



May 15, 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:

Oneida Total Integrated Enterprises (OTIE), 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 four 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 April 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. The Health and Safety Plan (HASP) can be found in 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 the creek. 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 04/08/09, START conducted surface water sampling. The investigation consisted of measuring water quality and collecting water samples from the lake. A HASP was developed for the site prior to fieldwork activities.

START collected two samples 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. It is important to note that the water quality parameters measured at each location were collected two days after extremely heavy rainfall. BHR-MPS-011 was collected one meter below the lake water surface and BHR-MPB-011 was collected one meter from the bottom of the lake using a Bacon Bomb. BHR-S1-011 and BHR-S2-011 were collected from pooled water along the creek at Seep 1 and Seep 2, respectively. BHR-S3-011 was collected from the southwest fork in the creek at Seep 3, and BHR-S0-011 was collected from the southeast fork in the creek at Seep 3. Lake samples were analyzed by Analytical Environmental Services, Inc. (AES) for dissolved target analyte list (TAL) metals, total 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 and 3 are analytical comparisons of the lake surface and lake bottom, respectively, from June 2008 through April 2009 of potentially applicable standards including priority and non-priority pollutants. Graph 1 illustrates the lake surface dissolved metal concentrations overtime. Graph 2 is a close up of Graph 1 detailing

Surface Water Sampling Letter Report

Barite Hills site

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lower concentrations. Table 4 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 April 2009. Tables and graphs can be found in Attachment B.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Henderson", with a long horizontal flourish extending to the right.

Russell Henderson

Project Manager

Oneida Total Integrated Enterprises (OTIE)

Superfund Technical Assessment and Response Team (START)

Enclosures

Attachment A – Figures

Attachment B – Tables & Graphs

Attachment C – Analytical Data

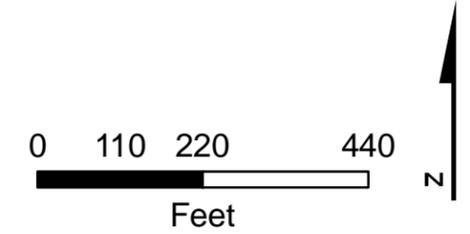
Attachment D – HASP

ATTACHMENT 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 (mg/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	

Feb. 26, 2009

Horbia U-22XD

Main Pit Lake

Depth (m)	pH	ORP (mV)	DO (mg/L)	Temp (°C)	Conductivity (mS/cm)
1	4.76	106	6.97	11.5	0.828
2	4.85	101	5.39	9.5	0.825
3	5.31	29	1.48	9.6	0.982
4	5.38	16	0.15	9.3	0.888
5	5.39	15	0	9.3	0.864
6	5.4	13	0	9.3	0.888
7	5.4	14	0	9.3	0.989
8	5.41	12	0	9.3	0.987
9	5.41	11	0	9.3	1.45
10	5.83	-59	0	9.5	1.24
11	5.93	-79	0	9.7	1.16
12	5.96	-91	0	9.7	1.08
13	5.98	-98	0	9.8	1.04
14	5.99	-105	0	9.8	1
15	6	-107	0	9.8	0.96
15.5	6.17	-192	0	10.1	0.555

Table 1
Water Quality Parameters

SE Corner of Lake

Depth (m)	pH	ORP (mV)	DO (mg/L)	Temp (°C)	Conductivity (mS/cm)
1	4.9	97	6.63	10.5	0.452
2	4.9	106	5.79	9.5	0.436
3	5.38	32	2.52	9.6	0.595
4	5.45	24	0.29	9.3	0.712
5	5.45	22	0	9.3	0.698
6	5.45	19	0	9.3	0.725
7	5.46	16	0	9.3	0.73
8	5.45	15	0	9.3	0.728
9	5.45	16	0	9.3	0.717
10	5.8	-35	0	9.5	0.709
11	5.97	-69	0	9.7	0.69

SW Corner of Lake

Depth (m)	pH	ORP (mV)	DO (mg/L)	Temp (°C)	Conductivity (mS/cm)
1	4.88	105	6.92	10.4	0.425
2	4.9	108	5.86	9.5	0.424
3	5.43	35	2.14	9.4	0.518
4	5.45	31	0.71	9.3	0.6
5	5.46	29	0.26	9.3	0.616
6	5.46	27	0	9.3	0.628
7	5.47	26	0	9.3	0.655
8	5.46	26	0	9.2	0.652
9	5.85	-24	0	9.5	0.69
10	5.9	-43	0	9.6	0.693

Creeks

Location	pH	ORP (mV)	DO (mg/L)	Temp (°C)	Conductivity (mS/cm)
0	3.96	305	10.82	12.2	83.3
MC	6.32	45	9.74	12.9	18.5
1	2.93	386	6.98	12.4	0.287
2	3.09	383	7.91	14.5	0.23
3	3.77	368	7.15	14	64.9

Apr. 08, 2009

Horbia U-22XD

Main Pit Lake

Depth (m)	pH	ORP (mV)	DO (mg/L)	Temp (°C)	Conductivity (mS/cm)	Turbidity (NTU)
0.5	3.83	231	6.27	12.9	1.15	20.5
1	5.07	-43	5.02	12.8	1.14	19.5
2	5.17	-43	1.48	12.6	1.06	13.4
3	5.22	-43	0.00	10.7	1.1	8.9
4	5.24	-45	0.00	10.5	1.13	8.1
5	5.26	-48	0.00	10.4	1.15	9.0
6	5.26	-49	0.00	10.4	1.19	9.3
7	5.26	-49	0.00	10.3	1.25	11.3
8	5.27	-51	0.00	10.3	1.3	11.5
9	5.26	-51	0.00	10.3	1.33	14.5
10	5.27	-52	0.00	10.3	1.38	14.4
11	5.31	-57	0.00	10.3	1.48	47.4
12	5.31	-57	0.00	10.3	0.999	128
13	5.33	-60	0.00	10.3	0.889	offscale
14	5.37	-60	0.00	10.3	0.832	offscale
15	6.13	-182	0.00	10.4	0.777	offscale

Table 1
Water Quality Parameters

Creeks

Location	pH	ORP (mV)	DO (mg/L)	Temp (°C)	Conductivity (mS/cm)	Turbidity (NTU)
1	4.73	179	11.43	11	33.7	42.9
2	3.36	317	10.26	12.2	0.135	17.7
3 SE	4.33	207	11.63	11.4	0.181	50
3 SW	4.14	296	9.35	11.8	50.3	22.2

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

	Human Health	SCDHEC WQC under R61-68		Oct. 2007	May 2, 2008	Jun. 10, 2008	Jul. 30, 2008	Aug. 22, 2008	Nov. 6, 2008	Nov. 19, 2008
	MCL	CMC	CCC	BHB-005	BHT-001	BHR-5-001	BRR-JR-LAKE		BHR-MP05-110608	BHR-MPS-001
Potentially Applicable Standards (priority pollutants)				Pit Water Untreated (mg/L)	Pit water treated (Total, mg/L)	Pit water treated (Dissolved, mg/L)				
Antimony	0.006	NSA	NSA	0.02	NA	0.006	0.2	0.2	BRL*	0.257
Arsenic	0.01	0.34	0.15	0.968	NA	BRL†	BRL†	BRL†	BRL†	BRL‡
Cadmium	0.005	0.008	0.0026	1.57	NA	BRL#	BRL#	BRL#	BRL#	BRL#
Chromium	0.1	0.57	0.074	0.141	NA	BRL†	BRL†	BRL†	BRL†	BRL†
Copper	1	0.057	0.039	287	NA	BRL†	BRL†	BRL†	BRL†	BRL†
Lead	0.015	0.32	0.005	0.161	NA	BRL†	BRL†	BRL†	0.0381	0.0353
Nickel	0.61	1.071	0.167	0.404	NA	0.163	BRL*	BRL*	BRL*	BRL*
Selenium	0.05	NSA	0.005	0.23	NA	0.022	0.028	0.01	BRL*	BRL*
Zinc	5	0.339	0.339	40.2	NA	1.44	BRL*	BRL*	0.132	0.118
Potentially Applicable Standards (non-priority pollutants)										
Aluminum	0.2	0.75	0.087	224	NA	0.347	BRL§	BRL§	0.342	0.257
Iron	0.3		1	1150	121	309	322	287	148	169
Manganese	0.05-0.1			13.6	NA	10.6	11	11.7	8.96	9.33
Ferrous Iron (mg/L)										
Iron, Ferric (+3)	0.3	NSA	1	NA	BRL ^o	NA	NA	NA	BRL ^o	37.2
Iron, Ferrous (+2)	0.3	NSA	1	NA	145	NA	NA	NA	217	191

