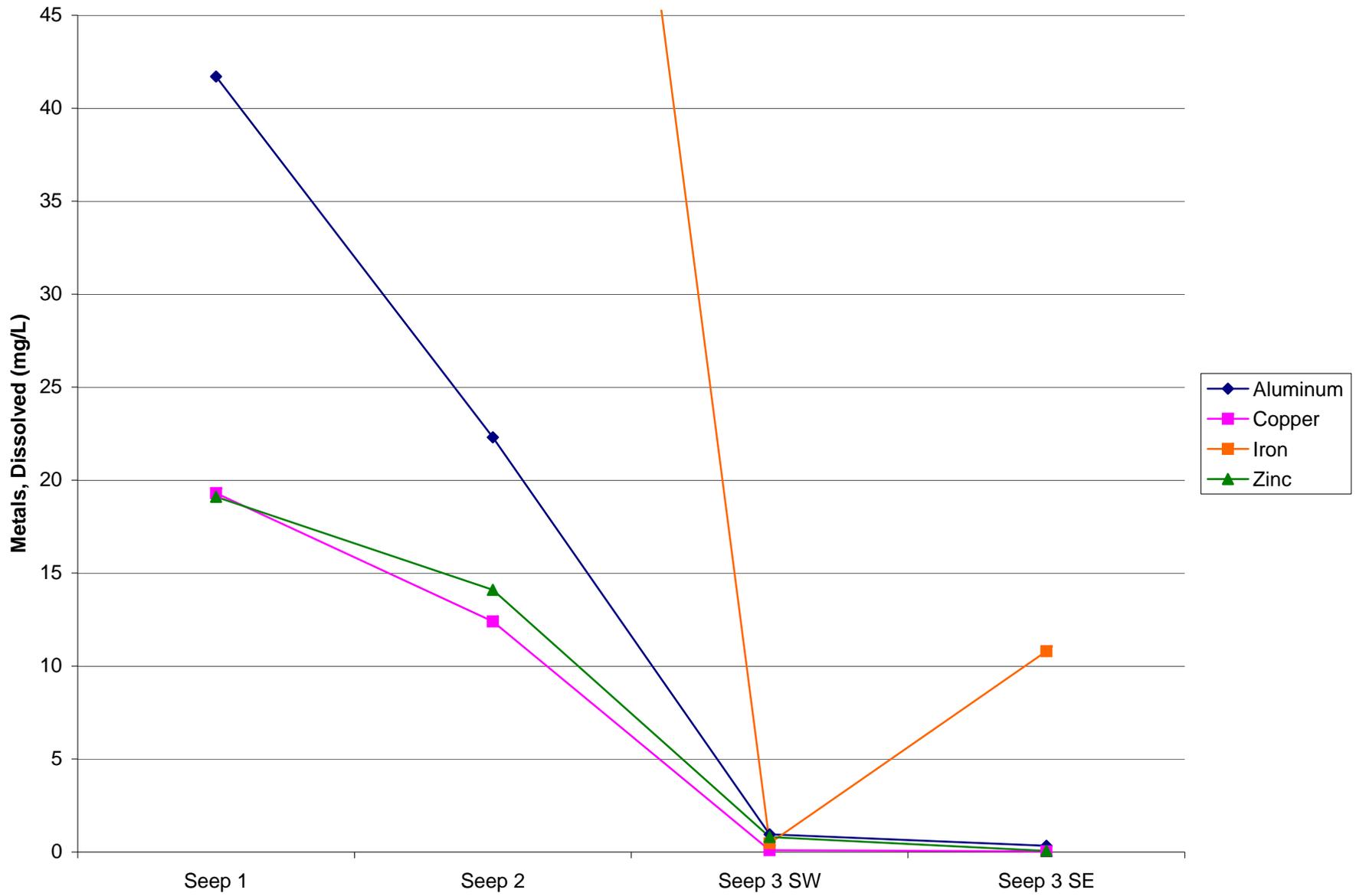
Graph 5
Seep 3 Comparison



Graph 6
Seep Comparison for 01/30/2009



Graph 7
Seep Comparison Detailed for 01/30/2009



**ATTACHMENT C
ANALYTICAL DATA**

Analytical Environmental Services, Inc.

Date: 10-Feb-09

CLIENT: TN and Associates
Project: Barite Hills Removal
Lab ID: 0902173-001

Client Sample ID: BHR-S0-006
Collection Date: 1/30/2009 1:50:00 PM
Matrix: SURFACE WATER

