Appendix A

2010 EE/CA Field Investigation Summary

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1 INTRODUCTION TO 2010 FIELD INVESTIGATION

In November 2010, Environmental Cost Management, Inc. (ECM) completed an Engineering Evaluation and Cost Analysis (EE/CA) field investigation at the Chicago Mercury Mine and Research Mercury Mine (hereinafter referred to individually as "Chicago Mine" and "Research Mine" or paired as "the Chicago Research Site"). The purpose of this investigation was to address important data gaps relevant to evaluating alternative non-time critical removal actions under CERCLA, including the following:

- The mine waste's acid generation potential,
- The mine waste's potential to leach to groundwater,
- Concentrations of metals already in groundwater near mine waste, and
- Volumes of various mine wastes.

The analytical results from the samples collected during the November 2010 EE/CA field investigation are discussed in detail in the main body of the EE/CA Report (**Section 3** - Source, Nature, and Extent of Contamination). Details of the field investigation activities and methods utilized in the field and at the laboratory are presented in the following sections. All samples discussed in the following sections are illustrated on **Figure A-1** (XRF data), **Figure A-2** (Chicago Mine fixed lab results), **and Figure A-3** (Research Mine fixed lab results). The figures are presented herein as pages A10 through A13. All data are tabulated and presented on **Table A-1** through **Table A-6** (pages A13 through A27). All analytical data is provided at the end of this appendix.

1.1 SITE PREPARATIONS

Prior to commencing the field investigation, ECM met with representatives from the Bureau of Land Management Ukiah Field Office (BLM) to conduct a site visit and to observe the characteristics of the mines and surrounding area. After careful consideration, ECM determined that the most prudent course of action was to mobilize equipment to various boring and sampling locations on foot or using a small off-road vehicle, as opposed to making improvements upon the existing, severely decayed, primitive road network. This approach minimized potential site impacts under Section 404 of the Clean Water Act.

2 SOIL, SEDIMENT, AND WASTE SAMPLE COLLECTION

2.1 SOIL, SEDIMENT, AND WASTE SCREENING WITH X- RAY FLUORESCENCE

ECM utilized a portable X-ray fluorescence (XRF) meter in the field to measure *in-situ* metals concentrations in soil, waste, and sediment samples. Two hundred and fifty nine (259) samples, including duplicates, were collected and analyzed in the field to assess metals concentrations (see **Table A-1**). The XRF samples were collected as follows:

- 52 Chicago Mine soil samples,
- 45 Chicago Mine waste rock/tailing samples (trench samples),
- 2 Chicago Mine sediment samples,
- 110 Research Mine soil samples,
- 47 Research Mine waste rock/tailing samples (trench samples),
- 2 Research Mine sediment samples, and
- 1 sediment sample collected between the mines.

Table A-1 presents the results of the XRF screening. **Figure A-1** illustrates the sample locations. **Section 3** discusses the XRF analytical results.

In addition to collecting XRF data, ECM sampled soil for total metals analysis at a fixed laboratory at an approximate ratio of 1 for every 20 XRF samples[a]. Additional analyses were also performed, and will be discussed in detail in **Section 5**.

2.2 TRENCH SAMPLES (WASTE ROCK AND TAILINGS)

ECM excavated 23 exploratory trenches within tailings and waste rock piles to collect representative samples, to delineate mercury concentrations with depth, and to develop cross-sections to determine the approximate volumes of the waste piles. Fourteen (14) trenches were completed at the Chicago Mine (CMT-1 through CMT-14) and nine (9) trenches were completed at the Research Mine (RMT-1 through RMT-9). The trench locations are illustrated on **Figure A-1** in the areas where cluster samples are depicted (i.e: RMT and CMT samples). The boring logs for these trenches are provided on pages C28 through C42.

A total of 45 XRF samples were collected from the Chicago Mine trenches and 47 XRF samples were collected from the Research Mine trenches. In addition, ECM collected samples at an approximate ratio of 1 to 20 and sent them to a fixed laboratory for total metals analysis. Additional analyses were also performed, and will be discussed in detail in **Section 5**.

As with the soil samples, trench sample locations are illustrated on **Figure A-1** and the locations of select fixed lab samples are presented on **Figure A-2** and **Figure A-3**.

3 SURFACE WATER SAMPLING

ECM personnel collected five surface water samples, including:

- one sample upstream of Chicago Mine
- one sample downstream from Chicago Mine (upstream from Research Mine)
- one sample downstream from Research Mine
- one sample midway through Chicago Mine area, and
- one sample midway through Research Mine area.

The sample locations are illustrated on **Figures A-1**, **A-2**, and **A-3**. The analytical results are discussed in **Section 6**.

4 GROUNDWATER WELL INSTALLATION AND SAMPLING

4.1 INSTALLATION OF WELLS

ECM completed two wells to collect groundwater data as part of the field investigation. Prior to completing the Chicago Mine well on November 10, 2010, ECM attempted to install the well at two other locations but encountered refusal. ECM also attempted to install another well at the Research Mine but encountered refusal. The Research Mine well was completed on November 11, 2010. The wells (CW-1 and RW-1) are depicted on **Figure A-1**. The well boring/completion logs are provided on pages C43 through C47.

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[a] The ratio of 1:20 equals 5%; ECM collected approximately 250 XRF samples (excluding duplicates) and analyzed 13 of these samples (excluding duplicates) for total metals. The ratio of 250:13 equals 5%.

Monitoring wells CW-1 and RW-1 were installed with a manual power auger to a depth of 6.5 feet below ground surface (bgs) and 5.2 feet bgs, respectively. Waste soil from the soil boring activities was left on-site in four sealed 5-gallon buckets, for disposal during the removal action. Wastewater generated onsite was used to suppress dust from mine wastes.

4.2 DEVELOPMENT OF WELLS

On November 15, 2010, ECM personnel developed wells CW-1 and RW-1. The wells were surged with a surge block, hand bailed, and pumped with peristaltic pump until the well water was clear. This was done to ensure a low turbidity (i.e., well below 50 Nephelometric Turbidity Units, or NTUs) in the groundwater samples, thus avoiding false positives in the analyses of the well water for the metals. The well development logs for these wells are include on pages C48 and C49. Final measurements were below 2 NTUs in each well, indicating that turbidity would not compromise sample representativeness.

4.3 GROUNDWATER SAMPLING

ECM personnel collected three groundwater samples on November 19, 2010, including:

- one sample from CW-1,
- one sample from RW-1, and
- one sample from a spring located upgradient (uphill) from the Chicago Mine (**Figure A-1**).

The field monitoring logs for these wells are included on pages C50 and C51. The sample locations are illustrated on **Figures A-1**, **A-2**, and **A-3**. The analytical results from these samples are discussed in **Section 6**.

5 METALS ANALYSIS APPROACH

The following subsections describe the analytical methods ECM used for samples collected throughout the investigation.

5.1 X-RAY FLUORESCENCE METER

ECM field technicians utilized an Innov-X Systems x-ray fluorescence (XRF) meter for screening samples *in-situ* in the field. The XRF meter is a self-calibrating unit which provides readings that are equivalent to Level II analytical data. The XRF results require a correction factor to correlate them with United States Environmental Protection Agency (USEPA) Method 6200. The correction factor is established by collecting quality control samples for laboratory analysis of total metals (EPA Method 6010B). These samples were then plotted against the XRF data to determine a slope, which is the correction factor for the XRF data. The graphs also provide an R-squared (R^2) value (the square of the correlation coefficient), which gives a measure of the reliability of the linear relationship between the x and y values. The R^2 values which are positive values close to “1” indicate excellent linear reliability.

For the purpose of determining the correction factor (slope) and correlation coefficient (R), total metals samples were collected at an approximate ratio of 1 for every 20 planned XRF reading (total metals analysis is further discussed in **Section 2.2**). ECM plotted the total metals sample results versus the XRF data on the graphs present on pages C53 through C59. Only mercury fell within the level of accuracy statistically conclusive to use the XRF data for establishing the extents of mercury impacts in the field (R^2 value 0.7962). Consequently, only the mercury XRF data conform to USEPA Method 6200. Adjusted XRF readings are provided in **Table A-1** and

Table A-2, based on the slope of the line (1.7846) presented in the graph on page C53. This correction factor means that a lab result will be 178.46% of an XRF reading under USEPA Method 6200. For example, if an XRF reading was 100 parts per million (ppm), then the equivalent lab result is expected to be 178.46 mg/kg. To further illustrate this, the corrected mercury XRF data was graphed against the laboratory mercury data (page 60), resulting in a new slope of 1.000.

A discussion of the results of the XRF investigation in **Section 6**.

5.2 TOTAL THRESHOLD LIMIT CONCENTRATIONS

As indicated in the previous section, ECM sampled soil for total metals analysis (**Figure A-2** and **Figure A-3**) to provide quality control information for the XRF data. TestAmerica of San Francisco analyzed the total metals via USEPA Method 6010B for the 17 listed metals in the California Administrative Manual (CAM-17 Metals). These data are presented on **Table A-2** along with the correlating XRF data (see section above for correction factor for mercury).

The California Administrative Manual defines the CAM-17 metals as heavy metals whose Total Threshold Limit Concentrations (TTLCs) are used in California hazardous waste classification by virtue of the total metals concentrations. California Code of Regulations (CCR) Title 22 defines these metals as antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc. The TTLCs are listed in CCR Title 22 Chapter 11, Article 3, Table 2 and are presented on **Table A-2** with the laboratory total metals results. The samples which exceed the TTLCs are highlighted in the table. Note that CCR Title 22 exempts mining wastes from classification as hazardous wastes.

A discussion of the results is presented in **Section 6**.

5.3 ACID-BASE ACCOUNTING AND LEACHABILITY TESTING

5.3.1 Acid-Base Accounting and Mine Waste Classification

ECM used the acid-base accounting (ABA) test, performed by SVL Analytical of Idaho (CDPH-Certification No. 280), to evaluate the leaching potential of overburden materials. An ABA test consists of two measurements:

- acid generation potential (AGP), and
- acid neutralization potential (ANP).

A ratio of ANP to AGP of less than 3 to 1 (<3:1) indicates the waste sample may form an acidic leachate, while a ratio of greater than 3 to 1 (>3:1) indicates the waste will not form acidic leachate[b]. In addition, the difference between ANP and AGP is referred to as the net neutralization potential (NNP). If this difference results in a positive number, the mine waste is predicted to produce alkaline drainage.

ECM completed ABA testing on 11 waste samples. **Table A-3** presents the analysis results and shows a greater than 3:1 ratio for all samples. As such, an acidic leachate is not anticipated

[b] Regional Water Quality Control Board - Central Valley Region. 1986. *Designated Level Methodology*. Updated in 1989, pg. 24.

from the wastes at the Chicago-Research Site. In addition, the difference between ANP and AGP results were positive, further indicative of non-acidic mine drainage.

Based upon these data results, ECM directed TestAmerica to extract the soil samples by the California Waste Extraction Test (WET) using a deionized water extraction solution that would mimic the effects of precipitation to simulate leaching, as described below.

5.3.2 California Waste Extraction Test

The California Department of Toxic Substances Control (DTSC) developed the WET method to simulate waste in a landfill setting with simulated landfill leachates and provide results which are compared to regulatory thresholds to determine toxicity. The WET method utilizes a 10-fold dilution of the solid waste versus waste extract fluid, and requires 48 hours to complete the extraction.

When performing the WET method, a citrate buffer solution is appropriate for any waste which has an ANP to AGP ratio of <3:1, and a deionized (DI) water solution is appropriate for a ratio >3:1. Since all of the samples presented on **Table A-3** have an ANP to AGP ratio of >3:1, the deionized WET extraction method was appropriate to assess the leachability of the waste. The DI/WET results are presented in **Table A-4**. The results of the WET analysis are compared to the DTSC Soluble Threshold Limit Concentrations (STLCs), provided in Title 22 CCR Chapter 11, Article 3, Table 2, and other water quality criteria. **Section 6** discusses the results.

ECM was able to classify the mining waste under the California Mining Waste Regulations (Title 27 CCR, Division 2, Subdivision 1, Chapter 7, Subchapter 1, Section 22480). These regulations establish three groups of mining waste:

- Group A: Includes mining waste that must be managed as hazardous waste provided the Regional Water Quality Control Board (RWQCB) finds that such mining wastes pose a significant threat to water quality.
- Group B: Includes mining wastes that consist contain hazardous wastes that qualify for a variance[c], provided that the RWQCB finds that such mining wastes pose a low risk to water quality, or mining wastes that consist of or contain non-hazardous soluble pollutants of concentrations which exceed water quality objectives for, or could cause, degradation of Waters of the State.
- Group C: Includes mining wastes from which any discharge would comply with the applicable water quality control plan, including any water quality objectives other than turbidity.

Based on the results of the WET testing, the waste rock and soil at the Chicago Research Site is classifiable as a Group C mining waste in regards to leachability to groundwater. Group C mining wastes do not require liners or leachate collection/removal systems, thus enabling a more expeditious removal action. As a field confirmation, groundwater sampling and analysis results indicated that nearby wastes do not leach metals in excess of groundwater quality criteria. Section 6.1.3 below explains this in further detail.

The waste still presents a risk to surface water quality if it is allowed to remain a source of sediment runoff to the Dry Creek and/or other tributaries. Therefore, RWQCB would most likely deem the waste a Group B (variance) mining waste. Although the leachability results do negate

[c] Chapter 11 of Division 4.5 of Title 22 CCR.

the need for a liner, as a Group B mining waste, actions are required to eliminate or sufficiently reduce run-off of mercury-containing waste sediments which can result in toxicity to biota from methylmercury uptake. The mining waste class, and the actions required to address the waste, must be evaluated as part of the Removal Action Alternatives which are presented in the EE/CA Report. Section 3 of the EE/CA Report further details the impacts of the mine waste class on evaluating Removal Action Alternatives.

5.3.3 Toxicity Characteristic Leaching Procedure

USEPA developed the toxicity characteristic leaching procedure (TCLP) to determine if a waste is a Resource Conservation and Recovery Act (RCRA) waste subject to regulation under RCRA Subtitle C. The TCLP method utilizes a 20-fold dilution of the solid waste versus waste extract fluid, utilizes an acetic acid extractant, and requires an 18 hour extraction period.

For the TCLP analysis, there are 8 RCRA metals required, rather than the 17 CAM metals. These metals include arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. The results of the TCLP analysis are compared to the Maximum Concentration of Contaminants for the Toxicity Characteristic, provided in CCR Title 22 Chapter 11, Article 3, Table 1. These regulatory levels are also presented on **Table A-5**. For comparative purposes, the correlating WET data results were also provided on **Table A-5**. The sample locations for these data are illustrated on **Figure A-2** and **Figure A-3.** A discussion of the results is presented in **Section 6**.

6 SUMMARY OF RESULTS

The following sections summarize the analytical results for each of the media sampled at the Chicago Research Site. These results, and their impact on site activities and their effect on selection of a removal action, are further discussed in Section 3 of the EE/CA Report.

6.1.1 Soil, Waste, and Sediment

The table on the following page summarizes ECM's rationale for utilizing select laboratory methods, and presents the main result(s) and/or determination(s) made from the analytical results.

Method	Rationale	Result / Determination
Method 6010B CAM-17 Metals	Determining a correction factor (slope) and correlation coefficient (R) for filed collected XRF metals data.	XRF correction factor for mercury of 1.7846 based on slope of line (XRF:lab)
Method 6010B CAM-17 Metals	Comparison of total metals data to the CAM-17 heavy metals whose TTLCs are used in California waste classification.	Some of the soil and waste samples exceed the TTLCs for their respective metals.
Acid-Base Accounting	A ratio of ANP to AGP of <3:1 indicates an acidic leachate, while a ratio of >3:1 indicates an acidic leachate will not be formed. In addition, the results determine which leachate will be used in the WET analysis.	Non-acidic leachate. The waste rock and soil is classifiable as a Group C mining waste. Group C mining wastes do not require liners or leachate collection/removal systems.

Method	Rationale	Result / Determination
California WET Method	A DI water solution was used since the ABA ratio >3:1. The test was performed to simulate waste in a landfill with simulated landfill leachates. Results are compared to STLCs to determine toxicity.	Only one exceedance was identified, in a waste sample collected at Research Mine. The exceedance was for mercury. Nearby well RW-1 did not exhibit mercury exceedances, indicating that the waste does not pose a risk to groundwater quality.
TCLP	Used to determine if a waste is a RCRA waste subject to regulation under RCRA Subtitle C. The data are compared to the RCRA Maximum Concentration of Contaminants for the Toxicity Characteristic. Note that the Bevill Amendment exempts mining wastes from regulation under RCRA.	No exceedances were identified in any of the samples.

- **Table A-1** illustrates all of the XRF data. The corrected mercury data column is the driver for the site remediation of metals. Exceedances of the mercury action level (15.7 mg/kg) are identified in bold on the table and represent exceedances of background levels, as established in the Human Health Risk Assessment presented in **Appendix C** of the EE/CA Report and summarized in Section 4.1 of the EE/CA.
- **Table A-2** presents the CAM-17 results compared to the TTLCs. There are exceedances of both nickel and mercury. There is no instance in which there is a nickel exceedance without a corresponding mercury exceedance. As such, this bolsters the plan to use mercury as the driver in any proposed removal action. Mercury as a driver for removal action is discussed further in Section 3 and Section 4 of the EE/CA.
- **Table A-3** summarizes the ABA results. As previously indicated, non-acidic mine drainage is expected at the site. Based upon the ABA data results, the waste rock and soil at the Chicago Research Site is a Group C mining waste, which does not require a liner or leachate collection/removal systems.
- **Table A-4** summarizes the WET method data. As illustrated, only one sample (RMT8b-15) exceeded an STLC. This was a trench sample collected from a waste/tailings pile at the Research Mine. The mercury result of 2.3 mg/L (STLC = 0.2 mg/L) in the waste sample is not indicative of a leaching concern for two reasons. First, nearby well RW-1 was non-detect for mercury, showing that groundwater is not impacted at Research Mine. And second, this sample had an XRF reading of 1,115.63 mg/kg. However, a deeper XRF reading in this same trench (RMT8j-72) had an XRF result of 0.23 mg/kg, indicative that spot locations may have low-level exceedances, but overall the mine waste does not present a leaching issue. This is further discussed in Section 2.5.5 and Section 3.4.2 of the EE/CA Report.
- **Table A-5** presents the TCLP results. There were no exceedances of the regulatory level for the TCLP analytical data.

The impacts these results have on selecting a removal action is presented in Section 4 of the EE/CA Report where risk levels are presented and discussed in detail.

6.1.2 Surface Water

Sample CMUS is the only surface water sample to exceed the regulatory guidance level presented on **Table A-6** for antimony, arsenic, cadmium, and lead. The guidance level used on the table is the BLM Human Risk Management Criteria for Metals in Surface Water at Mining Sites for a Camper. This guidance level is a screening value, which is used to determine if additional assessment is necessary. ECM performed additional assessment as part of the risk assessment presented in the EE/CA Report. BLM also has levels for a Boater and Swimmer, however, in almost all cases, the most conservative screening number was listed for the Camper.

Sample CMUS was the furthest "upstream" surface water sample, collected upstream of the Chicago Mine. It represents background surface water quality. It is unlikely the Chicago Mine could be the source at this location. However, if the Chicago Mine were to be the source of the metals identified in this sample, a removal action would have to target the source (waste and soil) while address surface water concerns. This is discussed in further detail in Section 4 of the EE/CA Report.