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
- ^o - Reporting limit 0.1

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

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

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

	Human Health	SCDHEC WQC under R61-68		Dec. 16, 2008	Jan. 30, 2009	Feb. 26, 2009	Apr. 08, 2009
	MCL	CMC	CCC	BHR-MPS-006	BHR-MPS-006	BHR-MPS-010	BHR-MPS-011
Potentially Applicable Standards (priority pollutants)				Pit water treated (Dissolved, mg/L)			
Antimony	0.006	NSA	NSA	BRL*	BRL*	BRL*	0.0045
Arsenic	0.01	0.34	0.15	BRL‡	BRL‡	BRL‡	BRL‡
Cadmium	0.005	0.008	0.0026	BRL#	BRL#	BRL#	BRL#
Chromium	0.1	0.57	0.074	BRL†	BRL†	BRL†	0.0013
Copper	1	0.057	0.039	0.0278	0.0293	BRL†	0.0572
Lead	0.015	0.32	0.005	BRL†	BRL†	0.0427	BRL†
Nickel	0.61	1.071	0.167	BRL*	BRL*	BRL*	0.005
Selenium	0.05	NSA	0.005	BRL*	BRL*	BRL*	BRL*
Zinc	5	0.339	0.339	0.061	0.0628	0.0685	0.0748
Potentially Applicable Standards (non-priority pollutants)							
Aluminum	0.2	0.75	0.087	0.314	BRL§	BRL§	0.177
Iron	0.3		1	212	165	186	151
Manganese	0.05-0.1			11.2	10.2	10.7	10.8
Ferrous Iron (mg/L)							
Iron, Ferric (+3)	0.3	NSA	1	BRL°	BRL°	28.5	55.7
Iron, Ferrous (+2)	0.3	NSA	1	305	209	194	103

Notes:

SCDHEC - South Carolina Department of Health and Environment
a - South Carolina Regulation 61-68, Water Classification
adopted June 2004 and adjusted for water hardness c

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

° - Reporting limit 0.1

Yellow - Exceeds one criteria (Human Health Standard or SCI

Red - Exceeds all criteria (both Human Health Standard and

**Table 3
Pit Lake Bottom Potentially Applicable Standards Comparison**

	Human Health	SCDHEC WQC under R61-68		Oct. 2007	Dec. 16, 2008	Feb. 26, 2009	Apr. 08, 2009
	MCL	CMC	CCC	BHB-005	BHR-MPSB-008	BHR-MPB-010	BHR-MPB-011
Potentially Applicable Standards (priority pollutants)				Pit Water Untreated (mg/L)	Pit water treated (Dissolved, mg/L)	Pit water treated (Dissolved, mg/L)	Pit water treated (Dissolved, mg/L)
Antimony	0.006	NSA	NSA	0.02	BRL*	BRL*	BRL*
Arsenic	0.01	0.34	0.15	0.968	BRL†	BRL‡	BRL‡
Cadmium	0.005	0.008	0.0026	1.57	BRL#	BRL#	BRL#
Chromium	0.1	0.57	0.074	0.141	BRL†	BRL†	0.0019
Copper	1	0.057	0.039	287	0.0189	0.0284	0.0052
Lead	0.015	0.32	0.005	0.161	BRL†	0.036	BRL†
Nickel	0.61	1.071	0.167	0.404	BRL*	BRL*	0.0067
Selenium	0.05	NSA	0.005	0.23	BRL*	BRL*	BRL*
Zinc	5	0.339	0.339	40.2	0.0676	0.0601	0.112
Potentially Applicable Standards (non-priority pollutants)							
Aluminum	0.2	0.75	0.087	224	0.38	BRL§	0.193
Iron	0.3		1	1150	217	178	187
Manganese	0.05-0.1			13.6	11.4	10.6	11.1
Ferrous Iron (mg/L)							
Iron, Ferric	0.3	NSA	1		BRL°	0.52	5.83
Iron, Ferrous	0.3	NSA	1		285	186	188

Notes:

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- 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
- ° - Reporting limit 0.1

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

Table 4
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	Feb. 26, 2009	Apr. 08, 2009
	MCL	CMC	CCC	Jul. 30, 2008	Aug. 22, 2008	BHR-P1-005	BHR-S1-006	BHR-S1-006	BHR-S1-006	BHR-S1-010	BHR-S1-011		
Potentially Applicable Standards (priority pollutants)													
Antimony	0.006	NSA	NSA	NA	NA	BRL*	BRL*	BRL*	BRL*	BRL*	BRL*	BRL*	BRL*
Arsenic	0.01	0.34	0.15	NA	NA	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡
Cadmium	0.005	0.008	0.0026	5.05	0.005	0.353	0.456	0.611	0.582	0.0358	0.0358	0.0358	0.0358
Chromium	0.1	0.57	0.074	NA	NA	0.0136	BRL‡	0.0104	0.0103	BRL‡	BRL‡	BRL‡	BRL‡
Copper	1	0.057	0.039	84.3	0.138	13.7	14.7	19.3	19.6	1.08	1.08	1.08	1.08
Lead	0.015	0.32	0.005	NA	NA	0.0432	0.0322	0.0473	0.0899	BRL‡	BRL‡	BRL‡	BRL‡
Nickel	0.61	1.071	0.167	NA	NA	0.0851	0.102	0.138	0.135	0.0087	0.0087	0.0087	0.0087
Selenium	0.05	NSA	0.005	NA	NA	0.0286	BRL*	0.0238	0.044	BRL*	BRL*	BRL*	BRL*
Zinc	5	0.339	0.339	45.6	0.157	10.3	13.9	19.1	17.8	1.15	1.15	1.15	1.15
Potentially Applicable Standards (non-priority pollutants)													
Aluminum	0.2	0.75	0.087	NA	NA	36.4	35.4	41.7	45.2	0.624	0.624	0.624	0.624
Iron	0.3		1	1070	493	58.9	159	200	217	8.35	8.35	8.35	8.35
Manganese	0.05-0.1			23.6	6.93	13.4	15.7	19.6	20.1	1.89	1.89	1.89	1.89

Seep 2	Human Health			SCDHEC WQC under R61-68			Bucket #2	Bucket #2	Nov. 19, 2008	Dec. 16, 2008	Jan. 30, 2009	Feb. 26, 2009	Apr. 08, 2009
	MCL	CMC	CCC	Jul. 30, 2008	Aug. 22, 2008	BHR-P2-005	BHR-S2-006	BHR-S2-006	BHR-S2-010	BHR-S2-011			
Potentially Applicable Standards (priority pollutants)													
Antimony	0.006	NSA	NSA	NA	NA	BRL*	BRL*	BRL*	BRL*	BRL*	BRL*	BRL*	BRL*
Arsenic	0.01	0.34	0.15	NA	NA	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡
Cadmium	0.005	0.008	0.0026	5.05	0.005	0.894	0.271	0.385	0.394	0.178	0.178	0.178	0.178
Chromium	0.1	0.57	0.074	NA	NA	0.013	BRL‡	BRL‡	BRL‡	0.002	0.002	0.002	0.002
Copper	1	0.057	0.039	84.3	0.138	27.7	9.27	12.4	13.1	5.02	5.02	5.02	5.02
Lead	0.015	0.32	0.005	NA	NA	0.0323	0.0109	0.0193	0.0534	0.0112	0.0112	0.0112	0.0112
Nickel	0.61	1.071	0.167	NA	NA	0.215	0.0704	0.102	0.105	0.0431	0.0431	0.0431	0.0431
Selenium	0.05	NSA	0.005	NA	NA	0.0562	BRL*	BRL*	0.0338	BRL*	BRL*	BRL*	BRL*
Zinc	5	0.339	0.339	45.6	0.157	31.2	9.62	14.1	13.3	6.01	6.01	6.01	6.01
Potentially Applicable Standards (non-priority pollutants)													
Aluminum	0.2	0.75	0.087	NA	NA	48.6	18.1	22.3	25.5	9.21	9.21	9.21	9.21
Iron	0.3		1	1070	493	171	87.5	115	122	48.6	48.6	48.6	48.6
Manganese	0.05-0.1			23.6	6.93	53.3	15.3	26.6	20.9	9.12	9.12	9.12	9.12