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
INORGANIC ANIONS BY IC							
			E300				Analyst: GAR
Sulfate	18.3	1.00		mg/L		1	2/4/2009 4:21 PM
TOTAL ORGANIC CARBON (TOC)							
			SW9060				Analyst: GAR
Organic Carbon, Total	20.9	1.00		mg/L		1	2/5/2009 3:58 PM
METALS, DISSOLVED							
			SW6010B		(SAMP_FILT)		Analyst: BB
Aluminum	0.333	0.200		mg/L	109622	1	2/6/2009 1:30 PM
Antimony	BRL	0.0200		mg/L	109622	1	2/6/2009 1:30 PM
Arsenic	BRL	0.0500		mg/L	109622	1	2/6/2009 1:30 PM
Barium	0.0889	0.0200		mg/L	109622	1	2/6/2009 1:30 PM
Beryllium	BRL	0.0100		mg/L	109622	1	2/6/2009 1:30 PM
Cadmium	BRL	0.0050		mg/L	109622	1	2/6/2009 1:30 PM
Calcium	11.2	0.100		mg/L	109622	1	2/6/2009 1:30 PM
Chromium	BRL	0.0100		mg/L	109622	1	2/6/2009 1:30 PM
Cobalt	BRL	0.0200		mg/L	109622	1	2/6/2009 1:30 PM
Copper	0.0344	0.0100		mg/L	109622	1	2/6/2009 1:30 PM
Iron	10.8	0.100		mg/L	109622	1	2/6/2009 1:30 PM
Lead	BRL	0.0100		mg/L	109622	1	2/6/2009 1:30 PM
Magnesium	5.64	0.100		mg/L	109622	1	2/6/2009 1:30 PM
Manganese	0.822	0.0150		mg/L	109622	1	2/6/2009 1:30 PM
Nickel	BRL	0.0200		mg/L	109622	1	2/6/2009 1:30 PM
Potassium	0.753	0.500		mg/L	109622	1	2/6/2009 1:30 PM
Selenium	BRL	0.0200		mg/L	109622	1	2/6/2009 1:30 PM
Silver	BRL	0.0100		mg/L	109622	1	2/6/2009 1:30 PM
Sodium	12.1	1.00		mg/L	109622	1	2/6/2009 1:30 PM
Thallium	BRL	0.0200		mg/L	109622	1	2/6/2009 1:30 PM
Vanadium	BRL	0.0100		mg/L	109622	1	2/6/2009 1:30 PM
Zinc	0.0559	0.0200		mg/L	109622	1	2/6/2009 1:30 PM
MERCURY, DISSOLVED							
			SW7470A		(SW7470)		Analyst: MAW
Mercury	BRL	0.00020		mg/L	109668	1	2/9/2009 5:18 PM
HYDROGEN ION (PH)(150.1/SM4500 H+ B)							
			E150.1				Analyst: CG
pH	6.28	0.01	H	pH Units		1	2/3/2009 6:20 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	E	Estimated (Value above quantitation range)
BRL	Below Reporting Limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See Case Narrative
N	Analyte not NELAC certified	NC	Not Confirmed
B	Analyte detected in the associated Method Blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc.

Date: 10-Feb-09

CLIENT: TN and Associates
Project: Barite Hills Removal
Lab ID: 0902173-002

Client Sample ID: BHR-S1-006
Collection Date: 1/30/2009 1:26:00 PM
Matrix: SURFACE WATER

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
INORGANIC ANIONS BY IC							
			E300				Analyst: GAR
Sulfate	1860	100		mg/L		100	2/4/2009 5:25 PM
TOTAL ORGANIC CARBON (TOC)							
			SW9060				Analyst: GAR
Organic Carbon, Total	4.64	1.00		mg/L		1	2/5/2009 4:17 PM
METALS, DISSOLVED							
			SW6010B		(SAMP_FILT)		Analyst: BB
Aluminum	41.7	0.200		mg/L	109622	1	2/6/2009 1:33 PM
Antimony	BRL	0.0200		mg/L	109622	1	2/6/2009 1:33 PM
Arsenic	BRL	0.0500		mg/L	109622	1	2/6/2009 1:33 PM
Barium	0.0356	0.0200		mg/L	109622	1	2/6/2009 1:33 PM
Beryllium	BRL	0.0100		mg/L	109622	1	2/6/2009 1:33 PM
Cadmium	0.611	0.0050		mg/L	109622	1	2/6/2009 1:33 PM
Calcium	238	1.00		mg/L	109622	10	2/9/2009 12:07 PM
Chromium	0.0104	0.0100		mg/L	109622	1	2/6/2009 1:33 PM
Cobalt	0.942	0.0200		mg/L	109622	1	2/6/2009 1:33 PM
Copper	19.3	0.0100		mg/L	109622	1	2/6/2009 1:33 PM
Iron	200	1.00		mg/L	109622	10	2/9/2009 12:07 PM
Lead	0.0473	0.0100		mg/L	109622	1	2/6/2009 1:33 PM
Magnesium	57.8	0.100		mg/L	109622	1	2/6/2009 1:33 PM
Manganese	19.6	0.0150		mg/L	109622	1	2/6/2009 1:33 PM
Nickel	0.138	0.0200		mg/L	109622	1	2/6/2009 1:33 PM
Potassium	6.93	0.500		mg/L	109622	1	2/6/2009 1:33 PM
Selenium	0.0238	0.0200		mg/L	109622	1	2/6/2009 1:33 PM
Silver	BRL	0.0100		mg/L	109622	1	2/6/2009 1:33 PM
Sodium	41.3	1.00		mg/L	109622	1	2/6/2009 1:33 PM
Thallium	BRL	0.200		mg/L	109622	10	2/9/2009 12:07 PM
Vanadium	BRL	0.0100		mg/L	109622	1	2/6/2009 1:33 PM
Zinc	19.1	0.0200		mg/L	109622	1	2/6/2009 1:33 PM
MERCURY, DISSOLVED							
			SW7470A		(SW7470)		Analyst: MAW
Mercury	BRL	0.00020		mg/L	109668	1	2/9/2009 5:21 PM
HYDROGEN ION (PH)(150.1/SM4500 H+ B)							
			E150.1				Analyst: CG
pH	3.02	0.01	H	pH Units		1	2/3/2009 6:23 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	E	Estimated (Value above quantitation range)
BRL	Below Reporting Limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See Case Narrative
N	Analyte not NELAC certified	NC	Not Confirmed
B	Analyte detected in the associated Method Blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc.