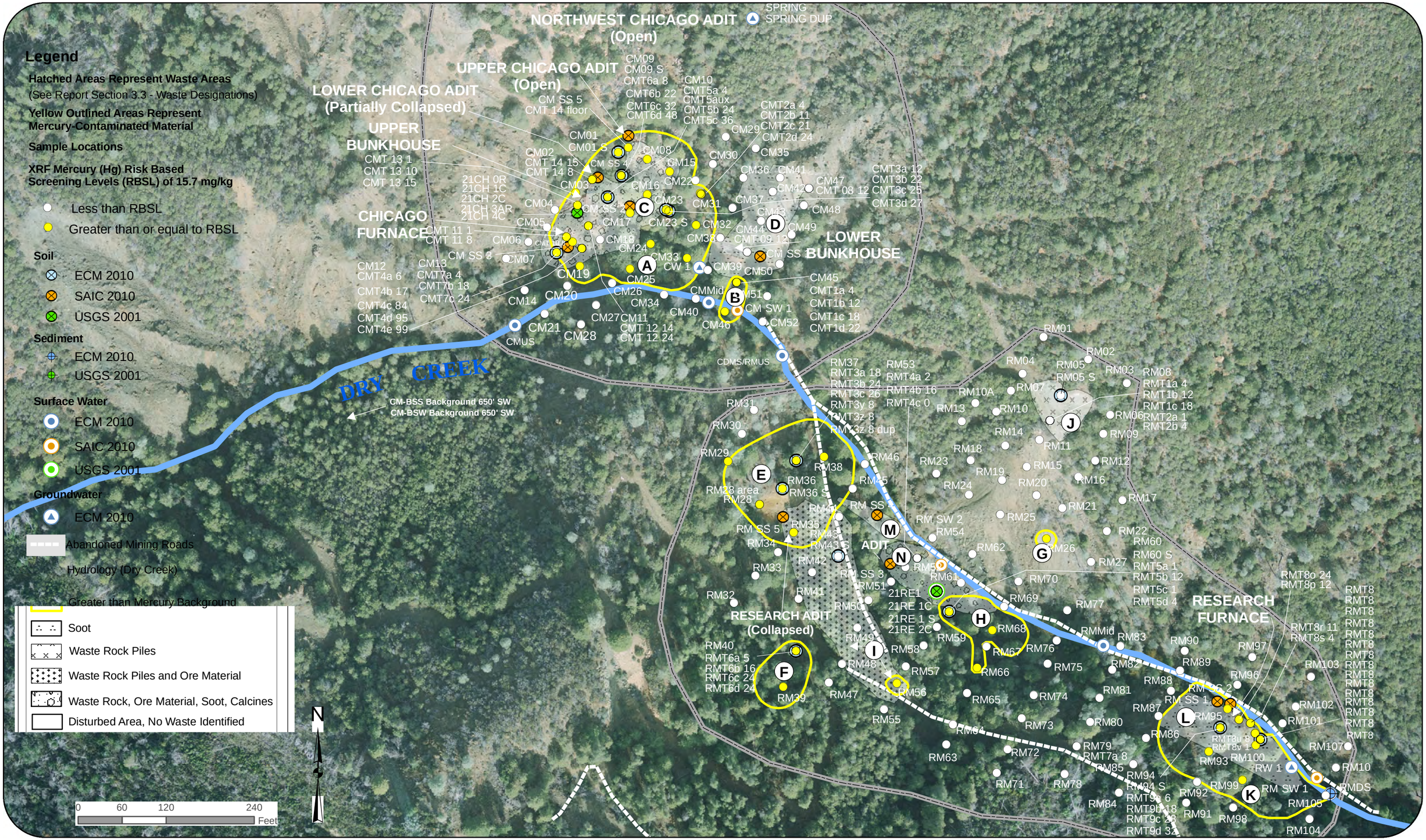
6.1.3 Groundwater

Groundwater data were collected from CW-1 and RW-1. The analytical results from these samples are illustrated on **Table A-6** and compared to the California Environmental Protection Agency (Cal-EPA) Maximum Contaminant Levels (MCLs) and Cal-EPA Public Health Goals (PHGs). There were no exceedances of any of the regulatory levels for any metal in either well. Because there are no exceedances of the regulatory levels for groundwater, it was not necessary to address groundwater in the risk assessment. As such, risk-based numbers were not calculated for groundwater. These results also show that any mine waste leachate resulting from precipitation attenuates prior to causing significant impacts to groundwater. Because the mine waste does not pose a risk to groundwater, a waste repository constructed on site would not need a bottom liner and leachate collection and removal system.

7 TOPOGRAPHIC SURVEY

ECM contracted with SHN Engineering (SHN) to complete a survey of sample locations and mine characteristics (i.e.: adits, furnaces, springs, etc.) upon completion of field activities. The survey work involved a total of three visits to the site (initial site visit, fly-over, and follow-up visit). The initial phase included a site visit to establish the locations of select mine characteristics to be used in the fly-over/aerial survey (second phase). Upon completion of the aerial survey, SHN produced a 2-foot contour interval topographic map of the site. SHN returned to the mines to survey in select mine features, reference points, wells, and node and trench locations. SHN used a Real Time Kinematics (RTK) system, with a GPS base station receiver and mobile GPS unit.

ECM completed additional onsite mapping using direct measurement to facilitate volume calculations. Sample locations were mapped and field referenced using a computer grid overlay on an aerial photo map. Obvious visible features were used to calibrate and align the grid. A Brunton Compass and calibrated, flexible, linear measuring device was used to accurately measure sample location distance and direction.



Notes:
Locations for SAIC and USGS samples based on SAIC report entitled: Removal Site Evaluation Report, Chicago/Research Mercury Mine, July 2010.
Risk Based Screening Level (RBSL) background value (15.7 mg/kg) is used for mercury since it is greater than calculated RBSL.

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2010 EE/CA Field Investigation
XRF Samples
The Chicago Research Site
Lake County, California
Engineering Evaluation/Cost Analysis Report
The Chicago Research Site

Figure
A-1

Path: B:\BLM\Chicago Research\ARCGIS\MXD\FigA1-2010 EECA Fld Inv XRF Samples_ChiRes_11x17.mxd Chkd By: Joey Pace Date Revised: 10/13/2011 Proj Mgr: A. Campbell, P.E. Project: BLM Chicago Research Site EE/CA

Notes:
Locations for SAIC and USGS samples based on SAIC report entitled:
Removal Site Evaluation Report, Chicago/Research Mercury Mine, July 2010.

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Laboratory Sample Locations
Chicago Mine
Lake County, California

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site

Figure
A-2

Path: B:\BLM\Chicago Research\ARCGIS\MXD\FigA2-Sample Locations_Chi_11x17.MXD Drafter: SMK Chkd By: A. Campbell. P.E. Date Revised: 09/28/2011 Proj Mgr: A. Campbell, P.E. Project: BLM Chicago Research Site EE/CA

Notes:
Locations for SAIC and USGS samples based on SAIC report entitled:
Removal Site Evaluation Report, Chicago/Research Mercury Mine, July 2010.

US Department of the Interior Bureau of Land Management California State Office 2800 Cottage Way, Suite W-1834 Sacramento CA, 95825	**ENVIRONMENTAL COST MANAGEMENT, INC.** *Managing Cost and Liability* 3525 Hyland Avenue, Suite 200 Costa Mesa CA 92626 Tel: (714) 662-2759 Fax: (714) 662-2758 www.ecostmanage.com	**Laboratory Sample Locations** **Research Mine** **Lake County, California** Engineering Evaluation/Cost Analysis Report The Chicago Research Site	Figure **A-3**

Path: B:\BLM\Chicago Research\ARCGIS\MXD\FigA-3-Sample Locations_Res_11x17.MXD Drafter: SMK Chkd By: A. Campbell, P.E. Date Revised: 09/22/2011 Proj Mgr: A. Campbell, P.E. Project: BLM Chicago Research Site EE/CA

Table A-1
X-Ray Fluorescence Field Data

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site

Node Name	General Lithology; Observations	Date	Depth (feet bgs)	Sb	As	Ba	Cd	Cr	Co	Cu	Au	Pb	Hg	Hg Corrected**	Mo	Ni	Ag	Th	Zi
				Results in milligrams per kilogram (mg/kg)															
CHICAGO MINE SOIL SAMPLES																			
CM-01	Red brown soil at bedrock; on rocky ridge above upper main mine opening.	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	11,439.78	1,246.19	<0.25	<LOD	31.02	540.20	**964.04**	<0.25	3,413.88	<0.25	<0.5	47.22
CM-02	Brown-red soil; at lower main mine opening,	11/16/10	0.00	<0.5	<0.25	<0.1	51.92	2,132.53	582.57	<0.25	<LOD	<0.25	10.55	**18.83**	<0.25	2,048.92	<0.25	<0.5	27.32
CM-03	Red soil; collected in area of dense brush	11/16/10	0.00	<0.5	<0.25	<0.1	53.38	3,937.83	531.54	<0.25	<LOD	11.64	29.45	**52.56**	<0.25	2,248.99	<0.25	<0.5	47.54
CM-04	Brown soil and talus; At wash basin and drum;	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	740.40	331.58	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,550.01	<0.25	<0.5	24.77
CM-05	red brown soil and weathered rock; talus slope	11/16/10	0.00	<0.5	<0.25	<0.1	49.09	1,798.87	505.18	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,872.43	<0.25	<0.5	21.72
CM-06	Talus slope, gravel to 1" with dark brown soil	11/16/10	0.00	<0.5	<0.25	<0.1	44.61	445.02	399.23	<0.25	<LOD	8.55	<0.25	0.23	<0.25	1,023.33	<0.25	<0.5	21.15
CM-07	Boulder outcrop above stream	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	2,695.15	383.59	<0.25	<LOD	35.86	<0.25	0.23	<0.25	2,070.23	<0.25	<0.5	68.35
CM-08	Red brown organic soil; Side of hill, below main mine entrance	11/16/10	0.00	<0.5	<0.25	<0.1	44.31	4,337.89	777.18	<0.25	<LOD	40.28	284.31	**507.37**	<0.25	2,492.12	<0.25	<0.5	63.75
CM-09	Brown silty soil on interior slope of pit	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	5,812.32	1,126.38	<0.25	<LOD	<0.25	696.48	**1,242.93**	<0.25	2,995.21	<0.25	<0.5	36.57
CM-10	Red brown soil; 10' west of ore shoot, outer slope of test pit	11/16/10	0.00	<0.5	<0.25	<0.1	43.47	2,852.05	449.59	<0.25	<LOD	<0.25	271.17	**483.94**	<0.25	2,306.65	<0.25	<0.5	38.95
CM-11	Red brown gravelly soil; on top of main mining bench area, next to railroad tracks	11/16/10	0.00	<0.5	<0.25	<0.1	66.35	3,241.46	957.47	<0.25	<LOD	15.94	52.71	**94.08**	<0.25	2,929.78	<0.25	<0.5	73.33
CM-12	Red brown soil; Steep tailing slope, 15' below furnace	11/16/10	0.00	<0.5	<0.25	<0.1	59.90	7,480.55	606.95	45.89	4.92	36.33	116.85	**208.53**	<0.25	3,403.07	<0.25	<0.5	69.13
CM-13	Dark brown soil on tailing slope; with mining debris.	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	1,111.28	393.50	<0.25	<LOD	<0.25	10.60	**18.92**	<0.25	1,756.38	<0.25	<0.5	54.27
CM-14	1/4" to 1" gravel; Near tributary on NW edge of Dry Creek	11/16/10	0.00	<0.5	6.01	359.48	48.23	1,333.46	145.24	21.53	<LOD	7.91	<0.25	0.23	<0.25	564.99	<0.25	<0.5	65.72
CM-15	Red brown organic soil with some tailings	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	2,903.08	766.07	<0.25	<LOD	<0.25	217.94	**388.94**	<0.25	2,527.00	<0.25	<0.5	23.28
CM-16	Red brown organic soil	11/16/10	0.00	<0.5	<0.25	<0.1	62.05	6,619.31	970.86	<0.25	<LOD	12.07	404.77	**722.36**	<0.25	4,209.36	<0.25	<0.5	39.52
CM-17	Red-brown organic soil with cobbles to 12"	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	6,218.66	683.88	<0.25	<LOD	15.47	149.55	**266.89**	<0.25	2,524.12	<0.25	<0.5	64.09
CM-18	1-2" exposed gravel; Under collapsed mine structure	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	1,209.66	254.53	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,160.06	<0.25	<0.5	129.42
CM-19	Dark brown organic soil with cobbles	11/16/10	0.00	<0.5	<0.25	<0.1	44.63	1,387.17	542.48	<0.25	<LOD	<0.25	29.36	**52.40**	<0.25	2,208.92	<0.25	<0.5	31.01
CM-20	Brown gravelly soil	11/16/10	0.00	<0.5	<0.25	<0.1	45.57	1,476.25	507.31	<0.25	<LOD	6.49	<0.25	0.23	<0.25	2,195.94	<0.25	<0.5	23.23
CM-21	Dark brown organic soil	11/16/10	0.00	<0.5	<0.25	<0.1	66.81	1,432.37	654.72	<0.25	<LOD	24.08	<0.25	0.23	<0.25	1,564.23	<0.25	<0.5	29.63
CM-22	Moist medium brown organic soil	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	697.58	490.00	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,400.44	<0.25	<0.5	24.76
CM-23	Moist red- brown clayey; organic soil	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	10,297.48	769.53	<0.25	7.67	23.83	491.11	**876.44**	<0.25	3,438.99	<0.25	<0.5	54.92
CM-24	Slight moist, 1-4" cobbles in dry stream bed with red-brown clay	11/16/10	0.00	<0.5	<0.25	<0.1	46.63	3,181.23	390.68	<0.25	<LOD	23.58	192.00	**342.64**	<0.25	1,151.02	<0.25	<0.5	102.26
CM-25	Moist red-brown to gray organic clayey soil	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	1,433.07	433.28	<0.25	<LOD	<0.25	46.46	**82.92**	<0.25	2,135.39	<0.25	<0.5	28.97
CM-26	Gray brown gravelly soil; Steep erosion cut bank, ~10' above Dry Creek	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	360.75	264.09	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,029.78	<0.25	<0.5	<1.0
CM-27	Gray brown gravelly soil	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	535.79	407.87	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,233.28	<0.25	<0.5	<1.0
CM-28	Bedrock, ultramafic	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	242.12	242.05	<0.25	<LOD	147.40	<0.25	0.23	10.66	488.76	<0.25	<0.5	37.33
CM-29	Dark brown gravelly soil; just over tributary	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,759.33	536.58	<0.25	<LOD	8.99	<0.25	0.23	<0.25	1,829.33	<0.25	<0.5	29.24
CM-30	Brown soil	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	4,458.71	442.67	<0.25	<LOD	8.20	<0.25	0.23	<0.25	1,693.18	<0.25	<0.5	39.77
CM-31	Red-brown soil; 20' west of tributary, at crossing	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	4,298.96	612.54	<0.25	<LOD	58.47	231.96	**413.96**	<0.25	2,159.47	<0.25	<0.5	74.91

Table A-1
X-Ray Fluorescence Field Data

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site

Node Name	General Lithology; Observations	Date	Depth (feet bgs)	Sb	As	Ba	Cd	Cr	Co	Cu	Au	Pb	Hg	Hg Corrected**	Mo	Ni	Ag	Th	Zi
				Results in milligrams per kilogram (mg/kg)															
CM-32	Dark brown soil; est side of tributary, slight incline	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,125.55	385.51	<0.25	<LOD	44.83	13.38	**23.88**	<0.25	857.19	<0.25	<0.5	48.15
CM-33	Red brown gravelly soil; On old road ~20' from well CW-01	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	2,957.42	265.03	<0.25	<LOD	15.27	37.91	**67.65**	<0.25	2,093.27	<0.25	<0.5	107.02
CM-34	gravelly soil; Side of cliff across Dry Creek	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,122.24	284.89	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,480.42	<0.25	<0.5	24.14
CM-35	Dark brown soil with large gravel	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	763.74	392.12	18.79	<LOD	<0.25	<0.25	0.23	<0.25	1,300.14	<0.25	<0.5	28.12
CM-36	Dark brown gravelly soil; steep slope, 20' up from tributary on east side.	11/17/10	0.00	<0.5	<0.25	<0.1	50.55	1,091.45	390.14	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,714.57	<0.25	<0.5	20.86
CM-37	Dark brown gravelly soil; steep hill	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,234.17	529.34	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,339.42	<0.25	<0.5	18.74
CM-38	Gravel; flat at bunkhouse	11/17/10	0.00	<0.5	11.63	<0.1	<0.25	1,154.72	479.15	<0.25	<LOD	88.33	<0.25	0.23	<0.25	1,534.35	<0.25	<0.5	115.80
CM-39	Brown gravelly soil; 15' from well CW-01	11/17/10	0.00	<0.5	<0.25	<0.1	54.39	2,070.35	286.67	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,505.51	<0.25	<0.5	22.81
CM-40	Weathered red brown bedrock; Side of cliff across Dry Creek	11/17/10	0.00	<0.5	<0.25	<0.1	54.74	2,784.87	271.94	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,519.19	<0.25	<0.5	30.29
CM-41	Tailings with light brown soil; top of slope at upper test pit.	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,356.70	259.73	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,882.39	<0.25	<0.5	14.40
CM-42	Light brown soil; up steep ridge towards upper test pit	11/17/10	0.00	<0.5	<0.25	<0.1	45.17	1,447.44	546.97	<0.25	<LOD	6.98	<0.25	0.23	<0.25	1,927.19	<0.25	<0.5	26.20
CM-43	Brown gravelly soil; steep slope up from bunkhouse to north	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,012.12	249.78	<0.25	<LOD	108.17	<0.25	0.23	<0.25	1,342.84	<0.25	<0.5	44.42
CM-44	Dark brown gravelly soil; at bunkhouse	11/17/10	0.00	<0.5	<0.25	<0.1	44.55	2,462.86	451.53	<0.25	<LOD	76.57	<0.25	0.23	<0.25	2,136.86	<0.25	<0.5	270.49
CM-45	Dark Brown gravelly soil	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	3,486.76	516.25	<0.25	<LOD	19.66	40.00	**71.38**	<0.25	1,889.05	<0.25	<0.5	147.29
CM-46	Large boulders and dark brown soil; at base of cliff	11/17/10	0.00	<0.5	<0.25	327.66	45.90	2,654.11	340.60	<0.25	<LOD	<0.25	14.17	**25.30**	<0.25	1,109.41	<0.25	<0.5	39.55
CM-47	Weathered rock and light brown soil; in upper test pit	11/17/10	0.00	<0.5	<0.25	<0.1	41.50	1,620.77	423.30	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,860.08	<0.25	<0.5	31.43
CM-48	Dark brown organic soil	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	<0.25	104.43	<0.25	<LOD	13.81	<0.25	0.23	13.46	74.69	<0.25	<0.5	31.64
CM-49	Light brown gravelly soil/eroded tailings from upper test pit.	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,828.31	346.64	26.83	<LOD	<0.25	<0.25	0.23	<0.25	2,730.46	<0.25	<0.5	30.15
CM-50	Dark brown soil with cobbles and stream rolled boulders; down gully from upper test pit, level with bunkhouse flat.	11/17/10	0.00	<0.5	<0.25	301.33	<0.25	2,721.62	238.84	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,991.84	<0.25	<0.5	28.34
CM-51	Dark brown organic soil; along gully next to old road.	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	2,357.80	450.62	37.73	<LOD	11.79	<0.25	0.23	<0.25	2,034.78	<0.25	<0.5	88.82
CM-52	Dark brown organic soil; along former road next to Dry Creek	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	3,615.34	347.99	<0.25	<LOD	8.58	<0.25	0.23	<0.25	2,080.47	<0.25	<0.5	42.52
CHICAGO MINE TRENCH SAMPLES																			
CMT1a-4	Trench Sample*	11/29/10	0.33	<0.5	<0.25	<0.1	<0.25	3,020.05	536.70	<0.25	<LOD	<0.25	12.54	**22.37**	<0.25	1,547.96	<0.25	<0.5	36.02
CMT1b-12	Trench Sample*	11/29/10	1.00	<0.5	<0.25	<0.1	<0.25	2,453.98	529.17	27.55	<LOD	<0.25	22.56	**40.27**	<0.25	1,465.16	<0.25	<0.5	44.69
CMT1c-18	Trench Sample*	11/29/10	1.50	<0.5	<0.25	<0.1	45.52	1,305.39	442.92	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,476.80	<0.25	<0.5	16.21
CMT1d-22	Trench Sample*	11/29/10	1.83	<0.5	<0.25	<0.1	<0.25	1,254.07	405.05	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,819.97	<0.25	<0.5	17.75
CMT2a-4	Trench Sample*	11/29/10	0.33	<0.5	<0.25	<0.1	<0.25	1,682.23	566.14	<0.25	<LOD	29.40	42.03	**75.00**	<0.25	1,723.22	<0.25	<0.5	42.02
CMT2b-11	Trench Sample*	11/29/10	0.92	<0.5	<0.25	<0.1	<0.25	3,690.00	765.53	<0.25	<LOD	143.45	43.80	**78.17**	<0.25	2,386.19	<0.25	<0.5	59.80
CMT2c-21	Trench Sample*	11/29/10	1.75	<0.5	<0.25	<0.1	<0.25	2,328.51	785.42	<0.25	<LOD	6.10	<0.25	0.23	<0.25	2,301.81	<0.25	<0.5	46.95
CMT2d-24	Trench Sample*	11/29/10	2.00	<0.5	<0.25	<0.1	<0.25	1,341.52	545.49	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,968.17	<0.25	<0.5	35.51
CMT3a-12	Trench Sample*	11/29/10	1.00	<0.5	<0.25	<0.1	<0.25	8,850.27	833.88	<0.25	<LOD	<0.25	382.28	**682.22**	<0.25	3,349.94	<0.25	<0.5	48.74