Seep 3	Human Health			SCDHEC WQC under R61-68			Bucket #2	Bucket #2	Nov. 19, 2008	Dec. 16, 2008	Jan. 30, 2009	Feb. 26, 2009	Apr. 08, 2009
	MCL	CMC	CCC	Jul. 30, 2008	Aug. 22, 2008	BHR-P3-005	BHR-S3-006	BHR-S3-006	BHR-S3-010	BHR-S3-011			
Potentially Applicable Standards (priority pollutants)													
Antimony	0.006	NSA	NSA	NA	NA	BRL*	BRL*	BRL*	BRL*	BRL*	BRL*	BRL*	BRL*
Arsenic	0.01	0.34	0.15	NA	NA	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡
Cadmium	0.005	0.008	0.0026	5.05	0.005	BRL#	BRL#	0.0224	0.0499	0.0298	0.0298	0.0298	0.0298
Chromium	0.1	0.57	0.074	NA	NA	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡
Copper	1	0.057	0.039	84.3	0.138	0.0192	0.011	0.0973	0.0935	0.0438	0.0438	0.0438	0.0438
Lead	0.015	0.32	0.005	NA	NA	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡	BRL‡
Nickel	0.61	1.071	0.167	NA	NA	BRL*	BRL*	BRL*	0.0216	0.0072	0.0072	0.0072	0.0072
Selenium	0.05	NSA	0.005	NA	NA	BRL*	BRL*	BRL*	BRL*	BRL*	BRL*	BRL*	BRL*
Zinc	5	0.339	0.339	45.6	0.157	0.349	0.0987	0.808	1.17	0.521	0.521	0.521	0.521
Potentially Applicable Standards (non-priority pollutants)													
Aluminum	0.2	0.75	0.087	NA	NA	BRL§	BRL§	0.948	0.961	0.17	0.17	0.17	0.17
Iron	0.3		1	1070	493	0.172	0.153	0.473	8.55	9.73	9.73	9.73	9.73
Manganese	0.05-0.1			23.6	6.93	0.414	0.0826	2.27	2.8	0.92	0.92	0.92	0.92

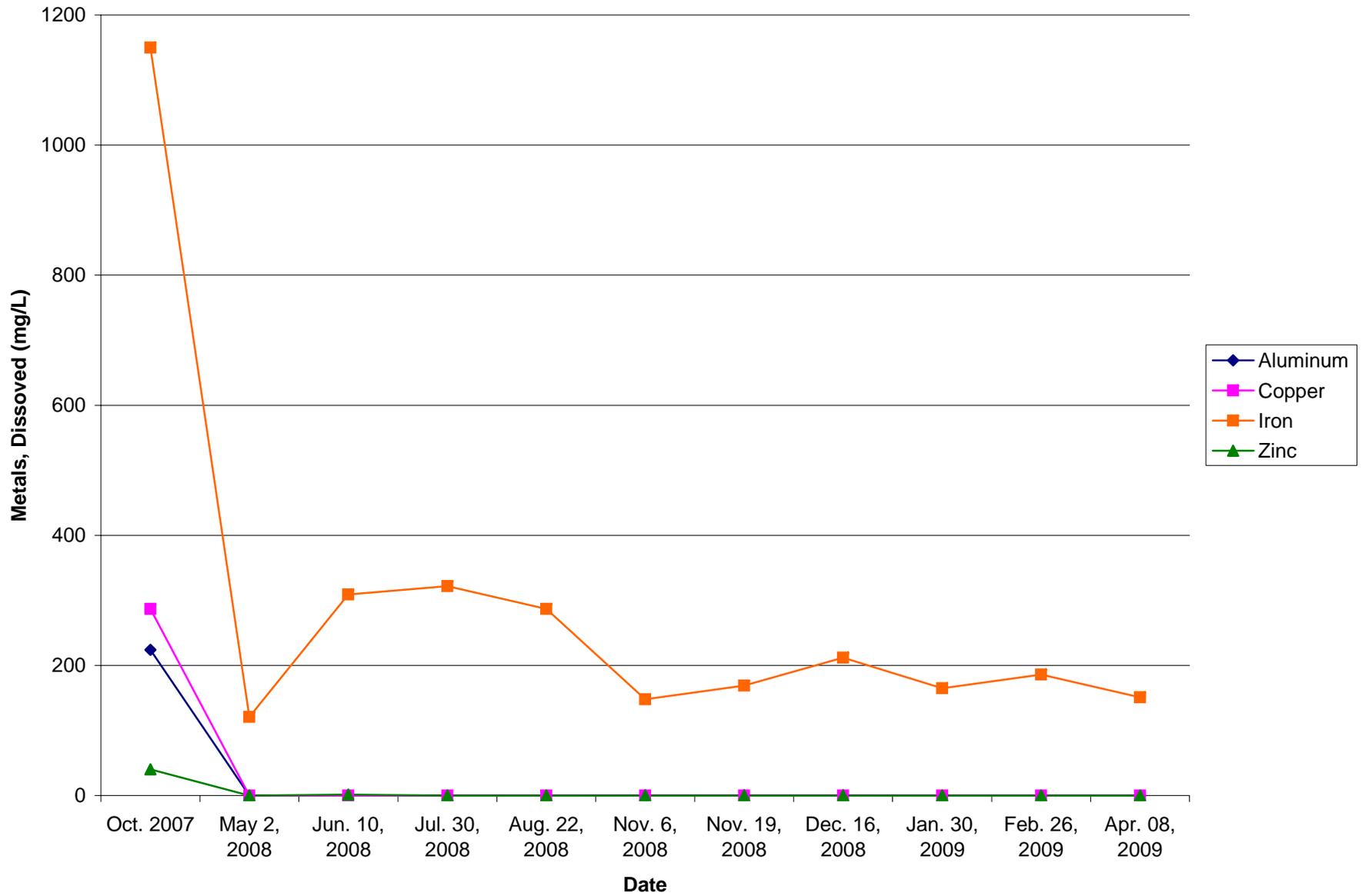
Notes:

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.

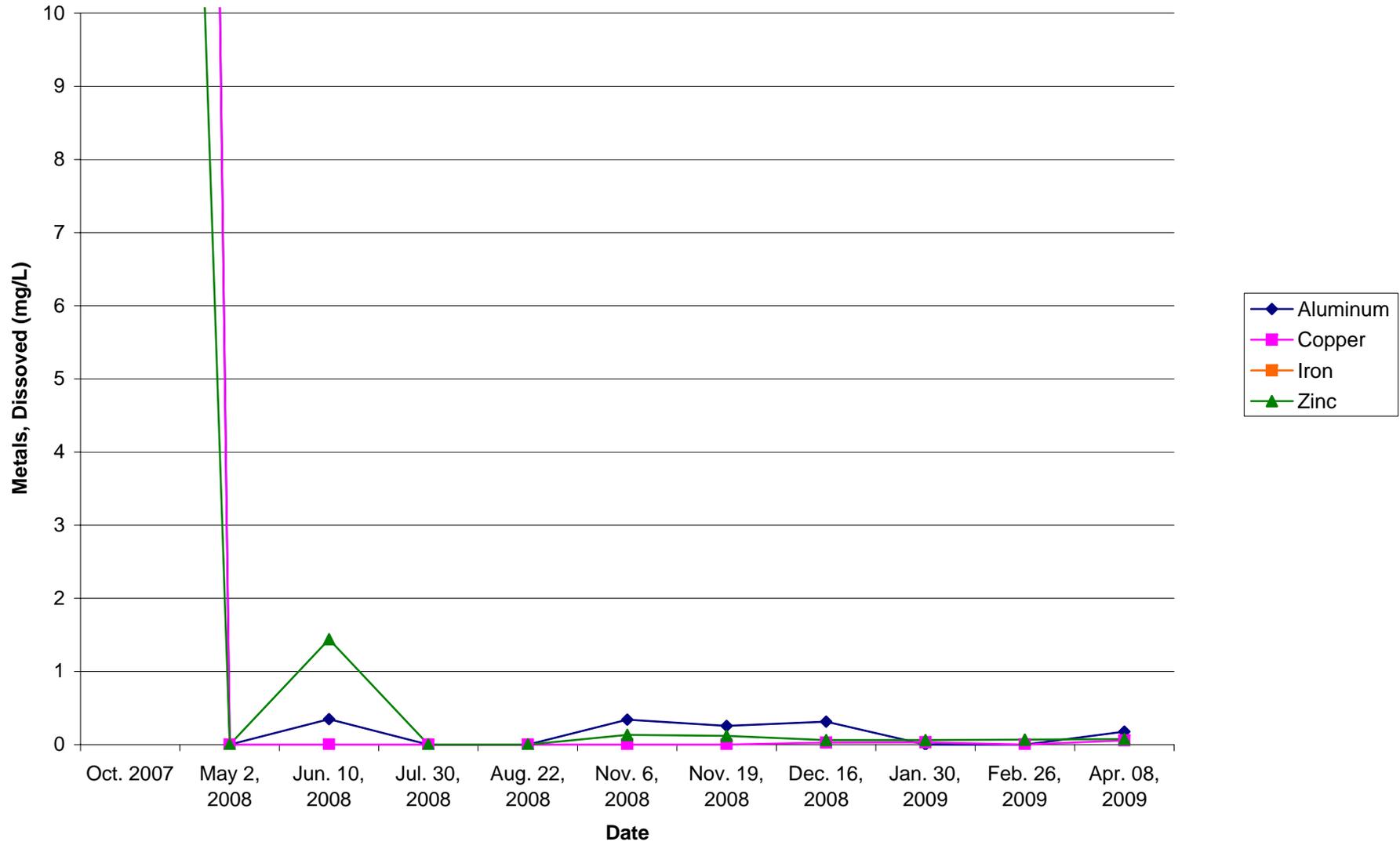
- MCL - Maximum contaminant level
- CMC - Criterion maximum concentration
- CCC - Criterion continuous concentration
- mg/L - Milligrams per liter
- NSA - Standard not available
- NA - Not analyzed
- BRL - Below reporting limit
 - * - Reporting limit 0.02
 - † - Reporting limit 0.01
 - ‡ - Reporting 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)