Date: 10-Feb-09

CLIENT: TN and Associates
Project: Barite Hills Removal
Lab ID: 0902173-003

Client Sample ID: BHR-S2-006
Collection Date: 1/30/2009 1:33:00 PM
Matrix: SURFACE WATER

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
INORGANIC ANIONS BY IC							
			E300				Analyst: GAR
Sulfate	1550	20.0		mg/L		20	2/4/2009 5:40 PM
TOTAL ORGANIC CARBON (TOC)							
			SW9060				Analyst: GAR
Organic Carbon, Total	2.99	1.00		mg/L		1	2/5/2009 4:35 PM
METALS, DISSOLVED							
			SW6010B		(SAMP_FILT)		Analyst: BB
Aluminum	22.3	0.200		mg/L	109622	1	2/6/2009 1:37 PM
Antimony	BRL	0.0200		mg/L	109622	1	2/6/2009 1:37 PM
Arsenic	BRL	0.0500		mg/L	109622	1	2/6/2009 1:37 PM
Barium	0.0460	0.0200		mg/L	109622	1	2/6/2009 1:37 PM
Beryllium	BRL	0.0100		mg/L	109622	1	2/6/2009 1:37 PM
Cadmium	0.385	0.0050		mg/L	109622	1	2/6/2009 1:37 PM
Calcium	167	1.00		mg/L	109622	10	2/9/2009 12:10 PM
Chromium	BRL	0.0100		mg/L	109622	1	2/6/2009 1:37 PM
Cobalt	0.951	0.0200		mg/L	109622	1	2/6/2009 1:37 PM
Copper	12.4	0.0100		mg/L	109622	1	2/6/2009 1:37 PM
Iron	115	1.00		mg/L	109622	10	2/9/2009 12:10 PM
Lead	0.0193	0.0100		mg/L	109622	1	2/6/2009 1:37 PM
Magnesium	42.1	0.100		mg/L	109622	1	2/6/2009 1:37 PM
Manganese	26.6	0.150		mg/L	109622	10	2/9/2009 12:10 PM
Nickel	0.102	0.0200		mg/L	109622	1	2/6/2009 1:37 PM
Potassium	3.11	0.500		mg/L	109622	1	2/6/2009 1:37 PM
Selenium	BRL	0.0200		mg/L	109622	1	2/6/2009 1:37 PM
Silver	BRL	0.0100		mg/L	109622	1	2/6/2009 1:37 PM
Sodium	30.4	1.00		mg/L	109622	1	2/6/2009 1:37 PM
Thallium	BRL	0.200		mg/L	109622	10	2/9/2009 12:10 PM
Vanadium	BRL	0.0100		mg/L	109622	1	2/6/2009 1:37 PM
Zinc	14.1	0.0200		mg/L	109622	1	2/6/2009 1:37 PM
MERCURY, DISSOLVED							
			SW7470A		(SW7470)		Analyst: MAW
Mercury	0.00022	0.00020		mg/L	109668	1	2/9/2009 6:55 PM
HYDROGEN ION (PH)(150.1/SM4500 H+ B)							
			E150.1				Analyst: CG
pH	3.12	0.01	H	pH Units		1	2/3/2009 6:25 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	E	Estimated (Value above quantitation range)
BRL	Below Reporting Limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See Case Narrative
N	Analyte not NELAC certified	NC	Not Confirmed
B	Analyte detected in the associated Method Blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc.

Date: 10-Feb-09

CLIENT: TN and Associates
Project: Barite Hills Removal
Lab ID: 0902173-004

Client Sample ID: BHR-S3-006
Collection Date: 1/30/2009 12:44:00 PM
Matrix: SURFACE WATER