Table A-1
X-Ray Fluorescence Field Data

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site

Node Name	General Lithology; Observations	Date	Depth (feet bgs)	Sb	As	Ba	Cd	Cr	Co	Cu	Au	Pb	Hg	Hg Corrected**	Mo	Ni	Ag	Th	Zi
				Results in milligrams per kilogram (mg/kg)															
CMT3b-22	Trench Sample*	11/29/10	1.83	<0.5	<0.25	<0.1	<0.25	1,514.71	279.49	18.35	<LOD	<0.25	10.31	**18.40**	<0.25	854.42	<0.25	<0.5	38.35
CMT3c-25	Trench Sample*	11/29/10	2.08	<0.5	<0.25	<0.1	<0.25	523.66	149.64	<0.25	<LOD	5.91	<0.25	0.23	<0.25	604.23	<0.25	<0.5	43.53
CMT3d-27	Trench Sample*	11/29/10	2.25	<0.5	<0.25	<0.1	<0.25	207.40	138.94	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	381.80	<0.25	<0.5	37.09
CMT4a-6	Trench Sample*	11/29/10	0.50	<0.5	<0.25	<0.1	39.89	2,321.52	674.35	<0.25	<LOD	8.89	35.42	**63.21**	<0.25	2,676.19	<0.25	<0.5	31.53
CMT4b-17	Trench Sample*	11/29/10	1.42	<0.5	<0.25	<0.1	<0.25	2,116.25	360.36	<0.25	<LOD	131.66	27.29	**48.70**	<0.25	1,482.49	<0.25	<0.5	24.56
CMT4c-84	Trench Sample*	11/29/10	2.42	<0.5	<0.25	<0.1	<0.25	1,329.91	408.49	<0.25	<LOD	8.32	64.36	**114.85**	<0.25	1,374.12	<0.25	<0.5	19.65
CMT4d-95	Trench Sample*	11/29/10	3.33	<0.5	<0.25	<0.1	<0.25	486.39	615.22	<0.25	<LOD	<0.25	10.71	**19.12**	<0.25	662.02	<0.25	<0.5	16.62
CMT4e-99	Trench Sample*	11/29/10	3.66	<0.5	<0.25	<0.1	<0.25	857.10	473.57	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,667.78	<0.25	<0.5	22.54
CMT5a-4	Trench Sample*	11/30/10	0.33	<0.5	4.59	<0.1	<0.25	2,132.13	432.93	<0.25	<LOD	<0.25	231.57	**413.25**	<0.25	2,275.15	<0.25	<0.5	30.41
CMT5aux	Trench Sample*	11/30/10	0.00	<0.5	<0.25	<0.1	<0.25	2,034.28	808.60	<0.25	<LOD	21.70	12.83	**22.90**	<0.25	1,772.34	<0.25	<0.5	95.16
CMT5b-24	Trench Sample*	11/30/10	2.00	<0.5	<0.25	<0.1	<0.25	1,441.11	540.52	<0.25	<LOD	<0.25	15.82	**28.23**	<0.25	1,484.69	<0.25	<0.5	26.09
CMT5b-24	Trench Sample*	11/30/10	2.00	<0.5	<0.25	<0.1	<0.25	2,035.50	633.15	<0.25	<LOD	<0.25	31.46	**56.14**	<0.25	4,663.73	<0.25	<0.5	10.79
CMT5b-24	Trench Sample*	11/30/10	2.00	<0.5	<0.25	<0.1	<0.25	2,178.88	447.95	<0.25	<LOD	<0.25	98.49	**175.77**	<0.25	3,404.59	<0.25	<0.5	14.57
CMT5c-36	Trench Sample*	11/30/10	3.00	<0.5	<0.25	<0.1	<0.25	2,623.72	399.90	<0.25	<LOD	<0.25	39.06	**69.70**	<0.25	2,665.43	<0.25	<0.5	10.74
CMT5c-36	Trench Sample*	11/30/10	3.00	<0.5	<0.25	<0.1	<0.25	97.57	<0.25	<0.25	<LOD	<0.25	21.18	**37.80**	<0.25	455.87	<0.25	<0.5	<1.0
CMT5c-36	Trench Sample*	11/30/10	3.00	<0.5	<0.25	<0.1	<0.25	332.11	788.94	<0.25	<LOD	<0.25	14.44	**25.77**	<0.25	2,288.43	<0.25	<0.5	11.47
CMT6a-8	Trench Sample*	11/30/10	0.67	<0.5	<0.25	<0.1	<0.25	4,826.25	993.61	37.94	21.63	<0.25	1,541.10	**2,750.25**	<0.25	3,054.70	<0.25	<0.5	26.68
CMT6b-22	Trench Sample*	11/30/10	1.83	<0.5	<0.25	<0.1	<0.25	13,114.07	1,955.96	36.46	<LOD	20.71	232.99	**415.79**	<0.25	4,139.01	<0.25	<0.5	44.68
CMT6c-32	Trench Sample*	11/30/10	2.67	<0.5	<0.25	<0.1	<0.25	4,801.04	953.18	<0.25	<LOD	<0.25	236.30	**421.71**	<0.25	2,709.63	<0.25	<0.5	22.45
CMT6d-48	Trench Sample*	11/30/10	4.00	<0.5	<0.25	<0.1	<0.25	908.64	270.30	56.91	<LOD	<0.25	<0.25	0.23	<0.25	1,562.70	<0.25	<0.5	<1.0
CMT7a-4	Trench Sample*	11/30/10	0.33	<0.5	<0.25	<0.1	<0.25	696.88	522.76	<0.25	<LOD	10.20	14.58	**26.03**	<0.25	1,549.65	<0.25	<0.5	52.67
CMT7b-18	Trench Sample*	11/30/10	1.50	<0.5	<0.25	<0.1	<0.25	1,163.43	425.49	<0.25	<LOD	5.66	<0.25	0.23	<0.25	1,515.24	<0.25	<0.5	26.13
CMT7c-24	Trench Sample*	11/30/10	2.00	<0.5	<0.25	<0.1	<0.25	614.52	345.48	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,289.95	<0.25	<0.5	22.65
CMT-08-12	Trench Sample*	12/01/10	1.00	<0.5	<0.25	<0.1	<0.25	710.30	474.75	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,198.19	<0.25	<0.5	16.19
CMT-09-12	Trench Sample*	12/01/10	1.00	<0.5	<0.25	<0.1	<0.25	1,569.51	698.87	18.80	<LOD	8.27	<0.25	0.23	<0.25	1,997.92	<0.25	<0.5	59.90
CMT-10-8	Trench Sample*	12/01/10	0.66	<0.5	<0.25	<0.1	<0.25	1,530.28	786.88	30.72	<LOD	41.65	28.50	**50.86**	<0.25	1,478.57	<0.25	<0.5	52.28
CMT-11a-1	Trench Sample*	12/01/10	0.08	<0.5	<0.25	<0.1	<0.25	1,116.62	715.05	19.97	<LOD	<0.25	41.80	**74.60**	<0.25	1,570.03	<0.25	<0.5	57.37
CMT-11b-8	Trench Sample*	12/01/10	0.66	<0.5	6.08	<0.1	<0.25	1,140.32	468.07	<0.25	9.02	12.58	457.45	**816.37**	<0.25	1,419.45	<0.25	<0.5	53.79
CMT-12a-14	Trench Sample*	12/01/10	1.17	<0.5	<0.25	<0.1	<0.25	1,399.58	544.28	17.67	<LOD	<0.25	749.88	**1,338.23**	<0.25	1,725.40	<0.25	<0.5	22.82
CMT-12b-24	Trench Sample*	12/01/10	2.00	<0.5	<0.25	<0.1	<0.25	1,083.95	529.40	<0.25	<LOD	11.62	60.96	**108.79**	<0.25	1,417.76	<0.25	<0.5	23.64
CMT-13a-1	Trench Sample*	12/01/10	0.08	<0.5	<0.25	<0.1	<0.25	1,958.62	680.32	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,068.83	<0.25	<0.5	22.94
CMT-13b-10	Trench Sample*	12/01/10	0.83	<0.5	<0.25	<0.1	<0.25	2,033.27	553.72	21.58	<LOD	12.46	104.25	**186.05**	<0.25	1,924.56	<0.25	<0.5	24.83
CMT-13c-15	Trench Sample*	12/01/10	1.25	<0.5	<0.25	<0.1	<0.25	1,443.25	412.10	<0.25	<LOD	49.15	12.11	**21.62**	<0.25	1,125.68	<0.25	<0.5	32.02
CMT-14a-8	Trench Sample*	12/01/10	0.66	<0.5	<0.25	<0.1	<0.25	2,975.67	955.22	30.19	<LOD	<0.25	16.37	**29.21**	<0.25	2,227.63	<0.25	<0.5	34.14
CMT-14b-15	Trench Sample*	12/01/10	1.25	<0.5	<0.25	<0.1	49.88	4,718.92	934.45	21.74	<LOD	<0.25	12.83	**22.90**	<0.25	2,130.83	<0.25	<0.5	33.35
CMT-14c-floor	Trench Sample*	12/01/10	0.00	<0.5	<0.25	<0.1	<0.25	4,054.60	1,115.89	40.70	<LOD	<0.25	62.04	**110.72**	<0.25	2,579.16	<0.25	<0.5	123.64
CHICAGO MINE SEDIMENT SAMPLES																			
CM-Mid (sediment sample)	Sediment Sample collected at flowing tributary below CW-1 well	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	942.93	474.69	<0.25	2.83	<0.25	<0.25	0.23	<0.25	1,560.01	<0.25	<0.5	38.04

Table A-1
X-Ray Fluorescence Field Data

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site

Node Name	General Lithology; Observations	Date	Depth (feet bgs)	Sb	As	Ba	Cd	Cr	Co	Cu	Au	Pb	Hg	Hg Corrected**	Mo	Ni	Ag	Th	Zi
				Results in milligrams per kilogram (mg/kg)															
CMUS (sediment sample)	Sediment Sample collected at flowing tributary upstream of mine	11/16/10	0.00	<0.5	<0.25	296.38	<0.25	548.41	344.36	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,242.87	<0.25	<0.5	41.09
CMDS/RMUS (sediment sample)	Sediment Sample, collected at Dry Creek, at road crossing, downstream of Chicago Mine (upstream of the Research Mine)	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	2,411.23	372.15	27.36	<LOD	<0.25	<0.25	0.23	<0.25	1,829.88	<0.25	<0.5	33.60
RESEARCH MINE SOIL SAMPLES																			
RM-01	Light red to gray brown soil; on hill	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	988.51	538.82	<0.25	<LOD	14.93	<0.25	0.23	<0.25	1,648.12	<0.25	<0.5	49.24
RM-02	Light brown soil; on cliff below rock outcrop.	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	2,713.63	607.23	<0.25	<LOD	18.21	<0.25	0.23	<0.25	2,304.55	<0.25	<0.5	53.23
RM-03	Brown soil with weathered rock; uphill thru thick small trees	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	646.05	246.54	<0.25	<LOD	8.10	<0.25	0.23	<0.25	1,178.79	<0.25	<0.5	22.57
RM-04	Red brown soil; top of road to test pit	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,455.52	407.04	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,903.68	<0.25	<0.5	31.94
RM-05	Light tan soil with tailings; in test pit on slope above	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,387.38	375.78	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,282.65	<0.25	<0.5	13.56
RM-06	Light brown soil, tailings and weathered rock; in test pit, next to brush at edge	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,430.70	372.12	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,926.80	<0.25	<0.5	19.32
RM-07	Dark brown gravelly soil;	11/17/10	0.00	<0.5	7.36	<0.1	<0.25	664.46	441.64	<0.25	<LOD	46.76	<0.25	0.23	<0.25	1,265.14	<0.25	<0.5	39.99
RM-08	Light brown gravelly soil and tailings;	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,399.19	531.10	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,961.23	<0.25	<0.5	24.30
RM-09	Dark brown soil; south of tailing erosion area, in gully	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	422.09	130.26	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	700.97	<0.25	<0.5	10.92
RM-10	Dark brown soil with some tailings on surface; steep heavily vegetated slope	11/17/10	0.00	<0.5	<0.25	<0.1	51.90	2,112.31	555.31	<0.25	<LOD	6.43	<0.25	0.23	<0.25	1,892.92	<0.25	<0.5	50.71
RM-10A	Dark brown soil with natural weathered talus	11/17/10	0.00	<0.5	<0.25	<0.1	45.08	1,274.05	502.78	<0.25	<LOD	34.29	<0.25	0.23	<0.25	1,763.16	<0.25	<0.5	53.19
RM-11	Light brown-tan tailings and soil;	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,006.94	343.56	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,177.23	<0.25	<0.5	10.58
RM-12	Dark brown organic soil; Down steep slope, thick vegetation	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,114.45	304.54	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,185.73	<0.25	<0.5	23.26
RM-13	Dark brown organic soil	11/17/10	0.00	<0.5	<0.25	<0.1	36.60	945.48	358.96	<0.25	<LOD	10.04	<0.25	0.23	<0.25	1,199.69	<0.25	<0.5	36.24
RM-14	Light brown-tan soil and tailings; very steep slope	11/17/10	0.00	<0.5	5.10	<0.1	<0.25	984.25	359.41	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,383.03	<0.25	<0.5	13.65
RM-15	Light brown-tan soil and tailings; extreme slope	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,137.90	285.53	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,862.37	<0.25	<0.5	14.41
RM-16	Red brown gravelly soil with natural talus; slight gully	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	4,705.72	367.65	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,215.89	<0.25	<0.5	34.15
RM-17	Dark brown organic soil with natural weathered boulders upslope; dense vegetation	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	262.55	251.18	<0.25	<LOD	15.87	<0.25	0.23	<0.25	614.58	<0.25	<0.5	39.05
RM-18	Dark brown organic soil; start of vegetation	11/17/10	0.00	<0.5	<0.25	<0.1	51.37	1,088.37	682.11	21.80	<LOD	9.81	<0.25	0.23	<0.25	1,850.05	<0.25	<0.5	33.46
RM-19	Light brown to tan soil with tailings and talus, on bedrock	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	2,027.61	413.88	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,393.75	<0.25	<0.5	11.03
RM-20	Light brown soil with tailings and talus; steep, barren slope	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,139.63	365.62	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,757.64	<0.25	<0.5	17.52
RM-21	Tan soil with tailings and talus; on ridge	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	2,165.21	558.44	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,249.08	<0.25	<0.5	42.89
RM-22	Dark brown soil and weathered rock; steep, vegetated slope	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	2,241.80	572.84	<0.25	<LOD	11.05	<0.25	0.23	<0.25	1,816.11	<0.25	<0.5	33.65
RM-23	Dark brown organic soil and natural talus; dense vegetation	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,419.80	577.41	<0.25	<LOD	7.19	<0.25	0.23	<0.25	2,074.15	<0.25	<0.5	24.06
RM-24	Light brown to tan soil with tailings and talus, on bedrock	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	860.84	265.25	139.28	<LOD	<0.25	<0.25	0.23	<0.25	1,739.23	<0.25	<0.5	11.83
RM-25	Moist medium brown soil with talus and tailings; in bedrock gully on steep barren slope	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,217.83	422.65	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,952.00	<0.25	<0.5	24.38
RM-26	Dark brown soil with mix of talus and tailings; steep slope	11/17/10	0.00	<0.5	<0.25	<0.1	62.14	2,183.27	553.32	<0.25	<LOD	9.13	12.14	**21.66**	<0.25	2,005.41	<0.25	<0.5	52.94
RM-27	Medium brown soil and natural weathered talus; steep cliff just out of vegetation	11/17/10	0.00	<0.5	<0.25	<0.1	<0.25	1,912.41	407.90	<0.25	<LOD	15.87	<0.25	0.23	<0.25	2,043.06	<0.25	<0.5	31.39
RM-28	Yellow soil and yellow weathered rock with calcite veins	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	3,283.59	<0.25	<0.25	<LOD	10.72	62.21	**111.03**	<0.25	212.48	<0.25	<0.5	14.01

Table A-1
X-Ray Fluorescence Field Data

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site

Node Name	General Lithology; Observations	Date	Depth (feet bgs)	Sb	As	Ba	Cd	Cr	Co	Cu	Au	Pb	Hg	Hg Corrected**	Mo	Ni	Ag	Th	Zi
				Results in milligrams per kilogram (mg/kg)															
RM-28 area	Yellow soil and yellow weathered rock with calcite veins	11/30/10	0.00	<0.5	<0.25	<0.1	<0.25	7,826.36	2,535.22	44.47	6.30	40.42	14.22	**25.38**	<0.25	<0.25	<0.25	<0.5	<1.0
RM-29	Dark brown soil and talus; Some mine debris	11/29/10	0.00	<0.5	<0.25	<0.1	<0.25	2,952.72	750.43	<0.25	<LOD	5.23	9.09	**16.21**	<0.25	1,881.62	<0.25	<0.5	39.86
RM-30	Dark brown soil and talus; cliff	11/29/10	0.00	<0.5	<0.25	<0.1	<0.25	488.21	383.37	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	994.88	<0.25	<0.5	17.64
RM-31	Dark brown talus and tailings; very steep slope up from Dry Creek crossing	11/29/10	0.00	<0.5	<0.25	<0.1	41.37	973.99	447.71	23.35	<LOD	<0.25	<0.25	0.23	<0.25	1,914.78	<0.25	<0.5	32.39
RM-32	Red brown talus slope; tailings on road.	11/18/10	0.00	<0.5	<0.25	<0.1	59.42	1,189.74	687.22	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,591.35	<0.25	<0.5	32.67
RM-33	Red brown gravelly soil; above hoist at loading area	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	1,995.89	588.73	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,051.06	<0.25	<0.5	20.40
RM-34	Dark brown organic soil; below tracks next to 2" pipe; below upper mine area	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	1,863.69	406.23	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,768.51	<0.25	<0.5	20.23
RM-35	Dark red brown soil with tailings; on tailings ridge next to gully	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	3,080.82	475.31	<0.25	<LOD	<0.25	21.58	**38.52**	<0.25	2,061.63	<0.25	<0.5	25.49
RM-36	Yellow brown soil and tailings; downslope from yellow soil area, upstream from load area	11/18/10	0.00	<0.5	<0.25	<0.1	53.82	7,579.59	462.92	<0.25	4.42	16.54	105.82	**188.84**	<0.25	365.52	<0.25	<0.5	29.55
RM-37	Brown organic soil with yellow rock tailings	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	2,341.41	489.25	<0.25	<LOD	18.60	72.59	**129.55**	<0.25	364.15	<0.25	<0.5	47.28
RM-38	Dark red brown soil with tailings; downslope side of main road at switchback to lower mine.	11/18/10	0.00	<0.5	<0.25	<0.1	67.42	2,819.01	493.89	<0.25	<LOD	<0.25	33.41	**59.62**	<0.25	1,860.01	<0.25	<0.5	38.68
RM-39	Red soil with weathered rock and boulders; on branch road, at switch back	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	8,965.08	1,366.43	42.09	<LOD	25.47	17.12	**30.55**	<0.25	3,054.43	<0.25	<0.5	82.56
RM-40	Medium red brown soil, gravelly to cobbles; on branch road	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	3,177.13	634.50	<0.25	<LOD	<0.25	16.51	**29.46**	<0.25	2,492.85	<0.25	<0.5	26.98
RM-41	Dark red brown soil with 1/4" gravel	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	4,307.08	888.41	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,367.49	<0.25	<0.5	39.36
RM-42	Dark red brown gravelly soil with tailings	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	1,206.43	615.98	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,947.83	<0.25	<0.5	22.76
RM-43	Dark red brown soil with tailings; At base of telephone pole on top of retaining log wall	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	1,936.04	686.57	<0.25	<LOD	8.10	<0.25	0.23	<0.25	2,091.54	<0.25	<0.5	125.63
RM-44	Dark brown organic soil with trace tailings; just below main road	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	2,418.96	701.75	23.97	<LOD	<0.25	<0.25	0.23	<0.25	1,880.86	<0.25	<0.5	22.81
RM-45	Dark brown gravelly soil; on switch road	11/18/10	0.00	<0.5	<0.25	<0.1	36.86	1,671.17	501.98	<0.25	<LOD	<0.25	7.65	13.65	<0.25	1,630.63	<0.25	<0.5	29.50
RM-46	Dry creek deposits; Road side of creek (south) 2 feet from creek	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	3,701.11	643.24	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,586.92	<0.25	<0.5	46.54
RM-47	Red brown gravelly organic soil; dense dead trees	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	3,046.00	949.84	<0.25	<LOD	23.43	<0.25	0.23	<0.25	2,149.40	<0.25	<0.5	50.45
RM-48	Dark red brown gravelly soil; on branch road above second branch	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	3,131.95	467.39	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,748.10	<0.25	<0.5	25.82
RM-49	Dark brown organic soil; on steep hill below alternate branch road	11/18/10	0.00	<0.5	<0.25	<0.1	45.09	931.31	442.71	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,511.37	<0.25	<0.5	15.77
RM-50	Dark brown moist gravelly soil with tailings; ~15' below main road	11/19/10	0.00	<0.5	<0.25	<0.1	<0.25	2,202.91	525.91	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,189.50	<0.25	<0.5	22.89
RM-51	Dark brown soil with weathered rock	11/19/10	0.00	<0.5	<0.25	<0.1	<0.25	974.57	287.78	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,000.88	<0.25	<0.5	12.13
RM-52	Dark brown gravelly soil with tailings; on lower mining area flat	11/19/10	0.00	<0.5	<0.25	<0.1	<0.25	1,642.79	439.72	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,398.41	<0.25	<0.5	17.45
RM-53	Medium brown soil with tailings and furnace slag; on slope to creek below mining flat area.	11/19/10	0.00	<0.5	<0.25	<0.1	<0.25	1,093.27	500.04	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,819.16	<0.25	<0.5	19.49
RM-54	Gray slate bedrock; on cliff face across Dry Creek, under drain pipe	11/19/10	0.00	<0.5	<0.25	<0.1	<0.25	454.21	373.46	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	737.45	<0.25	<0.5	<1.0