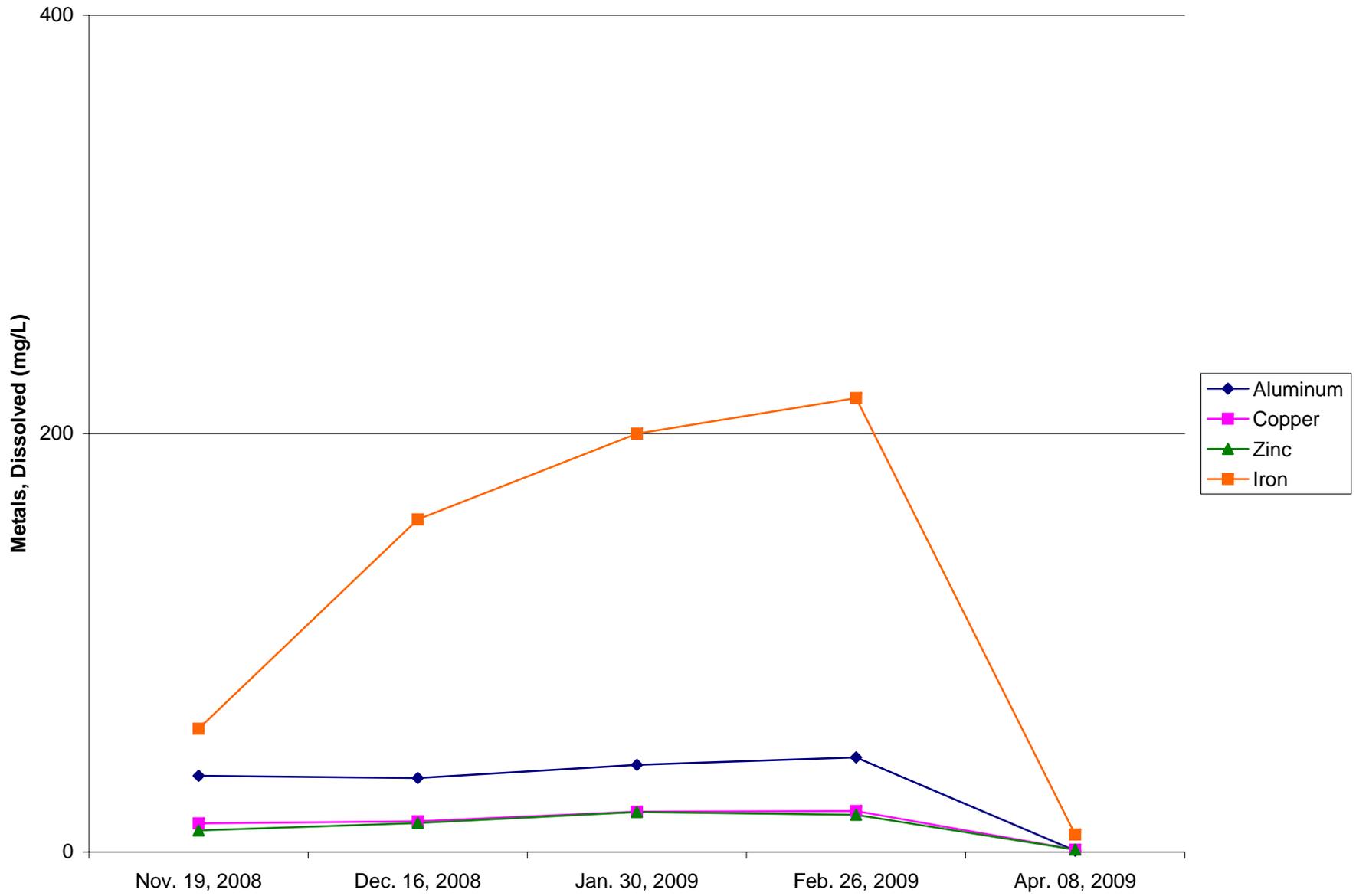
Graph 1
Pit Lake Comparison



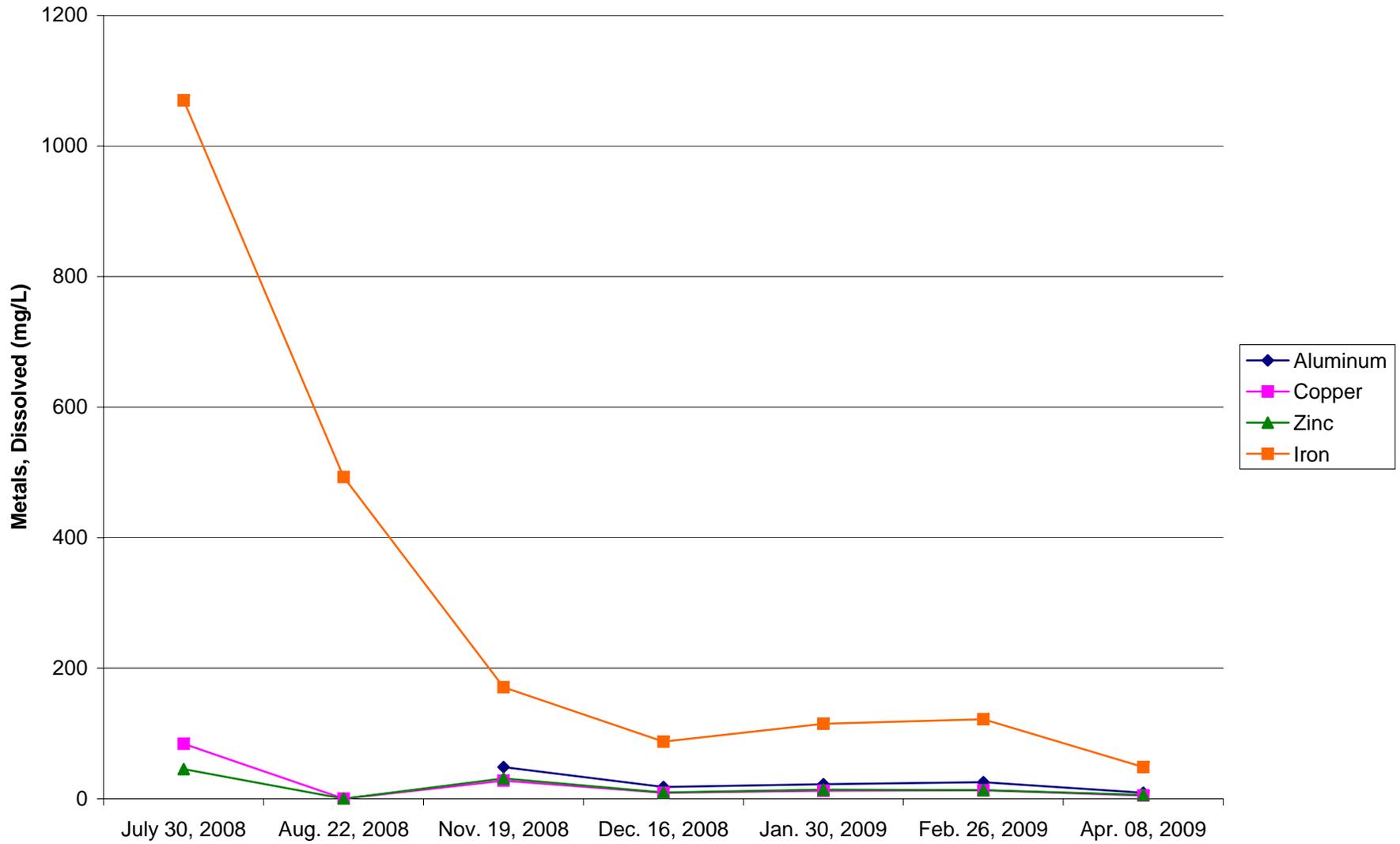
Graph 2
Pit Lake Comparison Detailed



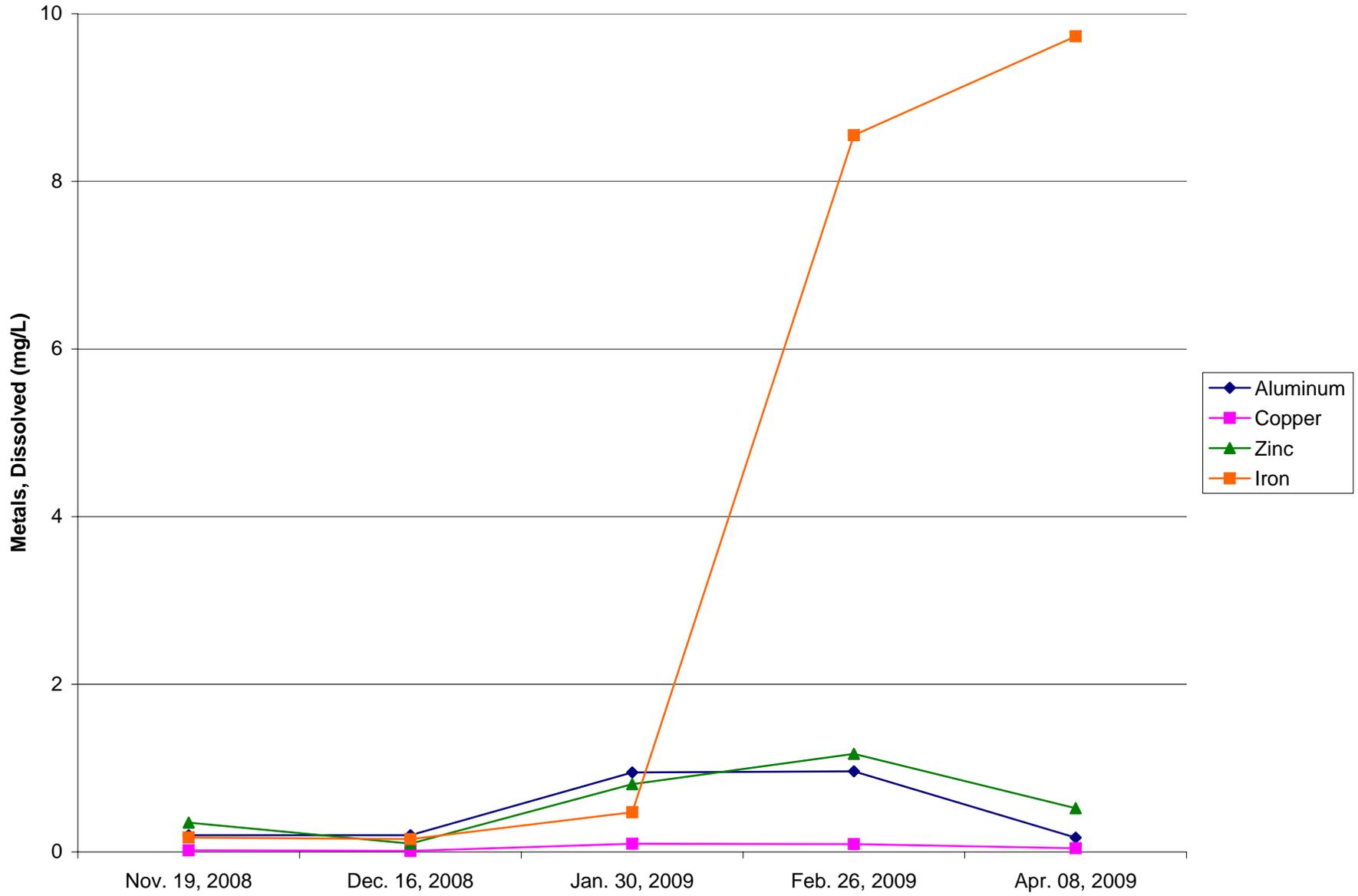
Graph 3
Seep 1 Comparison