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
INORGANIC ANIONS BY IC							
			E300				Analyst: GAR
Sulfate	261	10.0		mg/L		10	2/4/2009 5:55 PM
TOTAL ORGANIC CARBON (TOC)							
			SW9060				Analyst: GAR
Organic Carbon, Total	1.39	1.00		mg/L		1	2/5/2009 4:53 PM
METALS, DISSOLVED							
			SW6010B		(SAMP_FILT)		Analyst: BB
Aluminum	0.948	0.200		mg/L	109622	1	2/6/2009 1:41 PM
Antimony	BRL	0.0200		mg/L	109622	1	2/6/2009 1:41 PM
Arsenic	BRL	0.0500		mg/L	109622	1	2/6/2009 1:41 PM
Barium	0.0795	0.0200		mg/L	109622	1	2/6/2009 1:41 PM
Beryllium	BRL	0.0100		mg/L	109622	1	2/6/2009 1:41 PM
Cadmium	0.0224	0.0050		mg/L	109622	1	2/6/2009 1:41 PM
Calcium	44.1	0.100		mg/L	109622	1	2/6/2009 1:41 PM
Chromium	BRL	0.0100		mg/L	109622	1	2/6/2009 1:41 PM
Cobalt	0.0335	0.0200		mg/L	109622	1	2/6/2009 1:41 PM
Copper	0.0973	0.0100		mg/L	109622	1	2/6/2009 1:41 PM
Iron	0.473	0.100		mg/L	109622	1	2/6/2009 1:41 PM
Lead	BRL	0.0100		mg/L	109622	1	2/6/2009 1:41 PM
Magnesium	19.9	0.100		mg/L	109622	1	2/6/2009 1:41 PM
Manganese	2.27	0.0150		mg/L	109622	1	2/6/2009 1:41 PM
Nickel	BRL	0.0200		mg/L	109622	1	2/6/2009 1:41 PM
Potassium	1.20	0.500		mg/L	109622	1	2/6/2009 1:41 PM
Selenium	BRL	0.0200		mg/L	109622	1	2/6/2009 1:41 PM
Silver	BRL	0.0100		mg/L	109622	1	2/6/2009 1:41 PM
Sodium	17.2	1.00		mg/L	109622	1	2/6/2009 1:41 PM
Thallium	BRL	0.0200		mg/L	109622	1	2/6/2009 1:41 PM
Vanadium	BRL	0.0100		mg/L	109622	1	2/6/2009 1:41 PM
Zinc	0.808	0.0200		mg/L	109622	1	2/6/2009 1:41 PM
MERCURY, DISSOLVED							
			SW7470A		(SW7470)		Analyst: MAW
Mercury	BRL	0.00020		mg/L	109668	1	2/9/2009 5:26 PM
HYDROGEN ION (PH)(150.1/SM4500 H+ B)							
			E150.1				Analyst: CG
pH	4.13	0.01	H	pH Units		1	2/3/2009 6:30 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	E	Estimated (Value above quantitation range)
BRL	Below Reporting Limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See Case Narrative
N	Analyte not NELAC certified	NC	Not Confirmed
B	Analyte detected in the associated Method Blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc.

Date: 10-Feb-09

CLIENT: TN and Associates
Project: Barite Hills Removal
Lab ID: 0902173-005

Client Sample ID: BHR-MPS-008
Collection Date: 1/30/2009 9:40:00 AM
Matrix: SURFACE WATER

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
INORGANIC ANIONS BY IC		E300		Analyst: GAR			
Sulfate	2660	100		mg/L		100	2/4/2009 6:09 PM
TOTAL ORGANIC CARBON (TOC)		SW9060		Analyst: GAR			
Organic Carbon, Total	85.9	5.00		mg/L		5	2/5/2009 5:12 PM
METALS, DISSOLVED		SW6010B		(SAMP_FILT)		Analyst: BB	
Aluminum	BRL	0.200		mg/L	109622	1	2/6/2009 2:06 PM
Antimony	BRL	0.0200		mg/L	109622	1	2/6/2009 2:06 PM
Arsenic	BRL	0.0500		mg/L	109622	1	2/6/2009 2:06 PM
Barium	0.0759	0.0200		mg/L	109622	1	2/6/2009 2:06 PM
Beryllium	BRL	0.0100		mg/L	109622	1	2/6/2009 2:06 PM
Cadmium	BRL	0.0050		mg/L	109622	1	2/6/2009 2:06 PM
Calcium	568	1.00		mg/L	109622	10	2/9/2009 12:14 PM
Chromium	BRL	0.0100		mg/L	109622	1	2/6/2009 2:06 PM
Cobalt	0.0292	0.0200		mg/L	109622	1	2/6/2009 2:06 PM
Copper	0.0293	0.0100		mg/L	109622	1	2/6/2009 2:06 PM
Iron	165	1.00		mg/L	109622	10	2/9/2009 12:14 PM
Lead	BRL	0.0100		mg/L	109622	1	2/6/2009 2:06 PM
Magnesium	74.4	0.100		mg/L	109622	1	2/6/2009 2:06 PM
Manganese	10.2	0.0150		mg/L	109622	1	2/6/2009 2:06 PM
Nickel	BRL	0.0200		mg/L	109622	1	2/6/2009 2:06 PM
Potassium	45.9	0.500		mg/L	109622	1	2/6/2009 2:06 PM
Selenium	BRL	0.0200		mg/L	109622	1	2/6/2009 2:06 PM
Silver	BRL	0.0100		mg/L	109622	1	2/6/2009 2:06 PM
Sodium	94.5	10.0		mg/L	109622	10	2/9/2009 12:14 PM
Thallium	BRL	0.200		mg/L	109622	10	2/9/2009 12:14 PM
Vanadium	BRL	0.0100		mg/L	109622	1	2/6/2009 2:06 PM
Zinc	0.0628	0.0200		mg/L	109622	1	2/6/2009 2:06 PM
METALS, TOTAL		SW6010B		(SW3010A)		Analyst: BB	
Aluminum	0.207	0.200		mg/L	109567	1	2/6/2009 12:26 PM
Antimony	BRL	0.0200		mg/L	109567	1	2/6/2009 12:26 PM
Arsenic	BRL	0.0500		mg/L	109567	1	2/6/2009 12:26 PM
Barium	0.0836	0.0200		mg/L	109567	1	2/6/2009 12:26 PM
Beryllium	BRL	0.0100		mg/L	109567	1	2/6/2009 12:26 PM
Cadmium	BRL	0.0050		mg/L	109567	1	2/6/2009 12:26 PM
Calcium	666	1.00		mg/L	109567	10	2/6/2009 12:44 PM
Chromium	BRL	0.0100		mg/L	109567	1	2/6/2009 12:26 PM
Cobalt	0.0338	0.0200		mg/L	109567	1	2/6/2009 12:26 PM
Copper	0.0355	0.0100		mg/L	109567	1	2/6/2009 12:26 PM
Iron	201	1.00		mg/L	109567	10	2/6/2009 12:44 PM
Lead	BRL	0.0100		mg/L	109567	1	2/6/2009 12:26 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	E	Estimated (Value above quantitation range)
BRL	Below Reporting Limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See Case Narrative
N	Analyte not NELAC certified	NC	Not Confirmed
B	Analyte detected in the associated Method Blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc.