Table A-1
X-Ray Fluorescence Field Data

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Node Name	General Lithology; Observations	Date	Depth (feet bgs)	Sb	As	Ba	Cd	Cr	Co	Cu	Au	Pb	Hg	Hg Corrected**	Mo	Ni	Ag	Th	Zi
				Results in milligrams per kilogram (mg/kg)															
RM-55	Dark brown gravelly soil; above branch road	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	4,522.17	909.42	<0.25	<LOD	26.08	<0.25	0.23	<0.25	2,033.50	<0.25	<0.5	53.59
RM-56	Medium brown-red gravelly soil with local boulders; on branch road from main road	11/18/10	0.00	<0.5	<0.25	<0.1	46.29	6,256.17	580.02	<0.25	<LOD	<0.25	14.40	**25.69**	<0.25	2,254.73	<0.25	<0.5	15.71
RM-57	Dark brown soil with tailings; on main road, uphill side below branch road	11/29/10	0.00	<0.5	<0.25	<0.1	<0.25	1,305.29	446.60	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,568.94	<0.25	<0.5	12.19
RM-58	Dark reddish brown tailings in soil; steep slope below main road	11/29/10	0.00	<0.5	<0.25	<0.1	<0.25	1,659.90	584.10	<0.25	<LOD	5.59	<0.25	0.23	<0.25	1,188.90	<0.25	<0.5	22.83
RM-59	Dark red brown gravelly soil; on steep slope/cliff	11/29/10	0.00	<0.5	<0.25	<0.1	<0.25	1,219.26	384.65	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,305.91	<0.25	<0.5	17.48
RM-60	Red brown soil and mine tailings, red veins in rock; on mining flat	11/19/10	0.00	<0.5	<0.25	<0.1	<0.25	1,580.77	875.53	37.38	<LOD	14.65	17.32	**30.91**	<0.25	5,117.39	<0.25	<0.5	64.36
		11/19/10	0.00	<0.5	<0.25	<0.1	<0.25	2,968.78	249.71	<0.25	<LOD	14.25	<0.25	0.23	<0.25	108.27	<0.25	<0.5	19.14
RM-61	Red brown soil with 50% tailings and crushed rock to 3-inches	11/19/10	0.00	<0.5	<0.25	<0.1	<0.25	766.60	298.78	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,484.00	<0.25	<0.5	18.08
RM-62	Gray-green bedrock; across Dry Creek on talus slope	11/19/10	0.00	<0.5	<0.25	<0.1	<0.25	1,184.10	438.96	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,812.56	<0.25	<0.5	15.36
RM-63	Dark brown soil with weathered gravel	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	2,322.13	681.31	<0.25	<LOD	13.16	<0.25	0.23	<0.25	1,845.36	<0.25	<0.5	40.73
RM-64	Dark brown gravelly soil; on uphill side of main road	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	947.33	590.22	<0.25	<LOD	6.90	<0.25	0.23	<0.25	1,585.25	<0.25	<0.5	29.18
RM-65	Dark brown organic soil; Gully wash, east side down slope from main road at base	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	2,297.17	579.96	28.11	<LOD	8.26	<0.25	0.23	<0.25	1,029.09	<0.25	<0.5	44.90
RM-66	Gravel with some dark brown soil and boulders; below mine car, in gully	11/29/10	0.00	<0.5	<0.25	<0.1	<0.25	1,825.98	406.32	<0.25	<LOD	<0.25	9.80	**17.49**	<0.25	1,408.03	<0.25	<0.5	23.55
RM-67	Red brown soil; top of cliff on steep slope	11/29/10	0.00	44.13	<0.25	<0.1	30.86	1,897.60	652.81	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,853.20	<0.25	<0.5	28.77
RM-68	Brown soil with cobbles of tailings and talus; edge of wash below old road, 20' above Dry Creek.	11/29/10	0.00	<0.5	<0.25	<0.1	<0.25	2,307.63	446.58	<0.25	<LOD	<0.25	46.73	**83.39**	<0.25	1,534.42	<0.25	<0.5	29.90
RM-69	Stream gravel; in middle of Dry Creek	11/29/10	0.00	<0.5	<0.25	<0.1	<0.25	2,682.91	258.68	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,024.38	<0.25	<0.5	35.50
RM-70	Dark brown soil with 80% talus; on old road across Dry Creek on north side	11/29/10	0.00	<0.5	<0.25	<0.1	<0.25	768.80	503.94	16.55	<LOD	<0.25	<0.25	0.23	<0.25	1,214.38	<0.25	<0.5	17.35
RM-71	Dark brown organic soil; steep slope	11/18/10	0.00	<0.5	<0.25	345.75	<0.25	582.31	385.43	28.37	<LOD	15.29	<0.25	0.23	<0.25	319.82	<0.25	<0.5	65.17
RM-72	Dark brown soil with some gravel; near burned log above main road	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	1,147.99	503.24	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,719.15	<0.25	<0.5	34.14
RM-73	Dark brown gravelly soil; down side of main road	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	1,810.04	587.19	30.11	<LOD	<0.25	<0.25	0.23	<0.25	1,908.61	<0.25	<0.5	46.07
RM-74	Dark brown gravelly soil with talus; steep, 40' below main road	11/29/10	0.00	<0.5	<0.25	<0.1	49.13	343.14	388.57	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,261.26	<0.25	<0.5	17.70
RM-75	Medium brown gravelly soil with weathered talus; very steep	11/29/10	0.00	<0.5	<0.25	<0.1	35.86	1,538.18	471.94	21.47	<LOD	8.28	<0.25	0.23	<0.25	1,538.55	<0.25	<0.5	45.65
RM-76	Medium brown gravelly soil with talus; on steep slope about 40' above creek.	11/29/10	0.00	<0.5	<0.25	<0.1	49.31	1,859.69	810.71	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,385.23	<0.25	<0.5	35.29
RM-77	Gray-brown gravelly soil, with talus; below bedrock cliff on bank of creek	11/29/10	0.00	<0.5	<0.25	<0.1	36.88	941.92	550.67	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,730.81	<0.25	<0.5	23.05
RM-78	Dark brown talus cobbles; above cliff, in gully	11/29/10	0.00	<0.5	4.40	285.86	<0.25	468.17	336.62	26.70	<LOD	12.05	<0.25	0.23	<0.25	340.13	<0.25	<0.5	58.82
RM-79	Dark brown gravelly soil; cliff edge of main road	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	1,349.47	538.98	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,577.76	<0.25	<0.5	34.94
RM-80	Moist dark brown soil with cobbles to boulders; very steep, thick vegetation, 40' below main road.	11/29/10	0.00	<0.5	<0.25	<0.1	<0.25	977.75	611.20	<0.25	<LOD	8.16	<0.25	0.23	<0.25	1,420.55	<0.25	<0.5	32.61

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				Results in milligrams per kilogram (mg/kg)															
RM-81	Moist dark brown gravelly soil; very steep	11/29/10	0.00	<0.5	<0.25	<0.1	30.53	524.33	448.53	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,366.83	<0.25	<0.5	24.61
RM-82	Moist dark brown gravelly soil with tailings and talus; along old trail between mine and furnaces.	11/29/10	0.00	<0.5	<0.25	<0.1	<0.25	413.90	279.38	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,009.25	<0.25	<0.5	10.06
RM-83	Gray-brown gravelly soil, with talus; below bedrock cliff on bank creek	11/29/10	0.00	<0.5	<0.25	<0.1	<0.25	913.10	449.72	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,480.93	<0.25	<0.5	19.97
RM-84	Dark brown soil with native weathered talus; above main road, above cliff	11/29/10	0.00	<0.5	<0.25	<0.1	29.76	624.44	193.19	<0.25	<LOD	22.04	<0.25	0.23	<0.25	240.40	<0.25	<0.5	52.14
RM-85	Dark brown gravelly soil; very steep hillside	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	1,775.55	557.34	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,263.26	<0.25	<0.5	31.19
RM-86	Dark brown soil at rocky outcrop; very steep hillside	11/18/10	0.00	<0.5	<0.25	<0.1	54.27	1,724.53	636.85	<0.25	<LOD	8.91	<0.25	0.23	<0.25	2,377.36	<0.25	<0.5	30.07
RM-87	Dark brown soil with 1/4-inch talus; very steep hillside	11/18/10	0.00	<0.5	<0.25	<0.1	65.60	961.11	564.76	<0.25	<LOD	<0.25	8.07	14.41	<0.25	1,930.94	<0.25	<0.5	23.06
RM-88	Dark brown soil with weathered rock; very steep hillside	11/18/10	0.00	<0.5	<0.25	<0.1	78.80	897.06	347.85	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,512.01	<0.25	<0.5	25.87
RM-89	Dark brown soil with local cobbles; on road, below runoff gully	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	2,727.01	344.50	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,765.61	<0.25	<0.5	33.13
RM-90	Moist dark brown soil; up rocky gully from RM-89, steep slope.	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	3,435.76	281.82	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,825.63	<0.25	<0.5	42.57
RM-91	Dark brown gravelly soil, 0.5-inch to 2-inch cobbles; up steep slope 40' below main road.	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	251.07	279.95	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	952.94	<0.25	<0.5	25.27
RM-92	Dark brown soil with weathered rock; steep slope above twin tree, above cliff.	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	1,417.02	525.33	<0.25	<LOD	13.95	<0.25	0.23	<0.25	1,470.28	<0.25	<0.5	46.96
RM-93	Dark brown organic soil; edge of road above furnace	11/18/10	0.00	<0.5	<0.25	<0.1	69.58	2,453.32	531.17	<0.25	<LOD	9.33	96.29	**171.85**	<0.25	1,640.86	<0.25	<0.5	37.89
RM-94	Dark brown soil with 1/4" gravel; above downed tree	11/18/10	0.00	<0.5	<0.25	<0.1	49.18	1,808.71	541.44	23.49	<LOD	<0.25	256.74	**458.18**	<0.25	2,053.89	<0.25	<0.5	33.16
RM-95	Dark brown gravelly soil; 12 inches off west corner of largest furnace	11/18/10	0.00	<0.5	<0.25	442.08	<0.25	1,533.56	561.01	<0.25	<LOD	13.01	55.43	**98.92**	<0.25	1,434.44	<0.25	<0.5	28.28
RM-96	Dark brown soil, locally gravelly; across stream from furnace on road.	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	1,218.45	484.37	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,537.72	<0.25	<0.5	19.24
RM-97	Dark brown soil with weathered native talus; up cliff rom road	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	731.77	566.63	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,704.27	<0.25	<0.5	11.57
RM-98	Dark brown soil with surrounding boulders	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	660.20	428.99	<0.25	<LOD	5.53	<0.25	0.23	<0.25	1,874.51	<0.25	<0.5	23.09
RM-99	Dark brown organic soil with minor gravel to 2 inches	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	958.83	163.30	<0.25	<LOD	<0.25	34.11	**60.86**	<0.25	848.76	<0.25	<0.5	16.91
RM-100	Dark brown soil and tailings; at corner of collapsed furnace	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	336.90	104.99	<0.25	<LOD	8.52	309.47	**552.29**	6.97	376.51	<0.25	<0.5	<1.0
RM-101	Stream sand and silt; below furnace, across creek	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	835.47	308.27	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,019.83	<0.25	<0.5	20.54
RM-102	Dark brown gravelly soil;	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	488.38	492.92	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,139.95	<0.25	<0.5	21.85
RM-103	Bedrock w/ sediment; in gully above road	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	1,129.62	370.43	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,765.32	<0.25	<0.5	16.08
RM-104	Dark brown organic soil; above stream up slope and cliff	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	<0.25	<0.25	<0.25	<LOD	<0.25	<0.25	0.23	12.00	133.77	<0.25	<0.5	<1.0
RM-105	Bedrock; on rocky bank	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	619.76	361.26	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,494.97	<0.25	<0.5	<1.0
RM-106	Dark brown soil with surrounding boulders to 6'; at bottom of stream canyon below road.	11/18/10	0.00	<0.5	<0.25	<0.1	46.20	901.74	290.83	<0.25	<LOD	<0.25	8.06	0.23	<0.25	1,214.51	<0.25	<0.5	32.35
RM-107	Moist medium brown talus and soil; above wood drain pipe on north side of road 6' up slope.	11/18/10	0.00	<0.5	<0.25	<0.1	<0.25	1,278.05	392.02	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,749.02	<0.25	<0.5	15.44
RESEARCH MINE TRENCH SAMPLES																			
RMT1a-4	Trench Sample*	11/30/10	0.33	<0.5	<0.25	<0.1	<0.25	1,159.73	455.89	17.49	<LOD	<0.25	<0.25	0.23	<0.25	1,549.37	<0.25	<0.5	17.38
RMT1b-12	Trench Sample*	11/30/10	1.00	<0.5	<0.25	<0.1	<0.25	828.41	587.66	18.54	<LOD	<0.25	<0.25	0.23	<0.25	1,192.04	<0.25	<0.5	14.70
RMT1c-18	Trench Sample*	11/30/10	1.50	<0.5	<0.25	<0.1	<0.25	1,221.03	629.34	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,223.62	<0.25	<0.5	20.21

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				Results in milligrams per kilogram (mg/kg)															
RMT2a-1	Trench Sample*	11/30/10	0.08	<0.5	<0.25	<0.1	<0.25	1,387.81	512.24	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,557.04	<0.25	<0.5	15.12
RMT2b-4	Trench Sample*	11/30/10	0.33	<0.5	<0.25	<0.1	<0.25	410.83	178.29	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	485.58	<0.25	<0.5	12.76
RMT3a-18	Trench Sample*	11/30/10	1.50	<0.5	<0.25	<0.1	<0.25	1,620.67	601.55	15.89	<LOD	<0.25	8.03	14.33	<0.25	1,141.85	<0.25	<0.5	31.19
RMT3b-24	Trench Sample*	11/30/10	2.00	<0.5	<0.25	<0.1	<0.25	1,528.85	480.97	<0.25	<LOD	7.84	<0.25	0.23	<0.25	1,809.37	<0.25	<0.5	38.17
RMT3c-26	Trench Sample*	11/30/10	2.17	<0.5	<0.25	<0.1	<0.25	1,828.07	405.38	22.92	<LOD	<0.25	<0.25	0.23	<0.25	1,867.96	<0.25	<0.5	38.94
RMT3y-8	Trench Sample*	11/30/10	0.67	<0.5	<0.25	<0.1	62.95	7,614.74	568.88	<0.25	<LOD	8.70	79.87	**142.54**	<0.25	283.41	<0.25	<0.5	34.24
RMT3z-8	Trench Sample*	11/30/10	0.67	<0.5	<0.25	<0.1	56.87	9,650.71	835.45	26.41	<LOD	41.16	191.01	**340.88**	<0.25	107.27	<0.25	<0.5	39.90
RMT4a-2	Trench Sample*	11/30/10	0.17	<0.5	<0.25	<0.1	47.74	1,750.82	543.69	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,062.70	<0.25	<0.5	28.47
RMT4b-16	Trench Sample*	11/30/10	1.33	<0.5	<0.25	<0.1	<0.25	1,123.04	333.33	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,297.15	<0.25	<0.5	11.23
RMT4c-0	Trench Sample*	11/30/10	0.00	<0.5	<0.25	<0.1	<0.25	384.09	283.09	58.72	<LOD	9.63	<0.25	0.23	<0.25	115.87	88.64	<0.5	80.43
RMT5a-1	Trench Sample*	11/30/10	0.08	<0.5	<0.25	<0.1	<0.25	1,802.86	355.67	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,443.53	<0.25	<0.5	12.39
RMT5b-12	Trench Sample*	11/30/10	1.00	<0.5	<0.25	<0.1	<0.25	845.38	590.96	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,068.19	<0.25	<0.5	23.09
RMT5c-1	Trench Sample*	11/30/10	0.08	<0.5	<0.25	<0.1	<0.25	2,906.96	442.26	<0.25	<LOD	<0.25	16.77	**29.92**	<0.25	2,264.17	<0.25	<0.5	21.40
RMT5d-4	Trench Sample*	11/30/10	0.33	<0.5	<0.25	<0.1	<0.25	1,272.96	467.08	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,310.86	<0.25	<0.5	17.07
RMT6a-5	Trench Sample*	11/30/10	0.42	<0.5	<0.25	<0.1	<0.25	4,462.82	979.54	<0.25	<LOD	<0.25	12.94	**23.10**	<0.25	3,336.76	<0.25	<0.5	40.07
RMT6b-16	Trench Sample*	11/30/10	1.33	<0.5	<0.25	<0.1	<0.25	6,026.13	1,094.82	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,776.59	<0.25	<0.5	47.08
RMT6c-24	Trench Sample*	11/30/10	2.00	<0.5	<0.25	<0.1	<0.25	5,026.26	795.11	<0.25	<LOD	<0.25	14.75	**26.32**	<0.25	2,937.43	<0.25	<0.5	40.00
RMT6d-24	Trench Sample*	11/30/10	2.00	<0.5	<0.25	<0.1	65.23	2,877.22	613.60	24.89	<LOD	<0.25	15.09	**26.93**	<0.25	1,712.96	<0.25	<0.5	23.24
RMT7a-8	Trench Sample*	11/30/10	0.67	<0.5	<0.25	<0.1	<0.25	879.19	242.40	23.42	<LOD	<0.25	<0.25	0.23	<0.25	1,293.32	<0.25	<0.5	32.83
RMT8a-6	Trench Sample*	12/01/10	0.50	<0.5	<0.25	<0.1	<0.25	950.81	343.11	<0.25	<LOD	<0.25	120.96	**215.86**	<0.25	927.14	<0.25	<0.5	17.77
RMT8b-15	Trench Sample*	12/01/10	1.25	<0.5	<0.25	<0.1	<0.25	989.03	338.81	<0.25	5.40	6.67	625.14	**1,115.63**	<0.25	977.84	<0.25	<0.5	18.88
RMT8c-22	Trench Sample*	12/01/10	1.83	<0.5	<0.25	<0.1	<0.25	771.13	354.26	<0.25	<LOD	<0.25	749.87	**1,338.22**	<0.25	965.78	<0.25	<0.5	13.37
RMT8d-36	Trench Sample*	12/01/10	3.00	<0.5	<0.25	<0.1	<0.25	1,425.03	392.55	19.47	<LOD	30.25	1,552.76	**2,771.05**	<0.25	1,322.69	<0.25	<0.5	27.51
RMT8j-72	Trench Sample*	12/01/10	6.00	<0.5	<0.25	<0.1	<0.25	1,679.33	622.25	33.10	<LOD	<0.25	<0.25	0.23	<0.25	1,169.95	<0.25	<0.5	27.54
RMT8k-66	Trench Sample*	12/01/10	5.50	<0.5	<0.25	<0.1	<0.25	1,352.94	503.20	<0.25	<LOD	<0.25	59.27	**105.78**	<0.25	1,539.47	<0.25	<0.5	25.45
RMT8l-60	Trench Sample*	12/01/10	5.00	<0.5	<0.25	<0.1	<0.25	1,025.58	366.19	<0.25	<LOD	<0.25	9.49	**16.94**	<0.25	1,117.77	<0.25	<0.5	14.03
RMT8m-48	Trench Sample*	12/01/10	4.00	<0.5	<0.25	<0.1	<0.25	1,453.30	308.26	<0.25	<LOD	<0.25	8.97	**16.01**	<0.25	1,263.99	<0.25	<0.5	18.94
RMT8n-36	Trench Sample*	12/01/10	3.00	<0.5	<0.25	<0.1	<0.25	1,028.68	453.93	<0.25	<LOD	<0.25	21.43	**38.25**	<0.25	1,333.85	<0.25	<0.5	16.95
RMT8o-24	Trench Sample*	12/01/10	2.00	<0.5	<0.25	<0.1	<0.25	652.40	245.51	<0.25	<LOD	28.07	1,065.64	**1,901.74**	<0.25	959.68	<0.25	<0.5	25.49
RMT8p-12	Trench Sample*	12/01/10	1.00	<0.5	<0.25	<0.1	<0.25	1,561.76	657.70	<0.25	<LOD	<0.25	22.47	**40.10**	<0.25	2,064.11	<0.25	<0.5	34.10
RMT8q-1	Trench Sample*	12/01/10	0.08	<0.5	<0.25	<0.1	<0.25	1,471.57	506.84	<0.25	<LOD	<0.25	26.32	**46.97**	<0.25	1,807.80	<0.25	<0.5	22.80
RMT8r-11	Trench Sample*	12/01/10	0.92	<0.5	<0.25	<0.1	<0.25	1,057.59	659.79	<0.25	<LOD	<0.25	76.76	**136.98**	<0.25	1,911.11	<0.25	<0.5	24.91
RMT8s-4	Trench Sample*	12/01/10	0.33	<0.5	<0.25	<0.1	<0.25	1,100.48	515.99	18.63	<LOD	<0.25	9.57	**17.09**	<0.25	1,769.87	<0.25	<0.5	25.11
RMT8t-36	Trench Sample*	12/01/10	3.00	<0.5	<0.25	<0.1	<0.25	2,006.29	458.68	<0.25	<LOD	43.76	637.11	**1,136.99**	<0.25	1,483.47	<0.25	<0.5	37.51
RMT8u-8	Trench Sample*	12/01/10	0.67	<0.5	<0.25	<0.1	<0.25	1,324.37	641.22	28.41	<LOD	<0.25	129.61	**231.30**	<0.25	1,555.43	<0.25	<0.5	24.55
RMT8v-1	Trench Sample*	12/01/10	0.08	<0.5	<0.25	<0.1	<0.25	2,185.32	468.50	<0.25	<LOD	<0.25	65.54	**116.97**	<0.25	1,738.86	<0.25	<0.5	21.88
RMT8w-31	Trench Sample*	12/01/10	2.58	<0.5	<0.25	<0.1	<0.25	958.09	<0.25	<0.25	<LOD	<0.25	312.41	**557.53**	<0.25	1,860.60	<0.25	<0.5	16.33
RMT8x-4	Trench Sample*	12/01/10	0.33	49.61	<0.25	<0.1	42.48	838.05	242.33	<0.25	<LOD	<0.25	407.59	**727.39**	<0.25	1,012.80	<0.25	<0.5	18.65
RMT8y-30	Trench Sample*	12/01/10	2.50	<0.5	<0.25	<0.1	<0.25	1,065.84	440.67	<0.25	<LOD	97.73	916.94	**1,636.37**	<0.25	1,370.88	<0.25	<0.5	19.12
RMT8z-24	Trench Sample*	12/01/10	2.00	<0.5	<0.25	<0.1	<0.25	745.25	340.06	<0.25	<LOD	<0.25	277.67	**495.53**	<0.25	1,115.64	<0.25	<0.5	20.39
RMT9a-6	Trench Sample*	12/01/10	0.50	<0.5	<0.25	<0.1	<0.25	2,218.69	456.31	<0.25	<LOD	<0.25	175.08	**312.46**	<0.25	1,712.24	<0.25	<0.5	26.38

Table A-1
X-Ray Fluorescence Field Data

Engineering Evaluation/Cost Analysis Report
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Node Name	General Lithology; Observations	Date	Depth (feet bgs)	Sb	As	Ba	Cd	Cr	Co	Cu	Au	Pb	Hg	Hg Corrected**	Mo	Ni	Ag	Th	Zi
				Results in milligrams per kilogram (mg/kg)															
RMT9b-18	Trench Sample*	12/01/10	1.50	<0.5	<0.25	<0.1	<0.25	1,263.59	552.98	<0.25	<LOD	<0.25	27.00	**48.19**	<0.25	2,427.77	<0.25	<0.5	26.00
RMT9c-28	Trench Sample*	12/01/10	2.33	<0.5	<0.25	<0.1	<0.25	2,684.28	421.56	<0.25	<LOD	<0.25	69.41	**123.87**	<0.25	2,005.07	<0.25	<0.5	31.18
RMT9d-32	Trench Sample*	12/01/10	2.66	<0.5	<0.25	<0.1	<0.25	1,580.78	540.49	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,531.99	<0.25	<0.5	22.40
RESEARCH MINE SEDIMENT SAMPLES																			
RM-Mid (sediment sample)	Sediment Sample collected in Dry Creek, approximately 200' upstream of furnaces	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	2,221.01	539.81	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	2,064.26	<0.25	<0.5	40.99
RMDS (sediment sample)	Sediment Sample (brown sandy gravel) collected in Dry Creek, downstream of furnaces	11/16/10	0.00	<0.5	<0.25	<0.1	<0.25	825.48	390.45	<0.25	<LOD	<0.25	<0.25	0.23	<0.25	1,654.76	<0.25	<0.5	22.65

NOTES:
Samples reported using an InnovX handheld XRF meter
feet bgs = feet below ground surface
<LOD = Less than Limit of Detection on XRF Meter
* = Trench Sample lithologies are provided on the Trench Logs in Appendix C

Sb = Antimony
As = Arsenic
Ba = Barium
Cd = Cadmium
Cr = Chromium

Co = Cobalt
Cu = Copper
Au = Gold
Pb = Lead
Hg = Mercury

Mo = Molybdenum
Ni = Nickel
Ag = Silver
Th = Thallium
Zi = Zinc

** = Mercury XRF Results in this column have been adjusted based on the slope of the line in the accompanying graphs, which is 1.7846 (lab:XRF); Non-detects are corrected at 1/2 the reporting limit.
Bold mercury data represent the samples which exceed the action level established in the Human Health and Ecological Risk Assessment. The number represents background at 15.7 mg/kg.