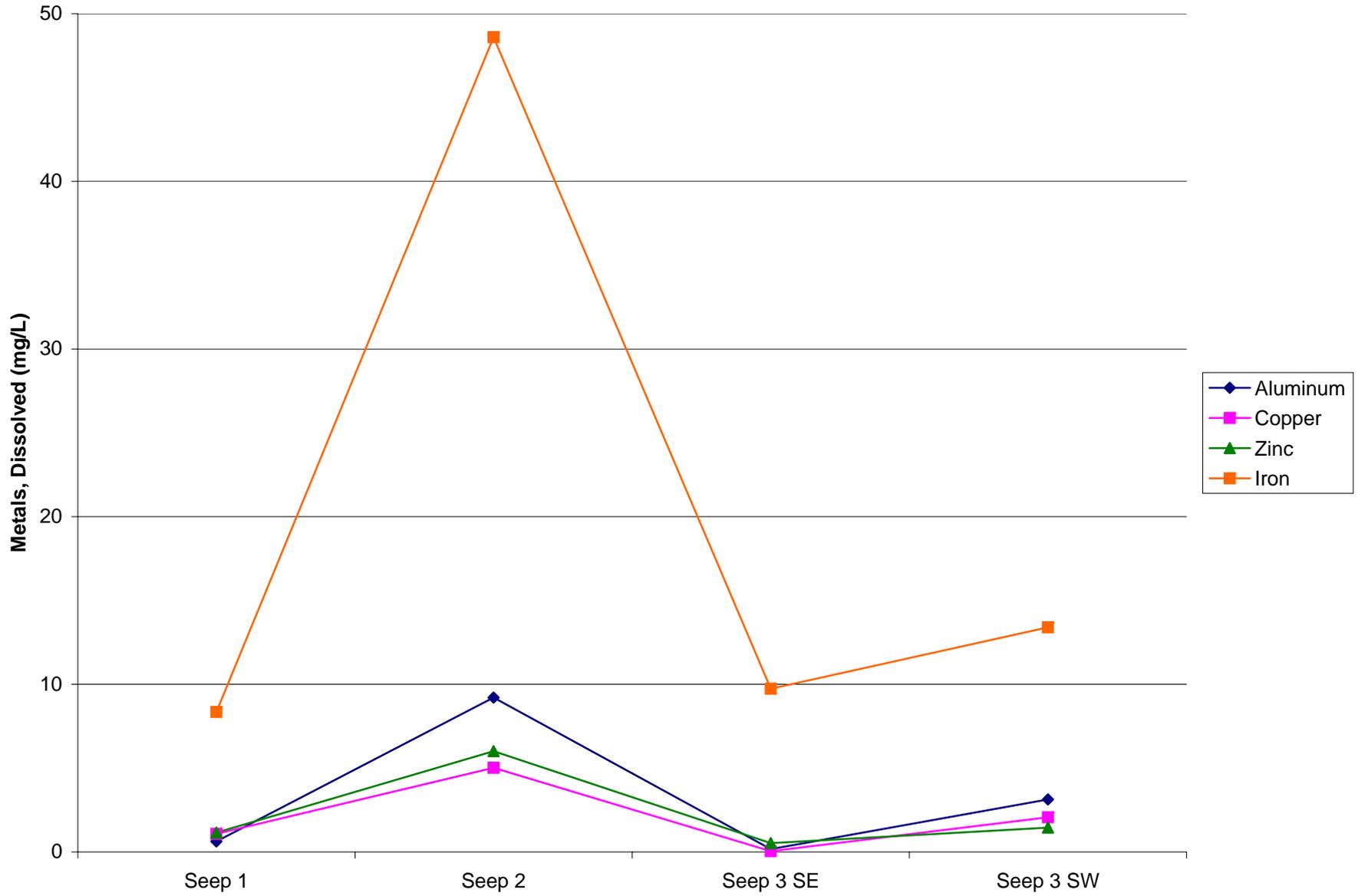
Graph 4
Seep 2 Comparison



Graph 5
Seep 3 Comparison



Graph 6
Seep Comparison for 04/08/2009



**ATTACHMENT C
ANALYTICAL DATA**

Analytical Environmental Services, Inc.