Date: 10-Feb-09

CLIENT: TN and Associates
Project: Barite Hills Removal
Lab ID: 0902173-005

Client Sample ID: BHR-MPS-008
Collection Date: 1/30/2009 9:40:00 AM
Matrix: SURFACE WATER

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
METALS, TOTAL					SW6010B (SW3010A)		Analyst: BB
Magnesium	83.7	0.100		mg/L	109567	1	2/6/2009 12:26 PM
Manganese	11.4	0.0150		mg/L	109567	1	2/6/2009 12:26 PM
Nickel	BRL	0.0200		mg/L	109567	1	2/6/2009 12:26 PM
Potassium	53.8	0.500		mg/L	109567	1	2/6/2009 12:26 PM
Selenium	BRL	0.0200		mg/L	109567	1	2/6/2009 12:26 PM
Silver	BRL	0.0100		mg/L	109567	1	2/6/2009 12:26 PM
Sodium	113	10.0		mg/L	109567	10	2/6/2009 12:44 PM
Thallium	BRL	0.200		mg/L	109567	10	2/6/2009 12:44 PM
Vanadium	BRL	0.0100		mg/L	109567	1	2/6/2009 12:26 PM
Zinc	0.0658	0.0200		mg/L	109567	1	2/6/2009 12:26 PM
MERCURY, DISSOLVED					SW7470A (SW7470)		Analyst: MAW
Mercury	BRL	0.00020		mg/L	109668	1	2/9/2009 5:34 PM
MERCURY, TOTAL					SW7470A (SW7470)		Analyst: MAW
Mercury	BRL	0.00020		mg/L	109526	1	2/5/2009 1:59 PM
HYDROGEN ION (PH)(150.1/SM4500 H+ B)					E150.1		Analyst: CG
pH	4.95	0.01	H	pH Units		1	2/3/2009 6:40 PM
FERROUS IRON					SM3500-FE-D		Analyst: CG
Iron, as Ferric (Fe+3)	BRL	0.100	H	mg/L		1	2/4/2009 10:00 AM
Iron, as Ferrous (Fe+2)	209	25.0	H	mg/L		250	2/4/2009 10:00 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	E	Estimated (Value above quantitation range)
BRL	Below Reporting Limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See Case Narrative
N	Analyte not NELAC certified	NC	Not Confirmed
B	Analyte detected in the associated Method Blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc.

Date: 10-Feb-09

CLIENT: TN and Associates
Project: Barite Hills Removal
Lab ID: 0902173-006

Client Sample ID: BHR-MPSB-008
Collection Date: 1/30/2009 10:40:00 AM
Matrix: SURFACE WATER