Table A-2
XRF Metals versus CAM-17 Metals Laboratory Analysis

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site

XRF Sample Name	Lab Sample Name	Date	Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper	
			All Results in milligrams per kilogram (mg/kg)															
		Lab Preparation Type	XRF	Total/Lab	XRF	Total/Lab	XRF	Total/Lab	XRF	Total/Lab	XRF	Total/Lab	XRF	Total/Lab	XRF	Total/Lab	XRF	Total/Lab
Total Threshold Limit Concentrations			*500*		*500*		*10,000**		*75*		*100*		*2,500*		*8,000*		*2,500*	
CM-01	CM-01-S	11/17/2010	<0.5	2.7	<0.25	< 4.1	<0.1	7	NA	< 0.41	<0.25	< 0.51	11439.78	520	1246.19	93	<0.25	< 6.1
CM-3a-12	CM-3a-12	11/29/2011	<0.5	11.2	<0.25	41.5	<0.1	76.1	NA	< 0.39	<0.25	41.4	8850.27	776	833.88	190	<0.25	53.8
CM-09	CM-09-S	11/17/2010	<0.5	2	<0.25	< 3.9	<0.1	5	NA	< 0.39	<0.25	< 0.49	5812.32	370	1126.38	120	<0.25	7.2
CM-23	CM-23-S	11/17/2010	<0.5	4.4	<0.25	5	<0.1	35	NA	< 0.4	<0.25	< 0.5	10297.48	820	769.53	160	<0.25	13
CM-23	DUP-1	11/17/2010	<0.5	4.6	NA	5.5	NA	40	NA	< 0.4	NA	< 0.5	NA	910	NA	190	NA	14
RM-05	RM-05-S	11/17/2010	<0.5	3.5	<0.25	< 4.1	<0.1	< 2.1	NA	< 0.41	<0.25	< 0.52	1387.38	690	375.78	76	<0.25	< 6.2
RM-36	RM-36-S	11/18/2010	<0.5	< 2.1	<0.25	< 4.1	<0.1	< 2.1	NA	< 0.41	53.82	< 0.52	7579.59	100	462.92	23	<0.25	8.7
RM-43	RM-43-S	11/19/2010	<0.5	4.1	<0.25	< 4	<0.1	25	NA	< 0.4	<0.25	< 0.5	1936.04	420	686.57	98	<0.25	9.6
RM-60	RM-60-S	11/19/2010	<0.5	< 2.1	<0.25	< 4.1	<0.1	19	NA	< 0.41	<0.25	< 0.52	2968.78	330	249.71	90	<0.25	11
RM-94	RM-94-S	11/18/2010	<0.5	< 2.1	<0.25	< 4.2	<0.1	26	NA	< 0.42	49.18	< 0.53	1808.71	370	541.44	62	23.49	< 6.3
RMT3z-8	RMT3z-8	11/30/2010	<0.5	< 2	<0.25	< 3.9	<0.1	< 2	NA	< 0.39	56.87	< 0.49	9650.71	86	835.45	19	26.41	6.3
RMT3z-8d	RMT3z-8 dup	11/30/2010	<0.5	ND	<0.25	NA	<0.1	27	NA	< 0.39	56.87	NA	9650.71	140	835.45	26	26.41	12
RMT-6a-5	RMT-6a-5	11/30/2010	NA	0.96	<0.25	< 4.1	<0.1	32	NA	NA	<0.25	< 0.51	4462.82	680	979.54	170	<0.25	13
RMT-8b-15	RMT-8b-15	12/1/2010	NA	< 2.1	<0.25	< 4.2	<0.1	70	NA	NA	<0.25	< 0.53	989.03	460	338.81	52	<0.25	7.6
RMDS	RMDS	11/18/2010	<0.5	< 1.9	<0.25	< 3.9	<0.1	30	NA	< 0.39	<0.25	< 0.49	825.48	280	390.45	43	<0.25	13

XRF Sample Name	Lab Sample Name	Date	Lead		Mercury		Molybdenum**		Nickel		Selenium		Silver		Thallium		Vanadium		Zinc	
			All Results in milligrams per kilogram (mg/kg)																	
		Lab Preparation Type	XRF	Total/Lab	XRF***	Total/Lab	XRF	Total/Lab	XRF	Total/Lab	XRF	Total/Lab	XRF	Total/Lab	XRF	Total/Lab	XRF	Total/Lab	XRF	Total/Lab
Total Threshold Limit Concentrations			*1,000*		*20*		*3,500*		*2,000*		*100*		*500*		*700*		*2,400*		*5,000*	
CM-01	CM-01-S	11/17/2010	31.02	< 2	964.04	450	<0.25	< 2	3413.88	1600	NA	< 4.1	<0.25	< 1	<0.5	< 2	NA	16	47.22	21
CM-3a-12	CM-3a-12	11/29/2011	<0.25	45.3	682.22	700	<0.25	39.5	3349.94	2350	NA	< 3.9	<0.25	20.6	<0.5	41.4	NA	65.6	48.74	84.8
CM-09	CM-09-S	11/17/2010	<0.25	2.3	1242.93	1700	<0.25	< 1.9	2995.21	2200	NA	< 3.9	<0.25	< 0.97	<0.5	< 1.9	NA	11	36.57	26
CM-23	CM-23-S	11/17/2010	23.83	4.2	876.44	990	<0.25	< 2	3438.99	2400	NA	< 4	<0.25	< 1	<0.5	< 2	NA	27	54.92	46
CM-23	DUP-1	11/17/2010	NA	5.8	NA	720	NA	< 2	NA	2600	NA	< 4	NA	< 0.99	NA	< 2	NA	30	NA	51
RM-05	RM-05-S	11/17/2010	<0.25	< 2.1	0.23	0.12	<0.25	< 2.1	1282.65	1400	NA	< 4.1	<0.25	< 1	<0.5	< 2.1	NA	13	13.56	18
RM-36	RM-36-S	11/18/2010	16.54	2.3	188.84	74	<0.25	< 2.1	365.52	200	NA	< 4.1	<0.25	< 1	<0.5	< 2.1	NA	4.8	29.55	17
RM-43	RM-43-S	11/19/2010	8.10	5.6	0.23	52	<0.25	< 2	2091.54	1600	NA	< 4	<0.25	< 0.99	<0.5	< 2	NA	13	125.63	57
RM-60	RM-60-S	11/19/2010	14.25	15	0.23	9.2	<0.25	< 2.1	108.27	1400	NA	< 4.1	<0.25	< 1	<0.5	< 2.1	NA	12	19.14	96
RM-94	RM-94-S	11/18/2010	<0.25	3.5	458.18	450	<0.25	< 2.1	2053.89	1100	NA	< 4.2	<0.25	< 1.1	<0.5	< 2.1	NA	14	33.16	19
RMT3z-8	RMT3z-8	11/30/2010	41.16	2	340.88	86	<0.25	< 2	107.27	170	NA	< 3.9	<0.25	< 0.98	<0.5	< 2	NA	4.1	39.90	14
RMT3z-8d	RMT3z-8 dup	11/30/2010	41.16	2.2	340.88	130	<0.25	ND	107.27	210	NA	< 3.9	<0.25	NA	<0.5	ND	NA	7	39.90	22
RMT-6a-5	RMT-6a-5	11/30/2010	<0.25	2.6	23.10	4.1	<0.25	< 2	3336.76	2100	NA	NA	<0.25	< 1	<0.5	< 2	NA	20	40.07	51
RMT-8b-15	RMT-8b-15	12/1/2010	6.67	15	1115.63	910	<0.25	< 2.1	977.84	1200	NA	NA	<0.25	< 1.1	<0.5	< 2.1	NA	16	18.88	24
RMDS	RMDS	11/18/2010	<0.25	2.6	0.23	0.22	<0.25	< 1.9	1654.76	950	NA	< 3.9	<0.25	< 0.97	<0.5	< 1.9	NA	16	22.65	28

Notes:
Total/Lab = Results from Total Threshold Limit Concentrations (TTLCs) of CAM-17 Metals via Method 6010B by Test America San Francisco;
Total Threshold Limit Concentrations (TTLC's) obtained from CCR Title 22 Chapter 11, Article 3, Table 2
*** Mercury XRF Results have been adjusted based on the slope of the line in the accompanying graphs, which is 1.7846 (lab:XRF);

* = Excluding barium sulfate
** = Excluding molybdenum disulfide
Shaded, **bolded** value represents a result in exceedence of TTLC

Table A-3
Acid Base Accounting

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site
Lake County, California

Sample	Date	Sample Depth (feet bgs)	AGP ($TCaCO_3$/kT)	ANP ($TCaCO_3$/kT)	ABA* or NNP** ($TCaCO_3$/kT)	Ratio of ANP:AGP (***)	Excess ANP (***)
CMT3a-12	11/29/10	1.0	0.79	152	151	>3 to 1 at 192 to 1	>300% at 19241%
CMT4a-6	11/29/10	0.5	<0.3	141	141	>3 to 1 at 470 to 1	>300% at 47000%
CMT5a-4	11/30/10	0.33	4.53	446	442	>3 to 1 at 98 to 1	>300% at 9845%
CMT6a-8	11/30/10	0.66	1.07	217	216	>3 to 1 at 203 to 1	>300% at 20280%
CMT7a-4	11/30/10	0.33	<0.3	197	197	>3 to 1 at 657 to 1	>300% at 65667%
RMDS	11/18/10	0	<0.3	156	156	>3 to 1 at 520 to 1	>300% at 52000%
RMT3z-8	11/30/10	0.66	5.44	20.6	15.2	>3 to 1 at 3.78 to 1	>300% at 379%
RMT6a-5	11/30/10	0.42	0.42	144	144	>3 to 1 at 343 to 1	>300% at 34286%
RMT8a-6	12/01/10	0.5	<0.3	224	225	>3 to 1 at 747 to 1	>300% at 74667%
RMT8b-15	12/01/10	1.25	0.84	134	133	>3 to 1 at 160 to 1	>300% at 15952%
RMT9a-6	12/01/10	0.5	<0.3	299	299	>3 to 1 at 997 to 1	>300% at 99667%

Notes:
All analyses performed by SVL Analytical of Idaho (CDPH-Certification No. 280)
Analysis Method: LECO Combustion Method (utilizes LECO Model 523-300 Induction Furnace)
ANP = Acid Neutralization Potential ($TCaCO_3$/kT)
AGP = Acid Generation Potential ($TCaCO_3$/kT)
ABA = Acid Base Accounting ($TCaCO_3$/kT)
$TCaCO_3$/kT = tons of calcium carbonate per kiloton
bgs = below ground surface
* ABA = ANP - AGP which is the net neutralization potential ($TCaCO_3$/kT)
** The difference between ANP and AGP is the net neutralization potential (NNP) or the ABA. If the ABA is positive (ANP is higher than AGP), then the mine waste is predicted to produce alkaline drainage.
*** From the 1996 BLM *Instructional Memorandum No. 96-79: Acid rock drainage policy for activities authorized under 43 CFR 3802/3809*: Non-acid generating waste is determined at 300% excess ANP (i.e., ANP/AGP ≥3).

Table A-4
Waste Extraction Test Results

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site
Lake County, California

Sample	Date	Sample Depth (feet bgs)	Antimony	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead
			All results in milligrams per liter (mg/L)							
Soluble Threshold Limit Concentrations			*15*	*5.0*	*100*	*1.0*	*5.0*	*80*	*25*	*5.0*
CMT3a-12	11/29/10	1.0	< 1	< 1	0.6	< 0.2	< 1	< 0.2	< 2	< 0.5
CMT5a-4	11/30/10	0.33	< 1	< 1	1.8	< 0.2	< 1	< 0.2	< 2	< 0.5
CMT7a-4	11/30/10	0.33	< 1	< 1	0.62	< 0.2	< 1	< 0.2	< 2	< 0.5
RMDS	11/18/10	0	< 1	< 1	0.85	< 0.2	< 1	< 0.2	6	< 0.5
RMT3z-8	11/30/10	0.66	< 1	< 1	0.78	< 0.2	< 1	< 0.2	< 2	< 0.5
RMT3z-8 dup	11/30/10	0.66	< 1	< 1	0.67	< 0.2	< 1	< 0.2	< 2	< 0.5
RMT6a-5	11/30/10	0.42	< 1	< 1	2.6	< 0.2	2	0.58	< 2	< 0.5
RMT8b-15	12/01/10	1.25	< 1	< 1	1.7	< 0.2	1.5	< 0.2	< 2	< 0.5

Sample	Date	Sample Depth (feet bgs)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			All results in milligrams per liter (mg/L)							
Soluble Threshold Limit Concentrations			*0.2*	*350*	*20*	*1.0*	*5.0*	*7.0*	*24*	*250*
CMT3a-12	11/29/10	1.0	0.11	< 1	< 1	< 2	< 0.5	< 1	< 1	< 2
CMT5a-4	11/30/10	0.33	0.0031	< 1	< 1	< 2	< 0.5	< 1	< 1	< 2
CMT7a-4	11/30/10	0.33	< 0.05	< 1	< 1	< 2	< 0.5	< 1	< 1	< 2
RMDS	11/18/10	0	< 0.05	1.8	< 1	< 2	< 0.5	< 1	< 1	6.1
RMT3z-8	11/30/10	0.66	< 0.05	< 1	1.2	< 2	< 0.5	< 1	< 1	< 2
RMT3z-8 dup	11/30/10	0.66	0.0031	< 1	< 1	< 2	< 0.5	< 1	< 1	< 2
RMT6a-5	11/30/10	0.42	< 0.05	< 1	11	< 2	< 0.5	< 1	< 1	< 2
RMT8b-15	12/01/10	1.25	**2.3**	< 1	6.7	< 2	< 0.5	< 1	< 1	< 2

Notes:
Soluble Threshold Limit Concentrations (STLC's) obtained from CCR Title 22 Chapter 11, Article 3, Table 2
CAM-17 Total Metals and CAM-17 Metals DI WET Method performed at Test America San Francisco;
DI WET Analysis = California Waste Extraction Test with deionized (DI) water extract. (§66700 of Title 22, CCR)
Shaded, **bolded** value represents a result in exceedence of STLC

Table A-5
Toxicity Characteristic Leaching Procedure and Waste Extraction Test Results

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site

Sample	Date	Arsenic	Arsenic	Barium	Barium	Cadmium	Cadmium	Chromium	Chromium	Lead	Lead
		All results in milligrams per liter (mg/L)									
Lab Preparation Type		DI WET	TCLP	DI WET	TCLP	DI WET	TCLP	DI WET	TCLP	DI WET	TCLP
Regulatory Level		*5.0*	*5.0*	*100*	*100*	*1.0*	*1.0*	*5.0*	*5.0*	*5.0*	*5.0*
CMT3a-12	11/29/10	< 1	< 0.25	0.6	< 0.12	< 0.2	< 0.062	< 1	< 0.25	< 0.5	< 0.12
CMT5a-4	11/30/10	< 1	< 0.25	1.8	< 0.12	< 0.2	< 0.062	< 1	< 0.25	< 0.5	< 0.12
CMT7a-4	11/30/10	< 1	< 0.25	0.62	< 0.12	< 0.2	< 0.062	< 1	< 0.25	< 0.5	< 0.12
RMDS	11/18/10	< 1	< 0.25	0.85	0.63	< 0.2	< 0.062	< 1	< 0.25	< 0.5	< 0.12
RMT3z-8	11/30/10	< 1	< 0.25	0.78	< 0.12	< 0.2	< 0.062	< 1	< 0.25	< 0.5	< 0.12
RMT3z-8 dup	11/30/10	< 1	< 0.25	0.67	< 0.12	< 0.2	< 0.062	< 1	< 0.25	< 0.5	< 0.12
RMT6a-5	11/30/10	< 1	< 0.25	2.6	< 0.12	< 0.2	< 0.062	2	< 0.25	< 0.5	< 0.12
RMT8b-15	12/01/10	< 1	< 0.25	1.7	0.68	< 0.2	< 0.062	1.5	< 0.25	< 0.5	< 0.12

Sample	Date	Mercury	Mercury	Selenium	Selenium	Silver	Silver
		All results in milligrams per liter (mg/L)					
Lab Preparation Type		DI WET	TCLP	DI WET	TCLP	DI WET	TCLP
Regulatory Level		*0.2*	*0.2*	*1.0*	*1.0*	*5.0*	*5.0*
CMT3a-12	11/29/10	0.11	< 0.002	< 2	< 0.5	< 0.5	< 0.12
CMT5a-4	11/30/10	< 0.05	0.0031	< 2	< 0.5	< 0.5	< 0.12
CMT7a-4	11/30/10	< 0.05	< 0.002	< 2	< 0.5	< 0.5	< 0.12
RMDS	11/18/10	< 0.05	< 0.002	< 2	< 0.5	< 0.5	< 0.12
RMT3z-8	11/30/10	< 0.05	< 0.002	< 2	< 0.5	< 0.5	< 0.12
RMT3z-8 dup	11/30/10	< 0.05	0.0031	< 2	< 0.5	< 0.5	< 0.12
RMT6a-5	11/30/10	< 0.05	< 0.002	< 2	< 0.5	< 0.5	< 0.12
RMT8b-15	12/01/10	**2.3**	0.012	< 2	< 0.5	< 0.5	< 0.12

Notes:
Samples reported in mg/L by Test America San Francisco
TCLP Analysis = toxicity characteristic leaching procedure for the Resource Conservation and Recovery Act (RCRA) 8 metals.
DI WET Analysis = California Waste Extraction Test conducted with extract solution of deionized water instead of standard Citrate Buffer. (§66700 of Title 22, CCR)
Regulatory Level for TCLP is the Maximum Concentration of Contaminants for the Toxicity Characteristic, provided in CCR Title 22 Chapter 11, Article 3, Table 1
Regulatory Level for WET is the DTSC Soluble Threshold Limit Concentrations (STLCs), provided in CCR Title 22 Chapter 11, Article 3, Table 2
B**olded** value represents a result in exceedance of the Regulatory Level