Date: 17-Apr-09

CLIENT: Oneida Total Integrated Enterprises
Project: Barite Hills
Lab ID: 0904696-001

Client Sample ID: BHR-MPS-011
Collection Date: 4/8/2009 10:50:00 AM
Matrix: AQUEOUS

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
INORGANIC ANIONS BY IC							
Sulfate	2490	100		mg/L		100	4/10/2009 9:58 AM
T. ORGANIC CARBON(TOC)(415.1/SM5310B)							
Organic Carbon, Total	71.9	1.0		mg/L		1	4/10/2009 1:03 PM
METALS, DISSOLVED							
SW6010B (SAMP_FILT) Analyst: BB							
Aluminum	0.177	0.200	J	mg/L	112033	1	4/14/2009 9:32 AM
Antimony	0.0045	0.0200	J	mg/L	112033	1	4/14/2009 9:32 AM
Arsenic	BRL	0.0500		mg/L	112033	1	4/14/2009 9:32 AM
Barium	0.0886	0.0200		mg/L	112033	1	4/14/2009 9:32 AM
Beryllium	BRL	0.0100		mg/L	112033	1	4/14/2009 9:32 AM
Cadmium	BRL	0.0050		mg/L	112033	1	4/14/2009 9:32 AM
Calcium	583	1.00		mg/L	112033	10	4/14/2009 1:52 PM
Chromium	0.0013	0.0100	J	mg/L	112033	1	4/14/2009 9:32 AM
Cobalt	0.0335	0.0200		mg/L	112033	1	4/14/2009 9:32 AM
Copper	0.0572	0.0100		mg/L	112033	1	4/14/2009 9:32 AM
Iron	151	1.00		mg/L	112033	10	4/14/2009 1:52 PM
Lead	BRL	0.0100		mg/L	112033	1	4/14/2009 9:32 AM
Magnesium	81.8	0.100		mg/L	112033	1	4/14/2009 9:32 AM
Manganese	10.8	0.0150		mg/L	112033	1	4/14/2009 9:32 AM
Nickel	0.0050	0.0200	J	mg/L	112033	1	4/14/2009 9:32 AM
Potassium	54.3	0.500		mg/L	112033	1	4/14/2009 9:32 AM
Selenium	BRL	0.0200		mg/L	112033	1	4/14/2009 9:32 AM
Silver	0.0007	0.0100	J	mg/L	112033	1	4/14/2009 9:32 AM
Sodium	108	10.0		mg/L	112033	10	4/14/2009 1:52 PM
Thallium	BRL	0.200		mg/L	112033	10	4/14/2009 1:52 PM
Vanadium	BRL	0.0100		mg/L	112033	1	4/14/2009 9:32 AM
Zinc	0.0748	0.0200		mg/L	112033	1	4/14/2009 9:32 AM
METALS, TOTAL							
SW6010B (SW3010A) Analyst: BB							
Aluminum	0.190	0.200	J	mg/L	112112	1	4/14/2009 1:13 PM
Antimony	0.0029	0.0200	J	mg/L	112112	1	4/14/2009 1:13 PM
Arsenic	BRL	0.0500		mg/L	112112	1	4/14/2009 1:13 PM
Barium	0.0925	0.0200		mg/L	112112	1	4/14/2009 1:13 PM
Beryllium	BRL	0.0100		mg/L	112112	1	4/14/2009 1:13 PM
Cadmium	BRL	0.0050		mg/L	112112	1	4/14/2009 1:13 PM
Calcium	624	1.00		mg/L	112112	10	4/14/2009 2:06 PM
Chromium	0.0026	0.0100	J	mg/L	112112	1	4/14/2009 1:13 PM
Cobalt	0.0351	0.0200		mg/L	112112	1	4/14/2009 1:13 PM
Copper	0.0492	0.0100		mg/L	112112	1	4/14/2009 1:13 PM
Iron	158	1.00		mg/L	112112	10	4/14/2009 2:06 PM
Lead	0.0025	0.0100	J	mg/L	112112	1	4/14/2009 1:13 PM

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

Analytical Environmental Services, Inc.

Date: 17-Apr-09

CLIENT: Oneida Total Integrated Enterprises
Project: Barite Hills
Lab ID: 0904696-001

Client Sample ID: BHR-MPS-011
Collection Date: 4/8/2009 10:50:00 AM
Matrix: AQUEOUS

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
METALS, TOTAL					SW6010B	(SW3010A)	Analyst: BB
Magnesium	86.5	0.100		mg/L	112112	1	4/14/2009 1:13 PM
Manganese	11.4	0.0150		mg/L	112112	1	4/14/2009 1:13 PM
Nickel	0.0052	0.0200	J	mg/L	112112	1	4/14/2009 1:13 PM
Potassium	55.4	0.500		mg/L	112112	1	4/14/2009 1:13 PM
Selenium	BRL	0.0200		mg/L	112112	1	4/14/2009 1:13 PM
Silver	0.0005	0.0100	J	mg/L	112112	1	4/14/2009 1:13 PM
Sodium	116	10.0		mg/L	112112	10	4/14/2009 2:06 PM
Thallium	BRL	0.200		mg/L	112112	10	4/14/2009 2:06 PM
Vanadium	BRL	0.0100		mg/L	112112	1	4/14/2009 1:13 PM
Zinc	0.0755	0.0200		mg/L	112112	1	4/14/2009 1:13 PM
MERCURY, DISSOLVED					SW7470A	(SW7470)	Analyst: MAW
Mercury	BRL	0.00020		mg/L	111997	1	4/10/2009 3:10 PM
MERCURY, TOTAL					SW7470A	(SW7470)	Analyst: MAW
Mercury	BRL	0.00020		mg/L	112164	1	4/15/2009 4:30 PM
HYDROGEN ION (PH)(150.1/SM4500 H+ B)					E150.1		Analyst: CG
pH	4.64	0.01	H	pH Units		1	4/10/2009 5:05 PM
FERROUS IRON					SM3500-FE-D		Analyst: CG
Iron, as Ferric (Fe+3)	55.7	0.100	H	mg/L		1	4/10/2009 10:50 AM
Iron, as Ferrous (Fe+2)	103	20.0	H	mg/L		200	4/10/2009 10:50 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: 17-Apr-09

CLIENT: Oneida Total Integrated Enterprises
Project: Barite Hills
Lab ID: 0904696-002

Client Sample ID: BHR-MPB-011
Collection Date: 4/8/2009 11:15:00 AM
Matrix: AQUEOUS

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
INORGANIC ANIONS BY IC							
Sulfate	2460	100		mg/L		100	4/10/2009 11:56 AM
				E300	Analyst: GAR		
T. ORGANIC CARBON(TOC)(415.1/SM5310B)							
Organic Carbon, Total	75.9	1.0		mg/L		1	4/10/2009 1:35 PM
				E415.1	Analyst: GAR		
METALS, DISSOLVED							
				SW6010B	(SAMP_FILT)	Analyst: BB	
Aluminum	0.193	0.200	J	mg/L	112033	1	4/14/2009 9:35 AM
Antimony	BRL	0.0200		mg/L	112033	1	4/14/2009 9:35 AM
Arsenic	BRL	0.0500		mg/L	112033	1	4/14/2009 9:35 AM
Barium	0.105	0.0200		mg/L	112033	1	4/14/2009 9:35 AM
Beryllium	BRL	0.0100		mg/L	112033	1	4/14/2009 9:35 AM
Cadmium	BRL	0.0050		mg/L	112033	1	4/14/2009 9:35 AM
Calcium	620	1.00		mg/L	112033	10	4/14/2009 1:56 PM
Chromium	0.0019	0.0100	J	mg/L	112033	1	4/14/2009 9:35 AM
Cobalt	0.0387	0.0200		mg/L	112033	1	4/14/2009 9:35 AM
Copper	0.0052	0.0100	J	mg/L	112033	1	4/14/2009 9:35 AM
Iron	187	1.00		mg/L	112033	10	4/14/2009 1:56 PM
Lead	BRL	0.0100		mg/L	112033	1	4/14/2009 9:35 AM
Magnesium	84.6	0.100		mg/L	112033	1	4/14/2009 9:35 AM
Manganese	11.1	0.0150		mg/L	112033	1	4/14/2009 9:35 AM
Nickel	0.0067	0.0200	J	mg/L	112033	1	4/14/2009 9:35 AM
Potassium	56.2	0.500		mg/L	112033	1	4/14/2009 9:35 AM
Selenium	BRL	0.0200		mg/L	112033	1	4/14/2009 9:35 AM
Silver	0.0005	0.0100	J	mg/L	112033	1	4/14/2009 9:35 AM
Sodium	120	10.0		mg/L	112033	10	4/14/2009 1:56 PM
Thallium	BRL	0.200		mg/L	112033	10	4/14/2009 1:56 PM
Vanadium	BRL	0.0100		mg/L	112033	1	4/14/2009 9:35 AM
Zinc	0.112	0.0200		mg/L	112033	1	4/14/2009 9:35 AM
METALS, TOTAL							
				SW6010B	(SW3010A)	Analyst: BB	
Aluminum	0.220	0.200		mg/L	112112	1	4/14/2009 1:17 PM
Antimony	0.0063	0.0200	J	mg/L	112112	1	4/14/2009 1:17 PM
Arsenic	BRL	0.0500		mg/L	112112	1	4/14/2009 1:17 PM
Barium	0.108	0.0200		mg/L	112112	1	4/14/2009 1:17 PM
Beryllium	BRL	0.0100		mg/L	112112	1	4/14/2009 1:17 PM
Cadmium	BRL	0.0050		mg/L	112112	1	4/14/2009 1:17 PM
Calcium	644	1.00		mg/L	112112	10	4/14/2009 2:10 PM
Chromium	0.0030	0.0100	J	mg/L	112112	1	4/14/2009 1:17 PM
Cobalt	0.0402	0.0200		mg/L	112112	1	4/14/2009 1:17 PM
Copper	0.0254	0.0100		mg/L	112112	1	4/14/2009 1:17 PM
Iron	194	1.00		mg/L	112112	10	4/14/2009 2:10 PM
Lead	0.0031	0.0100	J	mg/L	112112	1	4/14/2009 1:17 PM

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

Analytical Environmental Services, Inc.