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
INORGANIC ANIONS BY IC		E300		Analyst: GAR			
Sulfate	2770	100		mg/L		100	2/4/2009 6:24 PM
TOTAL ORGANIC CARBON (TOC)		SW9060		Analyst: GAR			
Organic Carbon, Total	100	10.0		mg/L		10	2/5/2009 6:40 PM
METALS, DISSOLVED		SW6010B		(SAMP_FILTER)		Analyst: BB	
Aluminum	BRL	0.200		mg/L	109622	1	2/6/2009 2:10 PM
Antimony	BRL	0.0200		mg/L	109622	1	2/6/2009 2:10 PM
Arsenic	BRL	0.0500		mg/L	109622	1	2/6/2009 2:10 PM
Barium	0.0732	0.0200		mg/L	109622	1	2/6/2009 2:10 PM
Beryllium	BRL	0.0100		mg/L	109622	1	2/6/2009 2:10 PM
Cadmium	BRL	0.0050		mg/L	109622	1	2/6/2009 2:10 PM
Calcium	579	1.00		mg/L	109622	10	2/9/2009 12:36 PM
Chromium	BRL	0.0100		mg/L	109622	1	2/6/2009 2:10 PM
Cobalt	0.0330	0.0200		mg/L	109622	1	2/6/2009 2:10 PM
Copper	BRL	0.0100		mg/L	109622	1	2/6/2009 2:10 PM
Iron	153	1.00		mg/L	109622	10	2/9/2009 12:36 PM
Lead	BRL	0.0100		mg/L	109622	1	2/6/2009 2:10 PM
Magnesium	78.5	0.100		mg/L	109622	1	2/6/2009 2:10 PM
Manganese	10.4	0.0150		mg/L	109622	1	2/6/2009 2:10 PM
Nickel	BRL	0.0200		mg/L	109622	1	2/6/2009 2:10 PM
Potassium	47.4	0.500		mg/L	109622	1	2/6/2009 2:10 PM
Selenium	BRL	0.0200		mg/L	109622	1	2/6/2009 2:10 PM
Silver	BRL	0.0100		mg/L	109622	1	2/6/2009 2:10 PM
Sodium	135	10.0		mg/L	109622	10	2/9/2009 12:36 PM
Thallium	BRL	0.200		mg/L	109622	10	2/9/2009 12:36 PM
Vanadium	BRL	0.0100		mg/L	109622	1	2/6/2009 2:10 PM
Zinc	0.0377	0.0200		mg/L	109622	1	2/6/2009 2:10 PM
METALS, TOTAL		SW6010B		(SW3010A)		Analyst: BB	
Aluminum	17.9	0.200		mg/L	109567	1	2/6/2009 12:30 PM
Antimony	BRL	0.0200		mg/L	109567	1	2/6/2009 12:30 PM
Arsenic	0.0656	0.0500		mg/L	109567	1	2/6/2009 12:30 PM
Barium	0.907	0.0200		mg/L	109567	1	2/6/2009 12:30 PM
Beryllium	BRL	0.0100		mg/L	109567	1	2/6/2009 12:30 PM
Cadmium	0.190	0.0050		mg/L	109567	1	2/6/2009 12:30 PM
Calcium	698	1.00		mg/L	109567	10	2/6/2009 12:51 PM
Chromium	0.0489	0.0100		mg/L	109567	1	2/6/2009 12:30 PM
Cobalt	0.567	0.0200		mg/L	109567	1	2/6/2009 12:30 PM
Copper	2.13	0.0100		mg/L	109567	1	2/6/2009 12:30 PM
Iron	570	5.00		mg/L	109567	50	2/6/2009 12:54 PM
Lead	0.115	0.0100		mg/L	109567	1	2/6/2009 12:30 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	E	Estimated (Value above quantitation range)
BRL	Below Reporting Limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See Case Narrative
N	Analyte not NELAC certified	NC	Not Confirmed
B	Analyte detected in the associated Method Blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc.

Date: 10-Feb-09

CLIENT: TN and Associates
Project: Barite Hills Removal
Lab ID: 0902173-006

Client Sample ID: BHR-MPSB-008
Collection Date: 1/30/2009 10:40:00 AM
Matrix: SURFACE WATER

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
METALS, TOTAL					SW6010B (SW3010A)		Analyst: BB
Magnesium	89.3	0.100		mg/L	109567	1	2/6/2009 12:30 PM
Manganese	13.1	0.0150		mg/L	109567	1	2/6/2009 12:30 PM
Nickel	0.130	0.0200		mg/L	109567	1	2/6/2009 12:30 PM
Potassium	54.4	0.500		mg/L	109567	1	2/6/2009 12:30 PM
Selenium	BRL	0.0200		mg/L	109567	1	2/6/2009 12:30 PM
Silver	BRL	0.0100		mg/L	109567	1	2/6/2009 12:30 PM
Sodium	137	10.0		mg/L	109567	10	2/6/2009 12:51 PM
Thallium	BRL	0.200		mg/L	109567	10	2/6/2009 12:51 PM
Vanadium	0.127	0.0100		mg/L	109567	1	2/6/2009 12:30 PM
Zinc	5.75	0.0200		mg/L	109567	1	2/6/2009 12:30 PM
MERCURY, DISSOLVED					SW7470A (SW7470)		Analyst: MAW
Mercury	BRL	0.00020		mg/L	109668	1	2/9/2009 5:36 PM
MERCURY, TOTAL					SW7470A (SW7470)		Analyst: MAW
Mercury	0.00042	0.00020		mg/L	109526	1	2/5/2009 2:09 PM
HYDROGEN ION (PH)(150.1/SM4500 H+ B)					E150.1		Analyst: CG
pH	6.21	0.01	H	pH Units		1	2/3/2009 6:55 PM
FERROUS IRON					SM3500-FE-D		Analyst: CG
Iron, as Ferric (Fe+3)	291	0.100	H	mg/L		1	2/4/2009 10:00 AM
Iron, as Ferrous (Fe+2)	280	25.0	H	mg/L		250	2/4/2009 10:00 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	E	Estimated (Value above quantitation range)
BRL	Below Reporting Limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See Case Narrative
N	Analyte not NELAC certified	NC	Not Confirmed
B	Analyte detected in the associated Method Blank	<	Less than Result value
>	Greater than Result value		