Table A-6
Surface Water and Groundwater Analytical Sample Results

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site

Sample	Date	Sample type	Antimony	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Silver	Thallium	Vanadium	Zinc
			All results in milligrams per liter (mg/L)														
*BLM Human Risk Management Criteria for Metals in Surface Water at Mining Sites - Camper**			*0.124*	*0.093*	*NE*	*0.155*	*NE*	*NE*	*11.490*	*0.050*	*0.093*	*NE*	*6.194*	*1.548*	*NE*	*NE*	*92.909*
CMDS/RMUS	11/16/10	Surface Water	< 0.01	< 0.01	0.044	< 0.0025	< 0.01	< 0.002	< 0.02	< 0.005	< 0.0002	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	< 0.02
CMmid	11/16/10	Surface Water	< 0.01	< 0.01	0.057	< 0.0025	< 0.01	< 0.002	< 0.02	< 0.005	< 0.0002	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	< 0.02
CMUS	11/16/10	Surface Water	**0.957**	**0.911**	1.04	**0.953**	1.0	0.945	1.0	**0.959**	< 0.0002	0.986	0.942	0.501	0.969	0.999	0.953
RMDS	11/16/10	Surface Water	< 0.01	< 0.01	0.032	< 0.0025	< 0.01	< 0.002	< 0.02	< 0.005	< 0.0002	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	< 0.02
RMmid	11/16/10	Surface Water	< 0.01	< 0.01	0.036	< 0.0025	< 0.01	< 0.002	< 0.02	< 0.005	< 0.0002	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	< 0.02
Cal-EPA Water Quality Goals Screening Criteria - MCLs			*0.006*	*0.01*	*1*	*0.005*	*0.05*	*NE*	*1.3***	*0.015***	*0.002*	*NE*	*0.1*	*100*	*0.002*	*NE*	*NE*
Cal-EPA Water Quality Goals Screening Criteria - PHGs			*0.02*	*0.000004*	*2*	*0.00004*	*NE****	*NE*	*0.3*	*0.0002*	*0.0012*	*NE*	*0.012*	*NE*	*0.0001*	*NE*	*NE*
CW-1	11/19/10	Groundwater	< 0.01	< 0.01	< 0.005	< 0.0025	< 0.01	< 0.002	< 0.02	< 0.005	< 0.0002	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	< 0.02
RW-1	11/19/10	Groundwater	< 0.01	< 0.01	0.028	< 0.0025	< 0.01	< 0.002	< 0.02	< 0.005	< 0.0002	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	< 0.02
Spring	11/19/10	Groundwater	< 0.01	< 0.01	< 0.005	< 0.0025	0.025	< 0.002	< 0.02	< 0.005	< 0.0002	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	< 0.02
Spring (Duplicate)	11/19/10	Groundwater	< 0.01	< 0.01	< 0.005	< 0.0025	0.028	< 0.002	< 0.02	< 0.005	< 0.0002	< 0.01	< 0.01	< 0.005	< 0.01	< 0.01	< 0.02

Notes:
Surface water and groundwater reported in mg/L by Test America San Francisco
USEPA = United States Environmental Protection Agency
Cal-EPA = California Environmental Protection Agency
NE = Not Established
PHG = Public Health Goal
MCL - Maximum Contaminant Limit; *Chemicals with MCLs in 22 CCR §64431—Inorganic Chemicals*

CMDS/RMUS = Downstream of Chicago Mine and Upstream of Research Mine
CMmid = Midway through Chicago Mine Area
CMUS = Chicago Mine Upstream
RMDS = Research Mine Downstream
RMmid = Midway through Research Mine Area

* *Source: United States Department of the Interior, Bureau of Land Management. 2004. Risk Management Criteria for Metals at BLM Mining Sites.*
** *22 CCR §64672.3: Values referred to as MCLs for lead and copper are not actually MCLs; they are "Action Levels" under the lead and copper rule.*
*** *California Office of Environmental Health Hazard Assessment withdrew the 0.0025-mg/L PHG in Nov. 2001*
Bold samples exceed relevant regulatory level

TRENCH LOGS

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site
Lake County, California

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	11/29/2010	field notes page:	1
Weather:	overcast	Mine Grid:	Chicago Grid B		
TRENCH:	CMT-01	Near NODE/NODES:	CM-45		
Original XRF Node Hg ppm concentration		40 ppm			
Former road cut, near first CW attempt, and old refrigerator					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
4"	***13ppm***	24	Dark brown soil with 70% angular gravel to 3" (tailings)	CMT1a
12"	***23ppm***	25	Large cobbles/bedrock, green-white serpentine	CMT1b
18"	***0ppm***	26	Soft clayey weathered serpentine	CMT1c
22"	***0ppm***	27	Soft clayey weathered serpentine	CMT1d

Inspectors:	Chris Mc./Jim V.	DATE:	11/29/2010	field notes page:	1
Weather:	overcast	Mine Grid:	Chicago Grid B		
TRENCH:	CMT-02	Near NODE/NODES:	CM-31		
Original XRF Node Hg ppm concentration		232 ppm			
Flat triangle area, at tributary crossing, clearing below pits					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
4"	***42ppm***	28	Dark brown soil with 50% angular cobbles to 1/2", probable tailings	CMT2a
11"	***44ppm***	29	Dark brown soil with 70% angular cobbles to 3", probable tailings	CMT2b
21"	***0ppm***	30	Dark brown soil with 80% angular cobbles to 5", probable tailings	CMT2c
24"	***0ppm***	31	Dark brown soil and bedrock	CMT2d

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	11/29/2010	field notes page:	2
Weather:	overcast	Mine Grid:	Chicago Grid A		
TRENCH:	CMT-03	Near NODE/NODES:	CM-23		
Original XRF Node Hg ppm concentration		491 ppm			
On slight slope @ trail to upper mine area, just below pit.					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
12"	***382ppm***	32	Dark red brown soil with serpentine cobbles to 24"	CMT3a
			Took soil sample CMT03-12" for ABA and CAM 17.	
22"	***10ppm***	33	Soil change to Greenish gray weathered serpentine soil.	CMT3b
25"	***0ppm***	34	Gray-green weathered serpentine soil and bedrock.	CMT3c
27"	***0ppm***	35	Gray-green to brown weathered serpentine soil and bedrock.	CMT3d

Inspectors:	Chris Mc./Jim V.	DATE:	11/29/2010	field notes page:	2
Weather:	overcast	Mine Grid:	Chicago Grid A		
TRENCH:	CMT-04	Near NODE/NODES:	CM-12		
Original XRF Node Hg ppm concentration		117 ppm			
Slope below furnace.					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
6"	***35ppm***	36	Dark red brown soil with tailings.	CMT4a
			Took soil sample CMT04-6" for ABA only.	
17"	***27ppm***	37	Brick and burnt debris at 15". Dark red brown soil with tailings.	CMT4b
24" + 60"	***64ppm***	38	moved down slope 5', Greenish gray soil and tailings	CMT4c
35" + 60"	***11ppm***	39	Gray serpentine bedrock on road to collapsed load rack	CMT4d
39" + 60"	***0ppm***	40	Degraded gray serpentine bedrock, below road level	CMT4e

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	11/30/2010	field notes page:	3
Weather:	Clear	Mine Grid:	Chicago Grid A		
TRENCH:	CMT-05	Near NODE/NODES:	CM-10		
Original XRF Node Hg ppm concentration		271 ppm			
On outer slope of pit near load shoot.					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
4"	***232ppm***	3	Dark red brown soil	CMT5a
			Took soil sample CMT05-4" for ABA and CAM 17.	
24"	***16ppm***	4	Coarse cobbles, 8"-12" from 5" deep on. Shots on cobbles	CMT5b
24"	***31ppm***	5	Coarse cobbles, 8"-12" from 5" deep on. Shots on cobbles	CMT5b
24"	***98ppm***	6	Coarse cobbles, 8"-12" from 5" deep on. Shots on cobbles	CMT5b
36"	***39ppm***	7	Coarse cobbles, 8"-12" from 5" deep on. Shots on cobbles	CMT5c
36"	***21ppm***	8	Coarse cobbles, 8"-12" from 5" deep on. Shots on cobbles	CMT5c
36"	***14ppm***	9	Coarse cobbles, 8"-12" from 5" deep on. Shots on cobbles	CMT5c

Inspectors:	Chris Mc./Jim V.	DATE:	11/30/2010	field notes page:	3
Weather:	Clear	Mine Grid:	Chicago Grid A		
TRENCH:	CMT-06	Near NODE/NODES:	CM-09		
Original XRF Node Hg ppm concentration		696 ppm			
On interior of Upper pit					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
8"	***1541ppm***	10	Medium red brown soil	CMT6a
			Took soil sample CMT06-8" for ABA only.	
22"	***233ppm***	11	Dark red soil	CMT6b
32"	***236ppm***	12	dark red to gray brown soil with tailings	CMT6c
48"	***0ppm***	13	gray soil with weathered serpentine	CMT6d
48"			Large boulder, not digable or moveable	

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	11/30/2010	field notes page:	4
Weather:	Clear	Mine Grid:	Chicago Grid A		
TRENCH:	CMT-07	Near NODE/NODES:	CM-13		
Original XRF Node Hg ppm concentration		11 ppm			
Tailings slope into Dry Creek					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
4"	***15ppm***	14	Gray brown gravel (sand-6" tailings) with some gray soil	CMT7a
			Took soil sample CMT07-4" for ABA and CAM 17.	
18"	***0ppm***	15	Gray tailings	CMT7b
24"	***0ppm***	16	Gray tailings	CMT7c
			At or near base of tailings at Dry Creek	

TRENCH LOGS

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Lake County, California

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	12/1/2010	field notes page:	5
Weather:	Clear	Mine Grid:	Chicago Grid B		
TRENCH:	CMT-08	Near NODE/NODES:	CM-47		
Original XRF Node Hg ppm concentration		0 ppm			
Tailings pile at top of hill at exploration trench					
DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*	
12"	***0ppm***	28	tailings pile	CMT8	
Inspectors:	Chris Mc./Jim V.	DATE:	12/1/2010	field notes page:	5
Weather:	Clear	Mine Grid:	Chicago Grid B		
TRENCH:	CMT-09	Near NODE/NODES:	CM-44		
Original XRF Node Hg ppm concentration		0 ppm			
at bunkhouse crossing					
DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*	
12"	***0ppm***	29	red brown soil and tailings	CMT9	

TRENCH LOGS

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Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	12/1/2010	field notes page:	5
Weather:	Clear	Mine Grid:	Chicago Grid A		
TRENCH:	CMT-10	Near NODE/NODES:	In square formed by CM-04, CM-05, CM-11 and CM-12		
Original XRF Node Hg ppm concentration		0ppm, 0ppm			
6' from Chicago furnace towards creek		53ppm, 117ppm			
DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*	
8"	***29ppm***	30	red brown soil and tailings	CMT10	

Inspectors:	Chris Mc./Jim V.	DATE:	12/1/2010	field notes page:	5
Weather:	Clear	Mine Grid:	Chicago Grid A		
TRENCH:	CMT-11	Near NODE/NODES:	In square formed by CM-04, CM-05, CM-11 and CM-12		
Original XRF Node Hg ppm concentration		0ppm, 0ppm			
1' from Chicago furnace on west side		53ppm, 117ppm			
DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*	
1"	***42ppm***	31	red brown soil and tailings	CMT11a	
8"	***457ppm***	32	red brown soil and tailings	CMT11b	

TRENCH LOGS

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site
Lake County, California

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	12/1/2010	field notes page:	6
Weather:	Clear	Mine Grid:		Chicago Grid A	
TRENCH:	CMT-12	Near NODE/NODES:		CM-11	
Original XRF Node Hg ppm concentration		53 ppm			
Above collapsed load structure at RR tracks					
DEPTH in inches	Hg ppm	XRF	Lithology		*Trench sample ID*
14"	***750ppm***	33	Medium brown tailings and soil		CMT12a
24"	***61ppm***	34	Gray soil and tailings		CMT12b
Inspectors:	Chris Mc./Jim V.	DATE:	12/1/2010	field notes page:	6
Weather:	Clear	Mine Grid:		Chicago Grid A	
TRENCH:	CMT-13	Near NODE/NODES:		between CM-11 and CM-04	
Original XRF Node Hg ppm concentration		53 ppm and 0 ppm			
Flat tailing area					
DEPTH in inches	Hg ppm	XRF	Lithology		*Trench sample ID*
1"	***0ppm***	35	1/4" to 1" tailing rock		CMT13a
10"	***104ppm***	36	1/4" to 1" tailing rock		CMT13b
15"	***12ppm***	37	1/4" to 1" tailing rock		CMT13c

TRENCH LOGS

Engineering Evaluation/Cost Analysis Report
The Chicago Research Site
Lake County, California

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	12/1/2010	field notes page:	6
Weather:	Clear	Mine Grid:		Chicago Grid A	
TRENCH:	CMT-14	Near NODE/NODES:		CM-02	
Original XRF Node Hg ppm concentration			11 ppm		
At mine entrance					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
8"	***16ppm***	38	red brown soil with 1"-2" tailings	CMT14a
15"	***13ppm***	39	red brown soil with 1"-2" tailings	CMT14-b
15"	***62ppm***	40	red brown mud on mine floor inside	CMT-14c

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	11/30/2010	field notes page:	7
Weather:	Clear	Mine Grid:	Research Grid A		
TRENCH:	RMT-01	Near NODE/NODES:	RM-08		
Original XRF Node Hg ppm concentration		0 ppm			
At top of road, at exploration cut bench, no vegetation					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
4"	***0ppm***	18	Tan soil with tailings	RMT1a
12"	***0ppm***	19	Tan to brown soil with tailings to 2"	RMT1b
18"	***0ppm***	20	Yellow soil with tailings	RMT1c

Inspectors:	Chris Mc./Jim V.	DATE:	11/30/2010	field notes page:	7
Weather:	Clear	Mine Grid:	Research Grid A		
TRENCH:	RMT-02	Near NODE/NODES:	RM-26		
Original XRF Node Hg ppm concentration		12 ppm			
On steep slope on North side of Dry Creek below cut described above. NO vegetation.					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
1"	***0ppm***	22	Soft light brown gravelly soil with tailing/talus mix, on edge of soft brecciated serpentine bedrock gully	RMT2a
4"	***0ppm***	23	Soft serpentine bedrock with dark red veins	RMT2b

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	11/30/2010	field notes page:	8
Weather:	Overcast	Mine Grid:	Research Grid B		
TRENCH:	RMT-03	Near NODE/NODES:	RM-37		
Original XRF Node Hg ppm concentration		73 ppm			
Above main road near crossing, below yellow soil area.					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
8"	***191ppm***	26	Yellow soil layer in dark brown soil cut.	RMT3z
			Took soil sample RMT03-8" for ABA and CAM 17.	
8"	***80ppm***	27	Yellow soil approx. 15' away	RMT3y
18"	***8ppm***	25	Mix of dark brown soil, yellow soil and gray serp soil	RMT3a
24"	***0ppm***	28	Dark brown soil with brown tailings	RMT3b
26"	***0ppm***	29	Dark brown soil with brown tailings	RMT3c

Inspectors:	Chris Mc./Jim V.	DATE:	11/30/2010	field notes page:	8
Weather:	Dark clouds	Mine Grid:	Research Grid B		
TRENCH:	RMT-04	Near NODE/NODES:	RM-53		
Original XRF Node Hg ppm concentration		0 ppm			
At lower Research Mine, flat area with scrap metal and coke, on tailing nose above Dry Creek					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
2"	***0ppm***	30	Red brown soil with 50% tailings from 1/4" to 3"	RMT4a
16"	***0ppm***	31	Red brown soil with 50% tailings from 2" to 16"	RMT4b
0"	***0ppm***	32	Coke/slag scattered over area	RMT4c

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	11/30/2010	field notes page:	9
Weather:	Dark clouds	Mine Grid:	Research Grid B		
TRENCH:	RMT-05	Near NODE/NODES:	RM-60		
Original XRF Node Hg ppm concentration		17 ppm			
At lower Research Mine, flat area on road beyond and around collapsed furnace					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
1"	***0ppm***	33	Dug on downhill edge of road, red brown soil with tailings	RMT5a
12"	***0ppm***	34	Red brown to gray soil with tailings	RMT5b
1"	***17ppm***	35	Moved to collapsed furnace approx. 60' along road, brown soil with tails	RMT5c
4"	***0ppm***	36	Moved to uphill side of furnace, red brown soil with tailings	RMT5d

Inspectors:	Chris Mc./Jim V.	DATE:	11/30/2010	field notes page:	9
Weather:	Mist-drizzle	Mine Grid:	Research Grid B		
TRENCH:	RMT-06	Near NODE/NODES:	RM-40		
Original XRF Node Hg ppm concentration		17 ppm			
At crossroad above refer on branch road, uphill side of road, appears native.					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
5"	***13ppm***	37	Dark red native? soil	RMT6a
			Took soil sample RMT06-5" for ABA and CAM 17.	
16"	***0ppm***	38	Dark red to tan soil with some bedrock	RMT6b
24"	***15ppm***	39	Tan soil with dark red veins	RMT6c
24"	***15ppm***	40	Dark red veins from above	RMT6d

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	11/30/2010	field notes page:	10
Weather:	Rain	Mine Grid:	Research Grid B		
TRENCH:	RMT-07	Near NODE/NODES:	RM-79		
Original XRF Node Hg ppm concentration		0 ppm			
Along main road above furnaces					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
8"	***0ppm***	41	Uphill side of road, dark gray brown gravelly soil, native?	RMT7a
			Ti=1143 ppm	

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	12/1/2010	field notes page:	11
Weather:	Clear	Mine Grid:	Research Grid B		
TRENCH:	RMT-08	Near NODE/NODES:	RM-100		
Original XRF Node Hg ppm concentration		309 ppm			
off corner of collapsed furnace					

DEPTH in inches	Hg ppm	XRF	Lithology			*Trench sample ID*
6"	***121ppm***	6	Brown gravelly soil, sandy to 18" cobbles Took soil sample RMT08-6"" for ABA only.		original trench	RMT8a
15"	***625ppm***	7	Bricks, light brown soil with tailings Took soil sample RMT08-15"" for ABA and CAM 17.		original trench	RMT8b
22"	***750ppm***	8	Gray fractured bedrock/tailings		original trench	RMT8c
24"	***278ppm***	9	Gray fractured bedrock/tailings		original trench	RMT8z
30"	***917ppm***	10	Gray fractured bedrock/tailings		original trench	RMT8y
4"	***408ppm***	11	Started Aux trench on edge of cliff to creek, 8' away, brown soil + tail			RMT8x
31"	***312ppm***	12	Rock from bottom at 31"		Aux trench	RMT8w
1"	***66ppm***	13	15' north, 10' in front of furnace #3	brown gravelly soil	Satellite trench	RMT8v
8"	***130ppm***	14	15' north, 10' in front of furnace #3	brown gravelly soil	Satellite trench	RMT8u
36"	***1553ppm***	15	Brown soil and tailings at 36" deep		original trench	RMT8d
36"	***637ppm***	16	Rock from 36" deep.		original trench	RMT8t

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	12/1/2010	field notes page:	11
Weather:	Clear	Mine Grid:	Research Grid B		
TRENCH:	RMT-08	Near NODE/NODES:	RM-100		
Original XRF Node Hg ppm concentration		309 ppm			
off corner of collapsed furnace					

DEPTH in inches	Hg ppm	XRF	Lithology			*Trench sample ID*
4"	***10ppm***	17	35' north, 10' in front of furnace #2	brown gravelly soil	Satellite trench	RMT8s
11"	***77ppm***	18	35' north, 10' in front of furnace #2	brown gravelly soil	Satellite trench	RMT8r
1"	***26ppm***	19	Between furnace #1 and #2	brown gravelly soil	Satellite trench	RMT8q
12"	***22ppm***	20	Between furnace #1 and #2	brown gravelly soil	Satellite trench	RMT8p
24"	***1066ppm***	21	Dark brown soil with tailings to 6"		Aux trench	RMT8o
36"	***21ppm***	22	Tan-yellow soil with tailings		Aux trench	RMT8n
48"	***9ppm***	23	Dark brown soil with tailings to 6"		Aux trench	RMT8m
60"	***9ppm***	24	Dark brown soil with tailings to 6"		Aux trench	RMT8l
66"	***59ppm***	25	Dark brown soil with tailings to 6"		Aux trench	RMT8k
72"	***0ppm***	26	Dark brown soil with tailings to 6"		Aux trench	RMT8j

RMT 8 consists of an original trench, an Auxiliary trench that was started 8' towards the creek as a notch type excavation.
Also 3 satellite trenches were dug near each of the other furnaces.

Trench Details

Inspectors:	Chris Mc./Jim V.	DATE:	12/1/2010	field notes page:	11
Weather:	Clear	Mine Grid:	Research Grid B		
TRENCH:	RMT-09	Near NODE/NODES:	RM-94		
Original XRF Node Hg ppm concentration		257 ppm			
steep slope above largest furnace, above deadfall					

DEPTH in inches	Hg ppm	XRF	Lithology	*Trench sample ID*
6"	***175ppm***	2	Brown gravelly soil with tailings Took soil sample RMT09-6" for ABA only.	RMT9a
18"	***27ppm***	3	Brown gravelly soil with large gray cobble	RMT9b
28"	***69ppm***	4	Gray cobble appears to be bedrock, hard, greywacke	RMT9c
32"	***0ppm***	5	Gray bedrock, brown soil filtering down into fractures.	RMT9d

DRILL LOG

Chicago Well 1		Driller:Chris Mc./Jim V.		Start Date: 11/8/2010	**CW-1**
TD	5.5	Dia.	10"	End Date: 11/9/2010	**SB-1/Refusal**
DTW:	N/A	Did boring yield water?	No	Drill type: Hand auger, solid stem	

Depth	Class	Lithology and sample locations
0-4.5'	GC	Gravel with cobbles (5") with matrix of dark brown clayey-silty soil, and organic dark brown clayey soil. Dry.
4.5'-5.5'	GC	Gravel with cobbles (8") with matrix of dark brown clayey-silty soil, refusal at large boulder or bedrock. Dry.

COMPLETION	**LOCATION**	Northing	Easting	Elevation
Backfilled to grade	GPS-	38-44.629	122-42.164	2595'

COMMENTS 11/8/10, mobilize to site. Heavy rains previous day (11/7/2010). All streams flowing strong. Cleared fresh deadfalls and brush. Mobilized equipment to Chicago well location and started drilling at SB-1. Used Drill machine, clamshell, digging bar and shovels. Made hole till dark, 4.5'. 11/9/2010, Continued drilling while encountering larger and harder cobbles to 8". At 5.5' hit refusal on large boulder or bedrock. No water. Decided to move close to flowing tributary of Dry Creek. Backfilled to grade with cuttings.