Date: 17-Apr-09

CLIENT: Oneida Total Integrated Enterprises
Project: Barite Hills
Lab ID: 0904696-002

Client Sample ID: BHR-MPB-011
Collection Date: 4/8/2009 11:15:00 AM
Matrix: AQUEOUS

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
METALS, TOTAL					SW6010B	(SW3010A)	Analyst: BB
Magnesium	90.0	0.100		mg/L	112112	1	4/14/2009 1:17 PM
Manganese	11.8	0.0150		mg/L	112112	1	4/14/2009 1:17 PM
Nickel	0.0063	0.0200	J	mg/L	112112	1	4/14/2009 1:17 PM
Potassium	58.0	0.500		mg/L	112112	1	4/14/2009 1:17 PM
Selenium	BRL	0.0200		mg/L	112112	1	4/14/2009 1:17 PM
Silver	0.0004	0.0100	J	mg/L	112112	1	4/14/2009 1:17 PM
Sodium	125	10.0		mg/L	112112	10	4/14/2009 2:10 PM
Thallium	BRL	0.200		mg/L	112112	10	4/14/2009 2:10 PM
Vanadium	BRL	0.0100		mg/L	112112	1	4/14/2009 1:17 PM
Zinc	0.112	0.0200		mg/L	112112	1	4/14/2009 1:17 PM
MERCURY, DISSOLVED					SW7470A	(SW7470)	Analyst: MAW
Mercury	BRL	0.00020		mg/L	111997	1	4/10/2009 3:12 PM
MERCURY, TOTAL					SW7470A	(SW7470)	Analyst: MAW
Mercury	0.00007	0.00020	J	mg/L	112164	1	4/15/2009 4:32 PM
HYDROGEN ION (PH)(150.1/SM4500 H+ B)					E150.1		Analyst: CG
pH	5.15	0.01	H	pH Units		1	4/10/2009 5:12 PM
FERROUS IRON					SM3500-FE-D		Analyst: CG
Iron, as Ferric (Fe+3)	5.83	0.100	H	mg/L		1	4/10/2009 10:50 AM
Iron, as Ferrous (Fe+2)	188	20.0	H	mg/L		200	4/10/2009 10:50 AM

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

Analytical Environmental Services, Inc.

Date: 17-Apr-09

CLIENT: Oneida Total Integrated Enterprises
Project: Barite Hills
Lab ID: 0904696-003

Client Sample ID: BHR-SO-011
Collection Date: 4/8/2009 12:20:00 PM
Matrix: AQUEOUS

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
INORGANIC ANIONS BY IC							
Sulfate	164	10.0		mg/L		10	4/10/2009 12:15 PM
T. ORGANIC CARBON(TOC)(415.1/SM5310B)							
Organic Carbon, Total	4.4	1.0		mg/L		1	4/10/2009 1:46 PM
METALS, DISSOLVED							
SW6010B (SAMP_FILT) Analyst: BB							
Aluminum	3.13	0.200		mg/L	112033	1	4/14/2009 9:39 AM
Antimony	BRL	0.0200		mg/L	112033	1	4/14/2009 9:39 AM
Arsenic	BRL	0.0500		mg/L	112033	1	4/14/2009 9:39 AM
Barium	0.0407	0.0200		mg/L	112033	1	4/14/2009 9:39 AM
Beryllium	BRL	0.0100		mg/L	112033	1	4/14/2009 9:39 AM
Cadmium	0.0445	0.0050		mg/L	112033	1	4/14/2009 9:39 AM
Calcium	22.9	0.100		mg/L	112033	1	4/14/2009 9:39 AM
Chromium	BRL	0.0100		mg/L	112033	1	4/14/2009 9:39 AM
Cobalt	0.0658	0.0200		mg/L	112033	1	4/14/2009 9:39 AM
Copper	2.07	0.0100		mg/L	112033	1	4/14/2009 9:39 AM
Iron	13.4	0.100		mg/L	112033	1	4/14/2009 9:39 AM
Lead	0.0025	0.0100	J	mg/L	112033	1	4/14/2009 9:39 AM
Magnesium	8.37	0.100		mg/L	112033	1	4/14/2009 9:39 AM
Manganese	1.99	0.0150		mg/L	112033	1	4/14/2009 9:39 AM
Nickel	0.0119	0.0200	J	mg/L	112033	1	4/14/2009 9:39 AM
Potassium	1.15	0.500		mg/L	112033	1	4/14/2009 9:39 AM
Selenium	BRL	0.0200		mg/L	112033	1	4/14/2009 9:39 AM
Silver	BRL	0.0100		mg/L	112033	1	4/14/2009 9:39 AM
Sodium	8.35	1.00		mg/L	112033	1	4/14/2009 9:39 AM
Thallium	BRL	0.0200		mg/L	112033	1	4/14/2009 9:39 AM
Vanadium	BRL	0.0100		mg/L	112033	1	4/14/2009 9:39 AM
Zinc	1.45	0.0200		mg/L	112033	1	4/14/2009 9:39 AM
MERCURY, DISSOLVED							
SW7470A (SW7470) Analyst: MAW							
Mercury	BRL	0.00020		mg/L	111997	1	4/10/2009 3:14 PM
HYDROGEN ION (PH)(150.1/SM4500 H+ B)							
E150.1 Analyst: CG							
pH	4.71	0.01	H	pH Units		1	4/10/2009 5:16 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: 17-Apr-09

CLIENT: Oneida Total Integrated Enterprises
Project: Barite Hills
Lab ID: 0904696-004

Client Sample ID: BHR-S1-011
Collection Date: 4/8/2009 12:30:00 PM
Matrix: AQUEOUS

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
INORGANIC ANIONS BY IC							
			E300				Analyst: GAR
Sulfate	107	10.0		mg/L	112033	10	4/10/2009 12:30 PM
T. ORGANIC CARBON(TOC)(415.1/SM5310B)							
			E415.1				Analyst: GAR
Organic Carbon, Total	4.4	1.0		mg/L	112033	1	4/10/2009 1:55 PM
METALS, DISSOLVED							
			SW6010B		(SAMP_FILTER)		Analyst: BB
Aluminum	0.624	0.200		mg/L	112033	1	4/14/2009 9:43 AM
Antimony	BRL	0.0200		mg/L	112033	1	4/14/2009 9:43 AM
Arsenic	BRL	0.0500		mg/L	112033	1	4/14/2009 9:43 AM
Barium	0.0413	0.0200		mg/L	112033	1	4/14/2009 9:43 AM
Beryllium	BRL	0.0100		mg/L	112033	1	4/14/2009 9:43 AM
Cadmium	0.0358	0.0050		mg/L	112033	1	4/14/2009 9:43 AM
Calcium	17.5	0.100		mg/L	112033	1	4/14/2009 9:43 AM
Chromium	BRL	0.0100		mg/L	112033	1	4/14/2009 9:43 AM
Cobalt	0.0554	0.0200		mg/L	112033	1	4/14/2009 9:43 AM
Copper	1.08	0.0100		mg/L	112033	1	4/14/2009 9:43 AM
Iron	8.35	0.100		mg/L	112033	1	4/14/2009 9:43 AM
Lead	BRL	0.0100		mg/L	112033	1	4/14/2009 9:43 AM
Magnesium	7.26	0.100		mg/L	112033	1	4/14/2009 9:43 AM
Manganese	1.89	0.0150		mg/L	112033	1	4/14/2009 9:43 AM
Nickel	0.0087	0.0200	J	mg/L	112033	1	4/14/2009 9:43 AM
Potassium	0.950	0.500		mg/L	112033	1	4/14/2009 9:43 AM
Selenium	BRL	0.0200		mg/L	112033	1	4/14/2009 9:43 AM
Silver	BRL	0.0100		mg/L	112033	1	4/14/2009 9:43 AM
Sodium	7.05	1.00		mg/L	112033	1	4/14/2009 9:43 AM
Thallium	BRL	0.0200		mg/L	112033	1	4/14/2009 9:43 AM
Vanadium	BRL	0.0100		mg/L	112033	1	4/14/2009 9:43 AM
Zinc	1.15	0.0200		mg/L	112033	1	4/14/2009 9:43 AM
MERCURY, DISSOLVED							
			SW7470A		(SW7470)		Analyst: MAW
Mercury	BRL	0.00020		mg/L	111997	1	4/10/2009 3:16 PM
HYDROGEN ION (PH)(150.1/SM4500 H+ B)							
			E150.1				Analyst: CG
pH	5.20	0.01	H	pH Units	112033	1	4/10/2009 5:25 PM

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

Analytical Environmental Services, Inc.