ATTACHMENT D
HASP

HEALTH AND SAFETY PLAN FORM		<i>This document is for the exclusive use of TN&Associates its subcontractors, and EPA.</i>		TN & ASSOCIATES	
TN&Associates Health and Safety Program				Site Name: Barite Hill Nevada Goldfields	
PROJECT NAME: <u>Barite Hill Nevada Goldfields</u>		DATE: <u>6/10/2008</u>			
PROJECT#: <u>2005148</u>					
LOCATION: <u>McCormick, South Carolina</u>		CLIENT: <u>EPA</u>			
		EPA CONTACT/PHONE #: <u>Leo Francendese, 404-562-8772</u>			
		LOCAL/SITE CONTACT PHONE #: _____			
INCIDENT DESCRIPTION: The OSC tasked START with conducting water sampling of the main pit lake and the creek to monitor metal concentrations and water quality parameters.		SOURCE OF PRELIMINARY INFORMATION: ER Action Memo/ initial POLREP from epaosc.net website			
ANTICIPATED TASKS: (e.g. collect surface soil samples): Take water quality measurements and samples of the liquid in the main pit and creek.		TYPE: <i>Check as many as applicable</i>			
		Active	()	Landfill	()
		Inactive	(X)	Uncontrolled	()
		Secure	(X)	Industrial	()
		Unsecure	()	Recovery	(X)
		Enclosed space	()	Well Field	()
				Other (specify)	()
DESCRIPTION AND FEATURES: <i>Include principal operations and unusual features (containers, buildings, dikes, power lines, hillslopes, rivers, etc.)</i>					
The Barite Hill Nevada Goldfields site is located approximately 3 miles south of McCormick, SC between US 378 and US 221 on the northern side of Road 30 in McCormick County, SC. 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. 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. Storm water run on and runoff are not controlled at the site. The Main Pit from the mining operations remains. The pit contains approximately 60 million gallons of water with an historic low pH of 2 and high dissolved metal content. <input type="checkbox"/>					
<input type="checkbox"/>					
<input type="checkbox"/>					
SURROUNDING POPULATION: () Residential () Industrial () Commercial (X) Rural () Urban () Other:					

HEALTH AND SAFETY PLAN FORM*This document is for the exclusive***TN & ASSOCIATES****TN & Associates Health and Safety Program***use of TN&Associates its subcontractors, and EPA.***Site Name: Barite Hill Nevada Goldfields****HISTORY:***Summarize conditions that relate to hazard. Include citizen complaints, spills, previous investigations or agency actions, known injuries, etc.*

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 facility used a cyanide solution in a heap leach process to extract gold from ore. There are 7 processing ponds onsite containing an unknown amount of free-liquids. Three large, multi-acre, waste rock piles contaminated with cyanide are left onsite. 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 from the mining operations remains. The pit contains approximately 60 million gallons of water with a pH of 2 ~ 2.2 and a high dissolved metal content. Seeps from the main pit containing acidic water with high dissolved metal content are being released to the northern unnamed tributaries of Hawes Creek which borders the pit. □

WASTE TYPES: (X) Liquid (X) Solid () Sludge () Gas () Unknown () Other:

WASTE CHARACTERISTICS: *Check as many as applicable.*

(X) Corrosive () Flammable () Radioactive

(X) Toxic () Volatile (X) Reactive

() Inert Gas () Unknown () Other, Specify: _____

WORK ZONES:

Describe the Exclusion, Contamination Reduction, and Support Zones in terms on-site personnel will recognize

HAZARDS OF CONCERN:

(X) Heat Stress *attach guidelines* () Noise
 (X) Cold Stress *attach guidelines* (X) Inorganic Chemicals
 () Explosive/Flammable () Organic Chemicals
 () Oxygen Deficient () Motorized Traffic
 () Radiological () Heavy Machinery
 () Biological (X) Slips, Trips, & Falls
 () Other, Specify: _____

FACILITY'S PAST AND PRESENT DISPOSAL METHODS AND PRACTICES:

None found

HEALTH AND SAFETY PLAN FORM		<i>This document is for the exclusive</i>		TN & ASSOCIATES	
TN&Associates Health and Safety Program		<i>use of TN&Associates its subcontractors, and EPA.</i>		Site Name: Barite Hill Nevada Goldfields	
HAZARDOUS MATERIAL SUMMARY: <i>Circle waste type and estimate amounts by category.</i>					
CHEMICALS: <i>Amount/Units:</i>	SOLIDS: <i>Amount/Units:</i> Metals unknown	SLUDGES: <i>Amount/Units:</i> Inorganic unknown	SOLVENTS: <i>Amount/Units:</i>	OILS: <i>Amount/Units:</i>	OTHER: <i>Amount/Units:</i>
OVERALL HAZARD EVALUATION: <input type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> Unknown					
JUSTIFICATION: Stabilization of Main Pit lake for pyrite contact with liquid.					
FIRE/EXPLOSION POTENTIAL: <input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input checked="" type="checkbox"/> Unknown					
INFORMATION COMPLETE: <input type="checkbox"/> Complete <input type="checkbox"/> Incomplete <input checked="" type="checkbox"/> Best Available at Current Time					

HEALTH AND SAFETY PLAN FORM
TN & Associates Health and Safety Program

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TN & ASSOCIATES
Site Name: Barite Hill Nevada Goldfields

KNOWN CONTAMINANTS	NIOSH REL (ST if Available) ppm or mg/m ³ (specify)	OSHA PEL (ST if Available) ppm or mg/m ³ (specify)	IDLH ppm or mg/m ³ (specify)	SYMPTOMS & EFFECTS OF ACUTE EXPOSURE	PHOTO IONIZATION POTENTIAL

NA = Not Available

NE = None Established

U = Unknown

Attach, to this plan, an MSDS for each chemical you will use at the site.