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DRILL LOG

Chicago Well 1		Driller:Chris Mc./Jim V.		Start Date: 11/9/2010	**CW-1**
TD	2	Dia.	10"	End Date: 11/9/2010	**SB-2/Refusal**
DTW:	N/A	Did boring yield water?	No	Drill type: Hand auger, solid stem	

Depth	Class	Lithology and sample locations
0-2'	GC	Dark brown sandy to clayey soil grading to large cobbles/boulders 12"+. Refusal at 2'. Saturated.

COMPLETION	**LOCATION**	Northing	Easting	Elevation
Backfilled to grade	GPS-	38-44.629	122-42.168	2587'

COMMENTS Moved to drill location SB-2, about 7-10' north next to flowing tributary (2' away). Drilled, dug and moved rock to 2' and refusal on very large boulder or bedrock. Decided to moved to location upstream. Backfilled with large boulders.

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DRILL LOG

Research Well 1		Driller:Chris Mc./Jim V.		Start Date: 11/9/2010	**RW-1**
TD	1	Dia.	10"	End Date: 11/9/2010	**SB-2/Refusal**
DTW:	N/A	Did boring yield water?	No	Drill type: Hand auger, solid stem	

Depth	Class	Lithology and sample locations
0-1'	GC	Gravel to boulders + cobbles (20") with matrix of dark brown clayey-silty soil, refusal at large boulder or bedrock. Dry.

COMPLETION	**LOCATION**	Northing	Easting	Elevation
Backfilled to grade	GPS-	38-44.532	122-42.007	2569'

COMMENTS 11/9/10, mobilize to site. Narrow stream canyon on Dry Creek. Stream is flowing strong. Only 1-2' of space on mine side of stream, against steep tall (20'+) banks and cliffs. Below and across from furnace area. Dug to only 1' until refusal on large boulders or bedrock. Dry. Decided to stay with original location.

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DRILL LOG

Chicago Well 1		Driller:Chris Mc./Jim V.		Start Date: 11/9/2010	**CW-1**
TD	4.5'	Dia.	10"	End Date: 11/10/2010	**SB-3/final**
DTW:	3'	Did boring yield water?	Yes	Drill type: Hand auger, solid stem	

Depth	Class	Lithology and sample locations
0-3'	GC	Dark brown clayey gravel, wet.
3'-4.5'	GM	Encountered water. Gravel, 1/4" to 12" cobbles with silt and sand matrix. Saturated and water flowing into boring.

COMPLETION		**LOCATION**	Northing	Easting	Elevation
TOC-4.5'	Blank csg	GPS-	38-44.633	122-42.172	2627'
4.5'-6.5'	2" 0.020 slotted PVC screen	**COMMENTS**	Moved to drill location SB-3, about 40-50' northwest,		
4'-6.5'	#3 Monterey sand	still next to flowing tributary (6' away). Drilled and dug to approx 4.5'			
3'-4'	1/4" hydrated Bentonite pellets	18" of water on bottom of boring. Water level maintained obvious lower			
2'-3'	neat cement seal	level than stream. Built well and installed monument. Raised grade to			
0-2'	Steel monument and concrete support footing	complete seal, and monument. Filled annular monument with sand.			
		Painted casing yellow and locked both well and casing.			

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DRILL LOG

Research Well 1		Driller:Chris Mc./Jim V.		Start Date: 11/9/2010	**RW-1**
TD	3.5'	Dia.	10"	End Date: 11/11/2010	**SB-1/final**
DTW:	2'	Did boring yield water?	Yes	Drill type: Hand auger, solid stem	

Depth	Class	Lithlogy and sample locations
0-2'	GC	Gravel to cobbles and boulders (15") with matrix of dark brown clayey-silty soil.
2'-3.5'	GW	Encountered water at 2'. Large boulder or bedrock at 3.5' refusal. Gravel and sand.

COMPLETION		**LOCATION**	Northing	Easting	Elevation
Backfilled to grade		GPS-	38-44.526	122-42.005	2541'
TOC-3.7'	Blank csg	**COMMENTS**	11/9/10, mobilize to site. Narrow stream canyon		
3.7'-5.2'	2" 0.020 slotted PVC screen	on Dry Creek. Stream is flowing strong. Only 1-2' of space on mine side of			
3.2'-5.2'	#3 Monterey sand	stream, against steep tall (20'+) banks and cliffs. Below and downstream of			
2.2'-3.2'	1/4" hydrated Bentonite pellets	furnace area. Dug to 3.5' below grade. 18" of water into hole, distinctly			
1.2'-2.2'	neat cement seal	below stream level for extended period. Built well and installed monument.			
0-2'	Steel monument and concrete support footing	raised grade to install seal and monument. No water on bentonite			
		seal overnight and seal was below water level.			
		Filled annular monument with sand. Used local rocks to help with raising			
		grade for seal and for monument structure.			
		Painted casing yellow and locked both well and casing.			

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WELL DEVELOPMENT DATA SHEET

Chicago well 1		Sampler:Chris Mc./Jim V.		Start Date:	11/15/2010	**CW-1**
TD	7'	Dia.	2"	Vault Condition:	NEW	
DTW:	N/A	Did well dewater?	No	Gallons actually removed:	4	
Time	Gallons	Temp C	Conductivity	pH	Turbidity	Observations
16:15	1	15.6	600	8.35	65	slight tan
16:20	2	15.4	550	8.34	20	clear
16:23	3	15.4	550	8.13	5.5	clear
16:29	4	15.0	550	8.18	1.5	clear
Depths Referenced To:		PVC TOC			PUMP METHOD:	Peri Pump

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

COMMENTS:

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WELL DEVELOPMENT DATA SHEET

Research well 1		Sampler:Chris Mc./Jim V.		Start Date:	11/15/2010	**RW-1**
TD	N/A	Dia.	2"	Vault Condition:	NEW	
DTW:	N/A	Did well dewater?	No	Gallons actually removed:	4	
Time	Gallons	Temp C	Conductivity	pH	Turbidity	Observations
16:45	0.5	N/A	450	N/A	>200	Brown
16:48	1	12.3	450	8.45	165	tan
16:52	1.75	12.1	400	8.34	85	slight tan
16:55	2.5	11.9	350	8.30	7.5	clear
17:00	3.2	11.8	375	8.27	3.1	clear
17:05	4	11.9	400	8.25	1.5	clear
Depths Referenced To:		PVC TOC			PUMP METHOD:	Peri Pump

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

COMMENTS:

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WELL MONITORING DATA SHEET

Chicago well 1		Sampler:Chris Mc./Jim V.		Start Date:	11/19/2010	**CW-1**
TD	6.5	Dia.	2"	Vault Condition:	NEW	Calculated Purge Volume (3 csg volume) Gallons:
DTW:	5.1*	Did well dewater?	no	Gallons actually removed:	3.5	

Time	Gallons	Temp C	Conductivity	pH	ORP (mv)	Observations
07:15	0.25	12.5	600	8.46	+062	Turb = 1.4 NTU
07:18	1	13.5	500	8.30	+065	Turb = 1.4 NTU
07:23	2	13.8	500	8.21	+069	Turb = 1.5 NTU
07:28	3	13.7	500	8.14	+079	Turb = 1.4 NTU
07:30	Sample	13.7	500	8.03	+087	

Sample DO:	2	Turbidity:	1.1	Duplicates or Blanks:	None
Sampling time:	07:30	Sample Date:	11/19/2010	Laboratory:	Test America
Sample ID:	CW-1	Analyzed for:	Metals	PURGE METHOD:	Peri Pump
Depths Referenced To:		PVC TOC		SAMPLE METHOD:	Dedicated Tubing

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

COMMENTS:

		Northing	Easting	Elevation
*DTW 11/29/10	GPS-	38-44.633	122-42.172	2627'

Measured DTW in well compared to level line and DTW in Tributary next to well, 12/2/2010 9:00AM

DTW in well = 5.29'

DTW in tributary = 3.59'

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WELL MONITORING DATA SHEET

Research well 1		Sampler:Chris Mc./Jim V.		Start Date:	11/19/2010	**RW-1**
TD	5.2	Dia.	2"	Vault Condition:	NEW	Calculated Purge Volume (3 csg volume) Gallons:
DTW:	3.9*	Did well dewater?	No	Gallons actually removed:	3	

Time	Gallons	Temp C	Conductivity	pH	ORP (mv)	Observations
07:45	0.5	10.0	400	8.46	+093	Turb = 4.4 NTU
07:48	1	10.3	400	8.32	+091	Turb = 3.0 NTU
07:53	2	10.3	400	8.32	+095	Turb = 2.5 NTU
07:58	3	10.5	400	8.31	+095	Turb = 1.6 NTU
08:00	Sample	10.4	400	8.32	+096	

Sample DO:	5	Turbidity:	1.5	Duplicates or Blanks:	None
Sampling time:	08:00	Sample Date:	11/19/2010	Laboratory:	Test America
Sample ID:	RW-1	Analyzed for:	Metals	PURGE METHOD:	Peri Pump
Depths Referenced To:		PVC TOC		SAMPLE METHOD:	Dedicated Tubing

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

COMMENTS:

		Northing	Easting	Elevation
* DTW on 12/1/10	GPS-	38-44.526	122-42.005	2541'

Measured DTW in well compared to level line and DTW in Dry Creek next to well, 12/2/2010 8:30AM

DTW in well = 4.05'

DTW in Dry Creek = 3.15'

water level in Dry Creek is same as when sediment sample was taken, flowing strong.

WELL MONITORING DATA SHEET

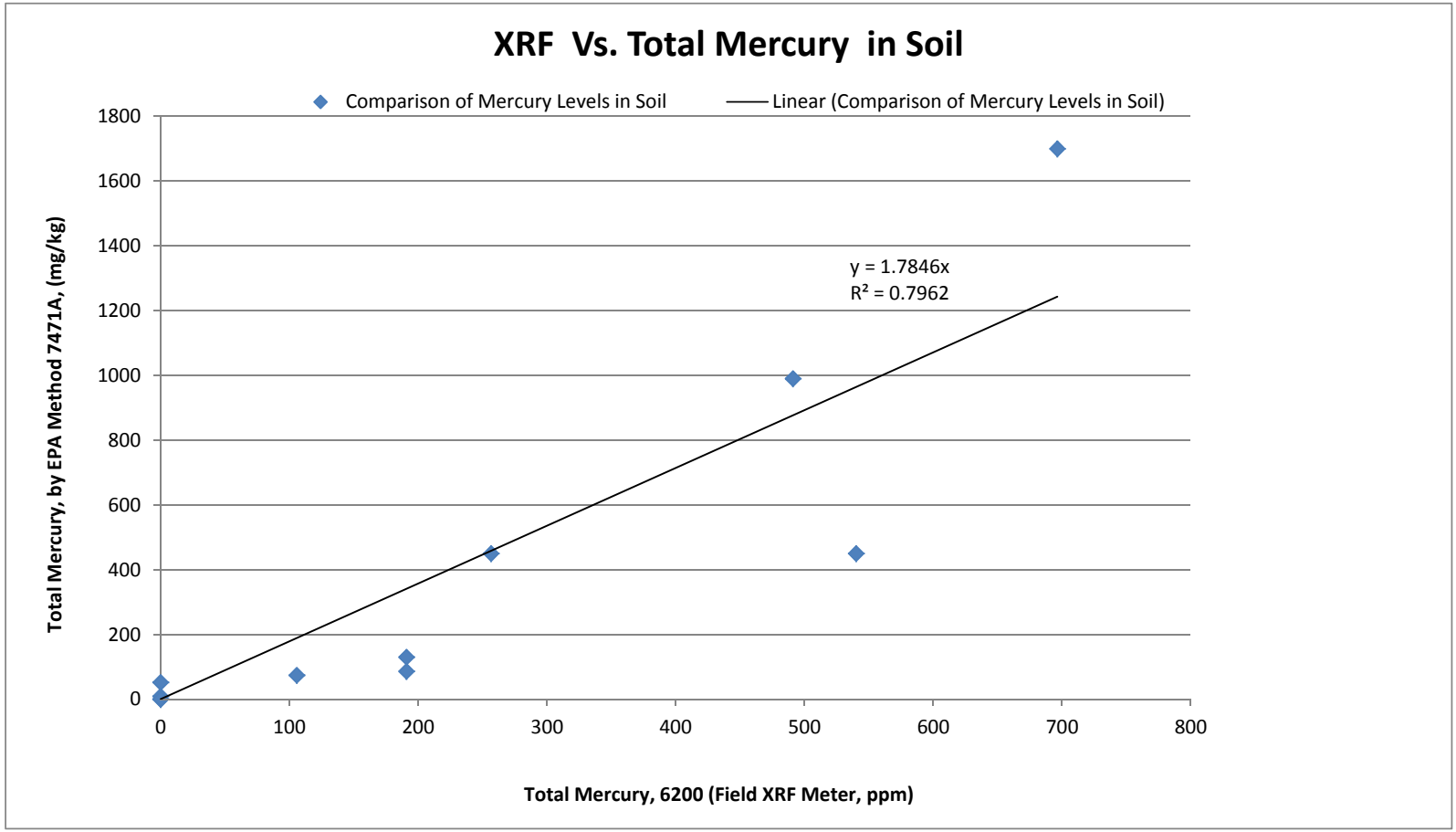
Research well 1		Sampler:Chris Mc./Jim V.		Start Date:	11/19/2010	**SPRING**
TD	N/A	Dia.	2"	Vault Condition:	N/A	Calculated Purge Volume (3 csg volume) Gallons:
DTW:	N/A	Did well dewater?	N/A	Gallons actually removed:	N/A	N/A
Time	Gallons	Temp C	Conductivity	pH	ORP (mv)	Observations
10:30	SAMPLE	11.6	380	8.39	+100	clear, from pipe.

Sample DO:	5	Turbidity:	1.5	Duplicates or Blanks:	SPRING & SPRING DUP
Sampling time:	10:30	Sample Date:	11/19/2010	Laboratory:	Test America
Sample ID:	SPRING	Analyzed for:	Metals	PURGE METHOD:	constant output
Depths Referenced To:		N/A		SAMPLE METHOD:	Grab

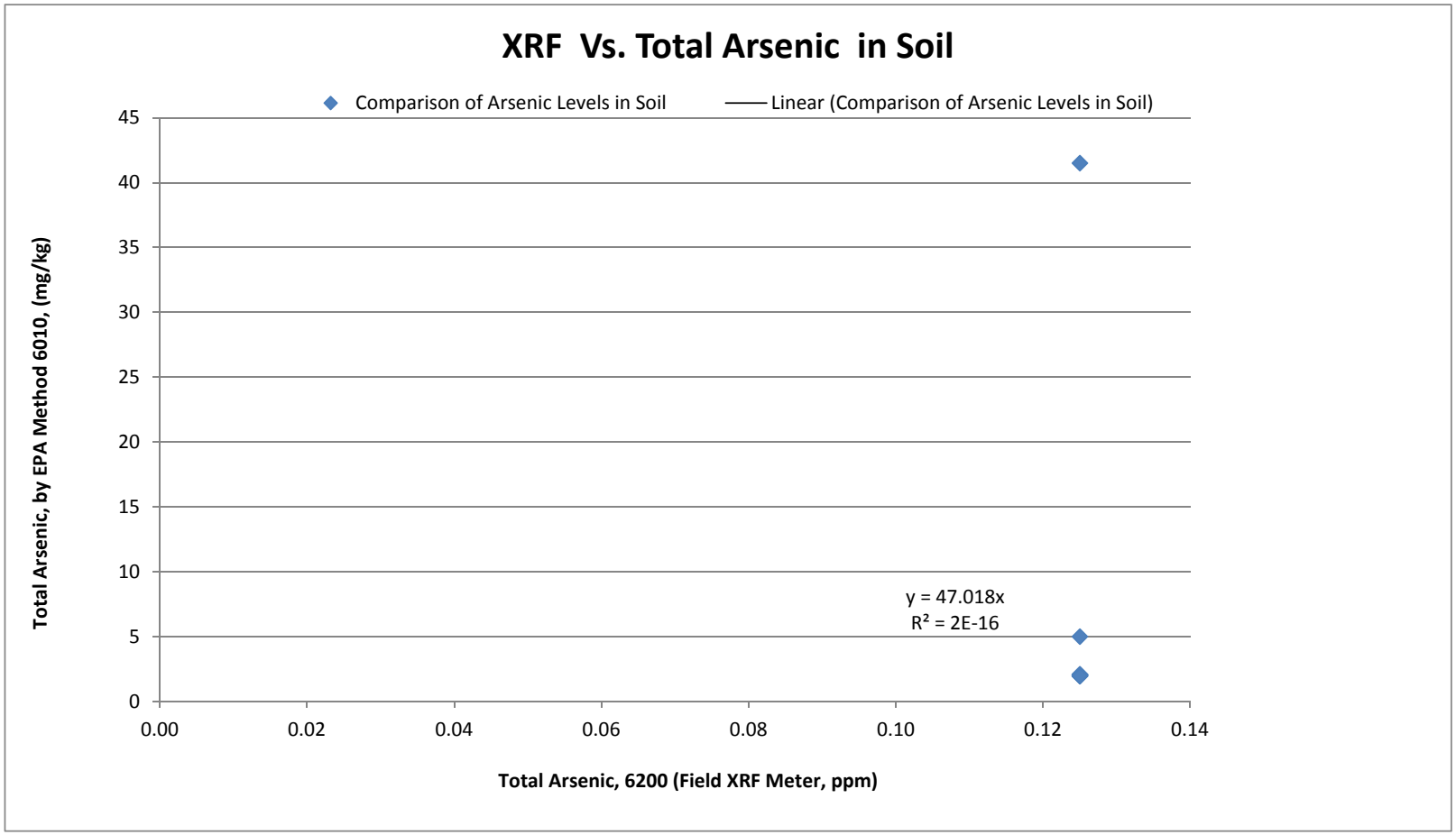
Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

COMMENTS:

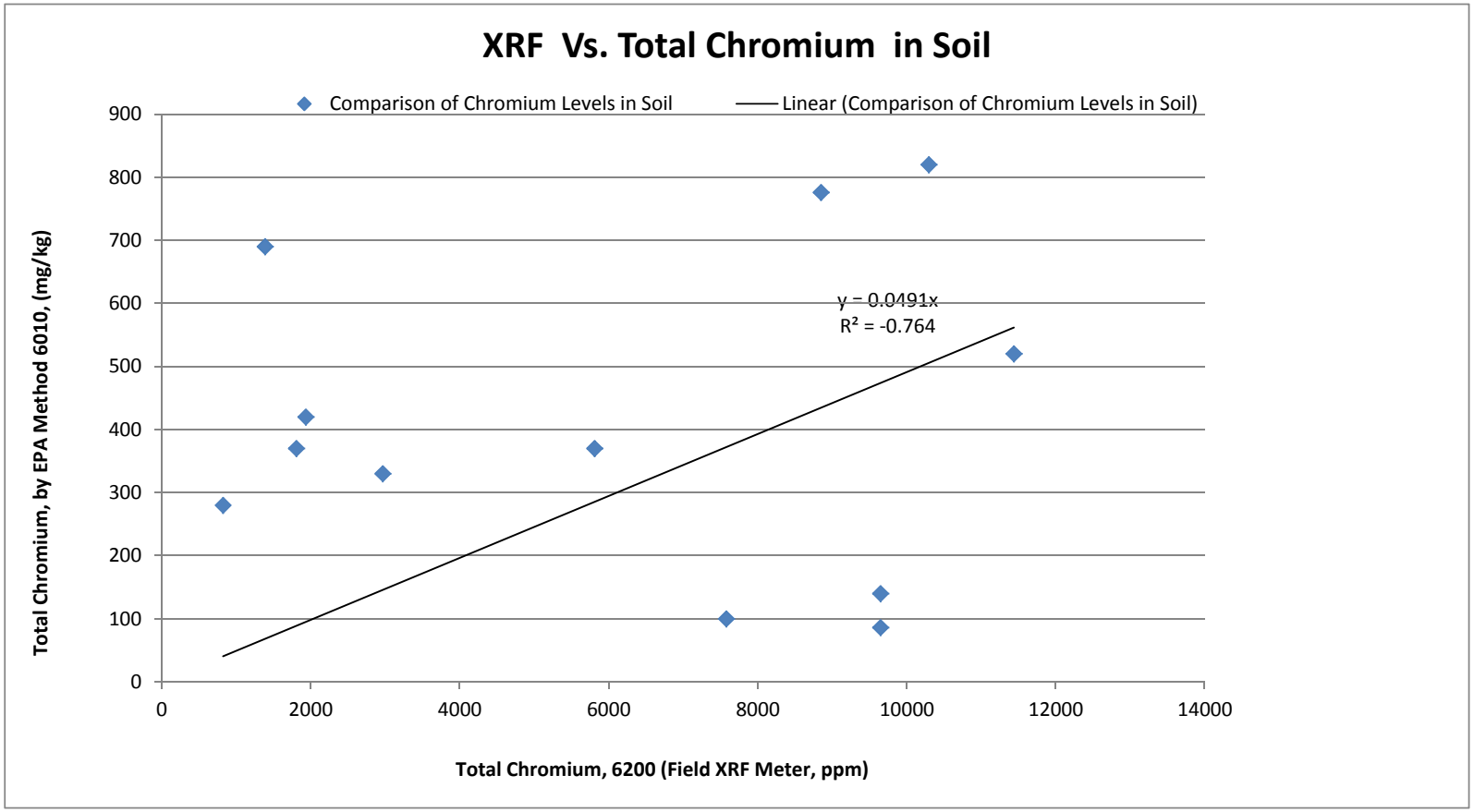
	Northing	Easting	Elevation
GPS-	38-44.686	122-42.157	2763'