Date: 17-Apr-09

CLIENT: Oneida Total Integrated Enterprises
Project: Barite Hills
Lab ID: 0904696-005

Client Sample ID: BHR-S2-011
Collection Date: 4/8/2009 12:45:00 PM
Matrix: AQUEOUS

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
INORGANIC ANIONS BY IC							
			E300				Analyst: GAR
Sulfate	529	10.0		mg/L		10	4/10/2009 12:45 PM
T. ORGANIC CARBON(TOC)(415.1/SM5310B)							
			E415.1				Analyst: GAR
Organic Carbon, Total	3.6	1.0		mg/L		1	4/10/2009 2:04 PM
METALS, DISSOLVED							
			SW6010B		(SAMP_FILT)		Analyst: BB
Aluminum	9.21	0.200		mg/L	112033	1	4/14/2009 10:02 AM
Antimony	BRL	0.0200		mg/L	112033	1	4/14/2009 10:02 AM
Arsenic	BRL	0.0500		mg/L	112033	1	4/14/2009 10:02 AM
Barium	0.0983	0.0200		mg/L	112033	1	4/14/2009 10:02 AM
Beryllium	BRL	0.0100		mg/L	112033	1	4/14/2009 10:02 AM
Cadmium	0.178	0.0050		mg/L	112033	1	4/14/2009 10:02 AM
Calcium	61.7	0.100		mg/L	112033	1	4/14/2009 10:02 AM
Chromium	0.0020	0.0100	J	mg/L	112033	1	4/14/2009 10:02 AM
Cobalt	0.370	0.0200		mg/L	112033	1	4/14/2009 10:02 AM
Copper	5.02	0.0100		mg/L	112033	1	4/14/2009 10:02 AM
Iron	48.6	0.100		mg/L	112033	1	4/14/2009 10:02 AM
Lead	0.0112	0.0100		mg/L	112033	1	4/14/2009 10:02 AM
Magnesium	18.4	0.100		mg/L	112033	1	4/14/2009 10:02 AM
Manganese	9.12	0.0150		mg/L	112033	1	4/14/2009 10:02 AM
Nickel	0.0431	0.0200		mg/L	112033	1	4/14/2009 10:02 AM
Potassium	1.79	0.500		mg/L	112033	1	4/14/2009 10:02 AM
Selenium	BRL	0.0200		mg/L	112033	1	4/14/2009 10:02 AM
Silver	BRL	0.0100		mg/L	112033	1	4/14/2009 10:02 AM
Sodium	16.3	1.00		mg/L	112033	1	4/14/2009 10:02 AM
Thallium	BRL	0.0400		mg/L	112033	2	4/14/2009 4:41 PM
Vanadium	BRL	0.0100		mg/L	112033	1	4/14/2009 10:02 AM
Zinc	6.01	0.0200		mg/L	112033	1	4/14/2009 10:02 AM
MERCURY, DISSOLVED							
			SW7470A		(SW7470)		Analyst: MAW
Mercury	0.00007	0.00020	J	mg/L	111997	1	4/10/2009 3:17 PM
HYDROGEN ION (PH)(150.1/SM4500 H+ B)							
			E150.1				Analyst: CG
pH	3.74	0.01	H	pH Units		1	4/10/2009 5:30 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: 17-Apr-09

CLIENT: Oneida Total Integrated Enterprises **Client Sample ID:** BHR-S3-011
Project: Barite Hills **Collection Date:** 4/8/2009 1:00:00 PM
Lab ID: 0904696-006 **Matrix:** AQUEOUS

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
INORGANIC ANIONS BY IC							
Sulfate	103	10.0	E300	mg/L		10	Analyst: GAR 4/10/2009 12:59 PM
T. ORGANIC CARBON(TOC)(415.1/SM5310B)							
Organic Carbon, Total	4.4	1.0	E415.1	mg/L		1	Analyst: GAR 4/10/2009 2:15 PM
METALS, DISSOLVED							
			SW6010B		(SAMP_FILT)		Analyst: BB
Aluminum	0.170	0.200	J	mg/L	112033	1	4/14/2009 10:06 AM
Antimony	BRL	0.0200		mg/L	112033	1	4/14/2009 10:06 AM
Arsenic	BRL	0.0500		mg/L	112033	1	4/14/2009 10:06 AM
Barium	0.132	0.0200		mg/L	112033	1	4/14/2009 10:06 AM
Beryllium	BRL	0.0100		mg/L	112033	1	4/14/2009 10:06 AM
Cadmium	0.0298	0.0050		mg/L	112033	1	4/14/2009 10:06 AM
Calcium	19.2	0.100		mg/L	112033	1	4/14/2009 10:06 AM
Chromium	BRL	0.0100		mg/L	112033	1	4/14/2009 10:06 AM
Cobalt	0.0242	0.0200		mg/L	112033	1	4/14/2009 10:06 AM
Copper	0.0438	0.0100		mg/L	112033	1	4/14/2009 10:06 AM
Iron	9.73	0.100		mg/L	112033	1	4/14/2009 10:06 AM
Lead	BRL	0.0100		mg/L	112033	1	4/14/2009 10:06 AM
Magnesium	8.26	0.100		mg/L	112033	1	4/14/2009 10:06 AM
Manganese	0.920	0.0150		mg/L	112033	1	4/14/2009 10:06 AM
Nickel	0.0072	0.0200	J	mg/L	112033	1	4/14/2009 10:06 AM
Potassium	0.714	0.500		mg/L	112033	1	4/14/2009 10:06 AM
Selenium	BRL	0.0200		mg/L	112033	1	4/14/2009 10:06 AM
Silver	BRL	0.0100		mg/L	112033	1	4/14/2009 10:06 AM
Sodium	11.2	1.00		mg/L	112033	1	4/14/2009 10:06 AM
Thallium	BRL	0.0200		mg/L	112033	1	4/14/2009 10:06 AM
Vanadium	BRL	0.0100		mg/L	112033	1	4/14/2009 10:06 AM
Zinc	0.521	0.0200		mg/L	112033	1	4/14/2009 10:06 AM
MERCURY, DISSOLVED							
Mercury	BRL	0.00020	SW7470A	mg/L	(SW7470)	111997	Analyst: MAW 4/10/2009 3:19 PM
HYDROGEN ION (PH)(150.1/SM4500 H+ B)							
pH	4.70	0.01	E150.1	H	pH Units	1	Analyst: CG 4/10/2009 5:35 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

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	<input type="checkbox"/>	Landfill	<input type="checkbox"/>
		Inactive	<input checked="" type="checkbox"/>	Uncontrolled	<input type="checkbox"/>
		Secure	<input checked="" type="checkbox"/>	Industrial	<input type="checkbox"/>
		Unsecure	<input type="checkbox"/>	Recovery	<input checked="" type="checkbox"/>
		Enclosed space	<input type="checkbox"/>	Well Field	<input type="checkbox"/>
				Other (specify)	<input type="checkbox"/>
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: <input type="checkbox"/> Residential <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Rural <input type="checkbox"/> Urban <input type="checkbox"/> 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*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****HAZARDOUS MATERIAL SUMMARY:***Circle waste type and estimate amounts by category.*

CHEMICALS: <i>Amount/Units:</i>	SOLIDS: <i>Amount/Units:</i>	SLUDGES: <i>Amount/Units:</i>	SOLVENTS: <i>Amount/Units:</i>	OILS: <i>Amount/Units:</i>	OTHER: <i>Amount/Units:</i>
	Metals unknown	Inorganic unknown			

OVERALL HAZARD EVALUATION: ()High (X)Medium ()Low ()Unknown**JUSTIFICATION:** Stabilization of Main Pit lake for pyrite contact with liquid.**FIRE/EXPLOSION POTENTIAL:** ()High ()Medium ()Low (X)Unknown**INFORMATION COMPLETE:** ()Complete ()Incomplete (X)Best Available at Current Time

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

This document is for the exclusive use of TN&Associates its subcontractors, and EPA.

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		
	Eyewear: Safety Glasses Hard Hat		Eyewear: Safety Glasses Hard Hat		
Modified D	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		

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
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 _____			