S = Soil

SW = Surface Water

T = Tailings

W = Waste

SD = Sediment

A = Air

GW = Ground Water

SL = Sludge

D = Drums

OFF = Off-Site

HEALTH AND SAFETY PLAN FORM		<i>This document is for the exclusive use of</i>		TN & ASSOCIATES	
TN & Associates Health and Safety Program		<i>TN&Associates its subcontractors, and EPA.</i>		Site Name: Barite Hill Nevada Goldfields	
Task Description / PPE / Personnel & Responsibilities				(attach additional sheets as necessary)	
Task 1 Description	Site liquid sampling/In-situ monitoring			Type	Hazard Schedule
				Intrusive	High
Primary Level	Respiratory: APR combo	Contingency Level	Respiratory: APR combo		
Modified D	Eyewear: Safety Glasses Hard Hat		Eyewear: Safety Glasses Hard Hat		
	Boots: Steel-Toe Latex Bootie		Boots: Steel-Toe Latex Bootie		
	Gloves: Inner: Nitrile Outer:		Gloves: Inner: Nitrile Outer:		
PPE:	Clothing: Tyvek Coverall	PPE:	Clothing: Tyvek Coverall		
Task 2 Description				Type	Hazard Schedule
Primary Level	Respiratory: _____	Contingency Level	Respiratory: _____		
	Eyewear: _____		Eyewear: _____		
	Boots: _____		Boots: _____		
	Gloves: _____		Gloves: _____		
PPE:	Clothing: _____	PPE:	Clothing: _____		
Task 3 Description				Type	Hazard Schedule
Primary Level	Respiratory: _____	Contingency Level	Respiratory: _____		
	Eyewear: _____		Eyewear: _____		
	Boots: _____		Boots: _____		
	Gloves: _____		Gloves: _____		
PPE:	Clothing: _____	PPE:	Clothing: _____		
Task 4 Description				Type	Hazard Schedule
Primary Level	Respiratory: _____	Contingency Level	Respiratory: _____		
	Eyewear: _____		Eyewear: _____		
	Boots: _____		Boots: _____		
	Gloves: _____		Gloves: _____		
PPE:	Clothing: _____	PPE:	Clothing: _____		
PERSONNEL AND RESPONSIBILITIES					
Name	Company/Agency	Training	Responsibilities		
Jorge Sanchez	TN&A	OSHA	Safety and Health		
Russell Henderson	TN&A	OSHA	Safety and Health		
Dannena Bowman	TN&A	OSHA	Safety and Health		

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TN & Associates Health and Safety Program				Site Name: Barite Hill Nevada Goldfields
Monitoring Equipment:		Specify by task. Indicate type as necessary. Attach additional sheets if needed.		
Tasks: 1	Instrument: pH Meter	Level:	Action Guidelines:	Comments:
Tasks:	Instrument:	Level:	Action Guidelines:	Comments:
Tasks:	Instrument:	Level:	Action Guidelines:	Comments:
Tasks:	Instrument:	Level:	Action Guidelines:	Comments:
Tasks:	Instrument:	Level:	Action Guidelines:	Comments:

HEALTH AND SAFETY PLAN FORM		<i>This document is for the exclusive use of TN&Associates its subcontractors, and EPA.</i>		TN & ASSOCIATES	
TN&Associates Health and Safety Program				Site Name: Barite Hill Nevada Goldfields	
EMERGENCY CONTACTS		EMERGENCY CONTACTS		NAME	
Site Telephone		Health and Safety Manager		Bill Fink	
EPA Release Report #		Project Manager		Russell Henderson	
TN&Assoc 24-Hr Emergency # 678-255-5538		Site Safety Coordinator		Jorge Sanchez	
Facility Management		Client Contact (EPA RPM)		678-255-5538	
Other (specify)		Other (EPA HRS coordinator)			
CHEMTREC Emergency #: 1-800-424-9300		State Agency			
		State Spill Number			
		Fire Department		911	
		Police Department		911	
		State Police		911	
		Health Department			
		Poison Control Center		800-848-6946	
		Occupational Physician		Dr. Jerry Berke, Health Resources	
CONTINGENCY PLANS: <i>Summarize below</i>		MEDICAL EMERGENCY		PHONE	
Contact corporate Health and Safety officer, William Fink, at 414-234-7845		Hospital Name:			
		Hospital Address			
		Name of Contact at Hospital:			
		Name of 24-Hour Ambulance:			
		Route to Hospital: (see attached sheet)			
HEALTH AND SAFETY PLAN APPROVALS		Distance to Hospital			
Prepared by _____		Date _____			
DHSC Signature _____		Date _____			
HSM Signature _____		Date _____			