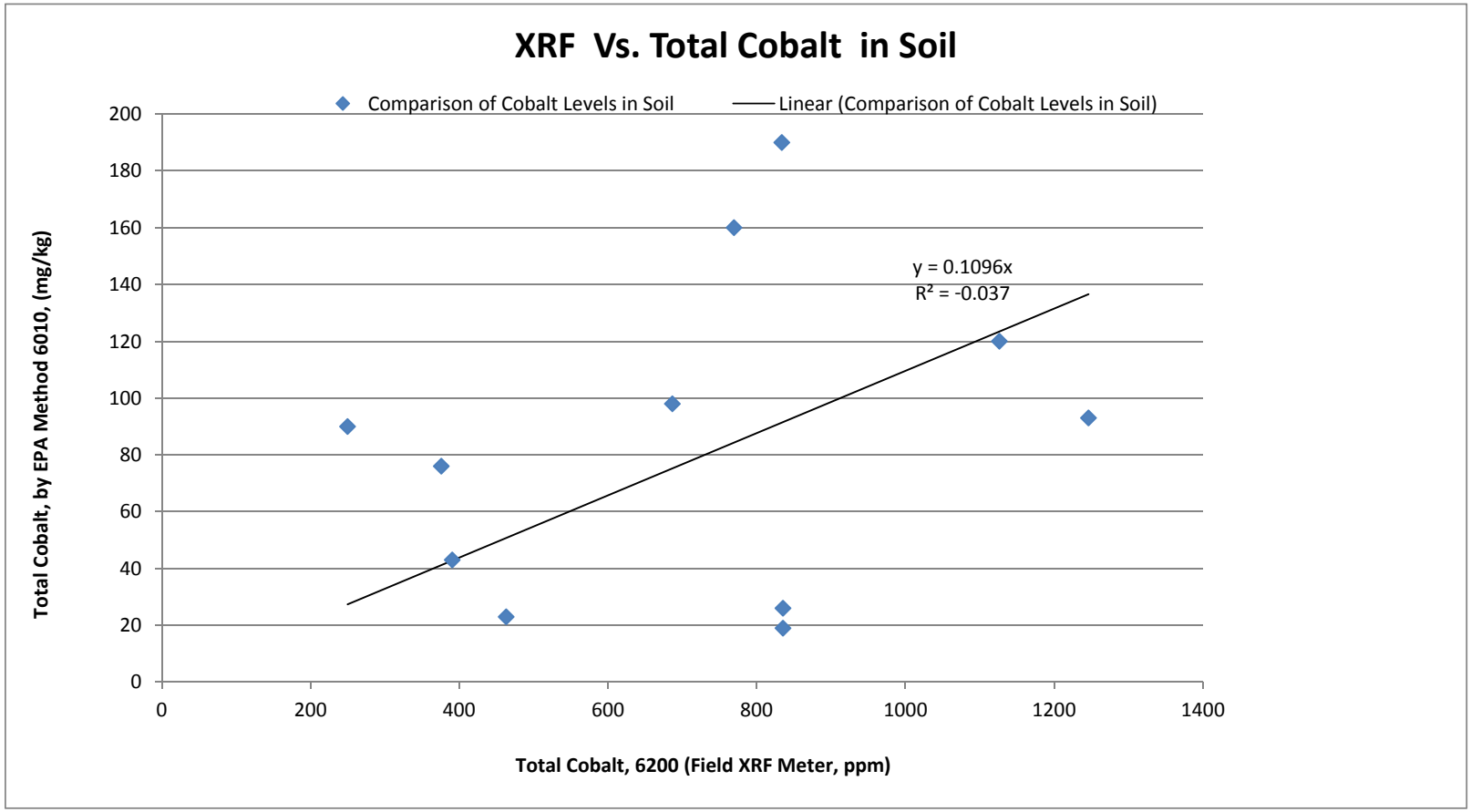
Sample ID	Mercury (mg/kg)	
	XRF	Total/Lab
CM01-S	540	450
CM09-S	696	1700
CM23-S	491	990
CMT3a-12	382	700
RM05-S	<0.25	0.12
RM36-S	106	74
RM43-S	<0.25	52
RM60-S	<0.25	9.2
RM94-S	257	450
RMDS	<0.25	0.22
RMT3z-8	191	86
RMT3z-8 dup	191.01	130



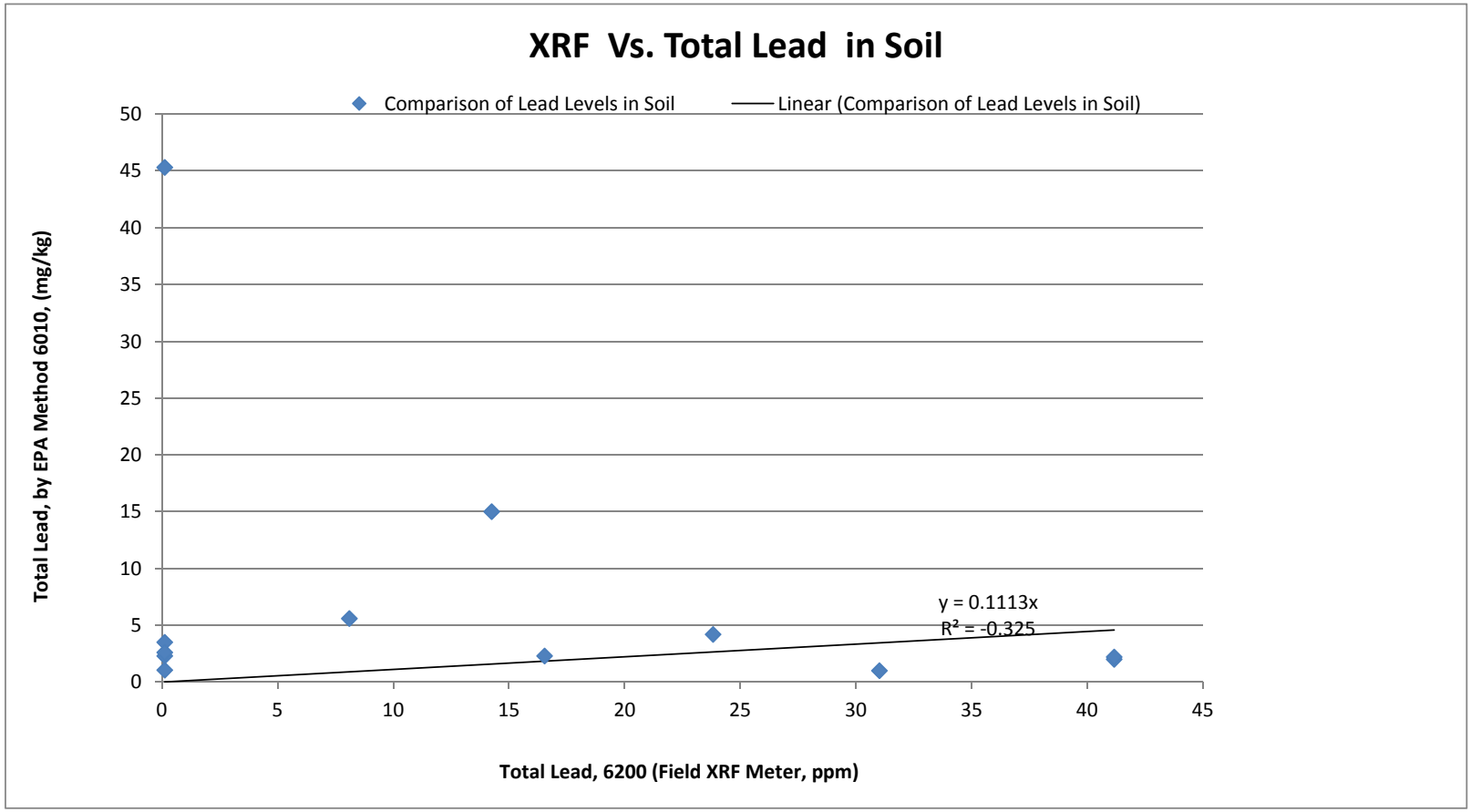
Sample ID	Arsenic (mg/kg)	
	XRF	Total/Lab
CM01-S	<0.25	< 4.1
CM09-S	<0.25	< 3.9
CM23-S	<0.25	5
CMT3a-12	<0.25	41.5
RM05-S	<0.25	< 4.1
RM36-S	<0.25	< 4.1
RM43-S	<0.25	< 4
RM60-S	<0.25	< 4.1
RM94-S	<0.25	< 4.2
RMDS	<0.25	< 3.9
RMT3z-8	<0.25	< 3.9
RMT3z-8 dup	<0.25	NA



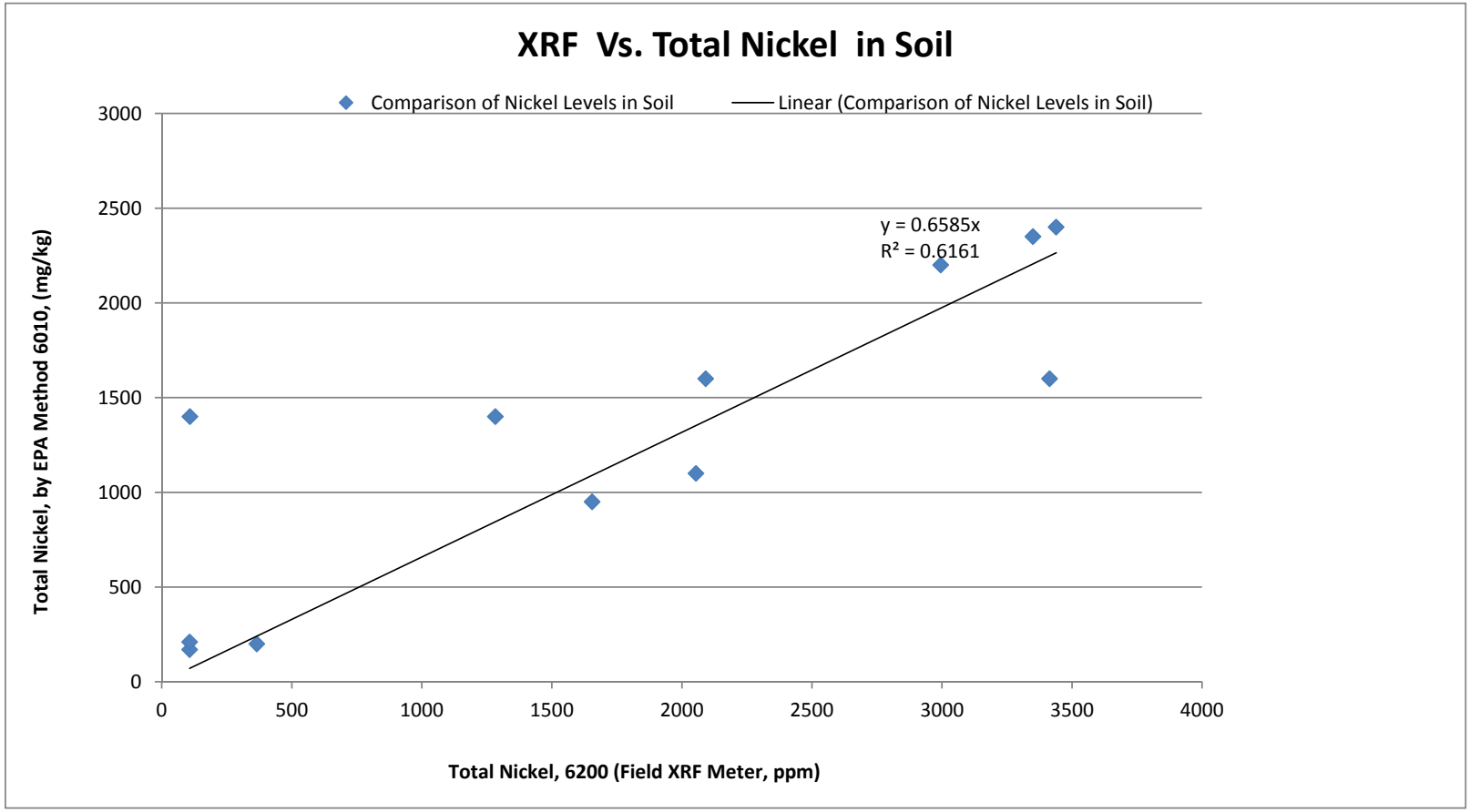
Sample ID	Chromium (mg/kg)	
	XRF	Total/Lab
CM01-S	11440	520
CM09-S	5812	370
CM23-S	10297	820
CMT3a-12	8850	776
RM05-S	1387	690
RM36-S	7580	100
RM43-S	1936	420
RM60-S	2969	330
RM94-S	1809	370
RMDS	825	280
RMT3z-8	9651	86
RMT3z-8 dup	9651	140



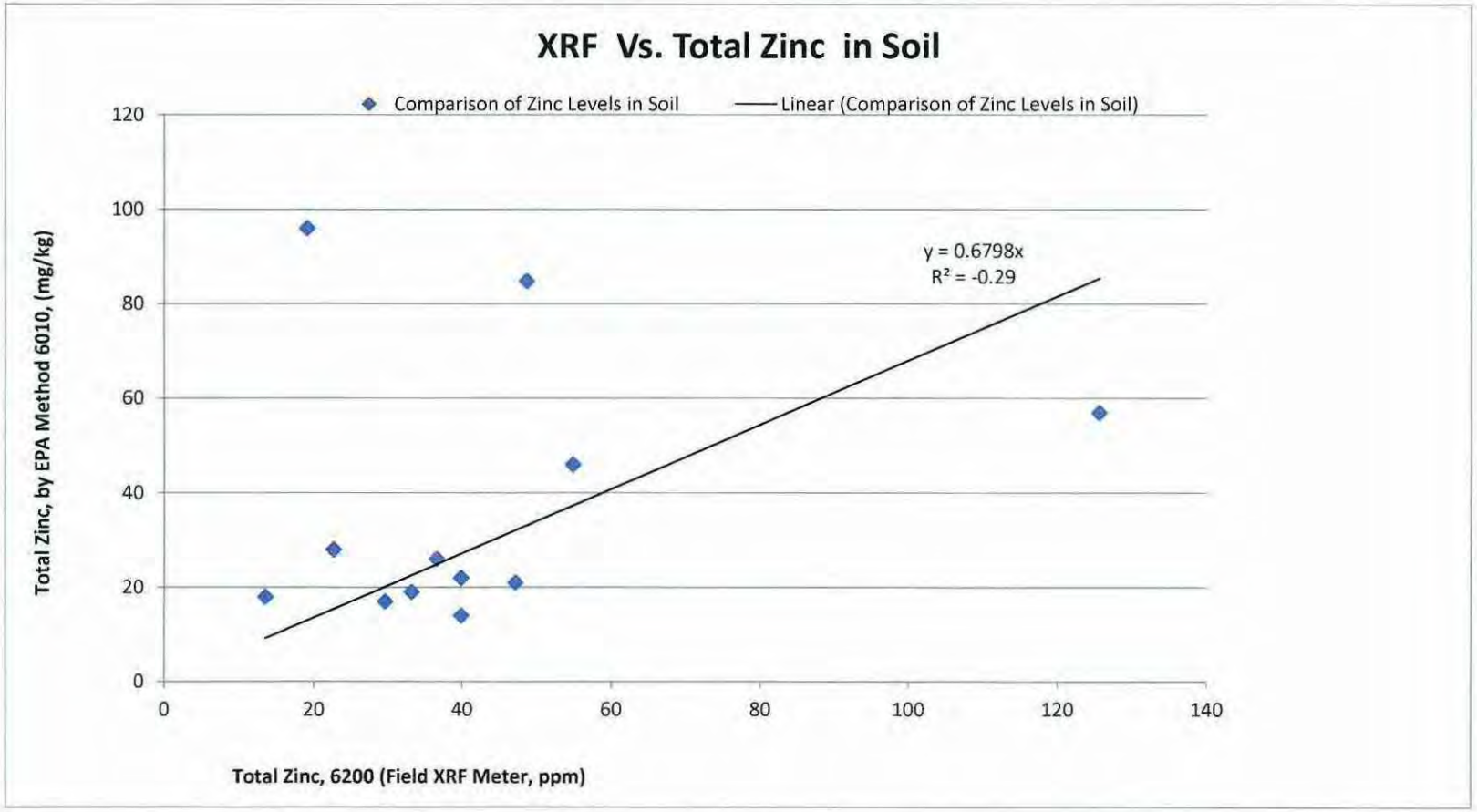
Sample ID	Cobalt (mg/kg)	
	XRF	Total/Lab
CM01-S	1246	93
CM09-S	1126	120
CM23-S	770	160
CMT3a-12	834	190
RM05-S	376	76
RM36-S	463	23
RM43-S	687	98
RM60-S	250	90
RM94-S	541	62
RMDS	390	43
RMT3z-8	835	19
RMT3z-8 dup	835	26



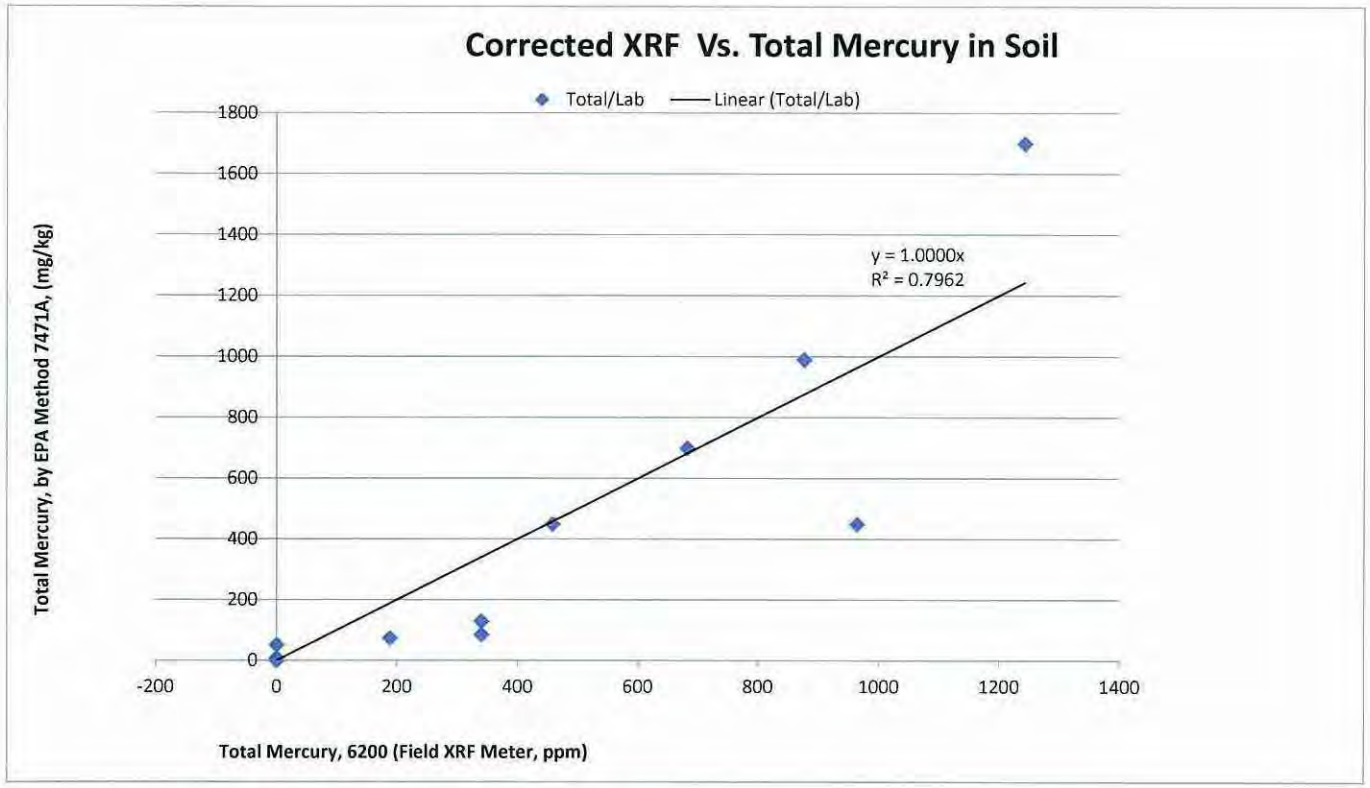
Sample ID	Lead (mg/kg)	
	XRF	Total/Lab
CM01-S	31	< 2
CM09-S	<0.25	2.3
CM23-S	24	4.2
CMT3a-12	<0.25	45.3
RM05-S	<0.25	< 2.1
RM36-S	17	2.3
RM43-S	8	5.6
RM60-S	14	15
RM94-S	<0.25	3.5
RMDS	<0.25	2.6
RMT3z-8	41	2
RMT3z-8 dup	41	2.2



Sample ID	Nickel (mg/kg)	
	XRF	Total/Lab
CM01-S	3414	1600
CM09-S	2995	2200
CM23-S	3439	2400
CMT3a-12	3350	2350
RM05-S	1283	1400
RM36-S	366	200
RM43-S	2092	1600
RM60-S	108	1400
RM94-S	2054	1100
RMDS	1655	950
RMT3z-8	107	170
RMT3z-8 dup	107	210



Sample ID	Zinc (mg/kg)	
	XRF	Total/Lab
CM01-S	47	21
CM09-S	37	26
CM23-S	55	46
CMT3a-12	49	84.8
RM05-S	14	18
RM36-S	30	17
RM43-S	126	57
RM60-S	19	96
RM94-S	33	19
RMDS	23	28
RMT3z-8	40	14
RMT3z-8 dup	40	22



Sample ID	Mercury (mg/kg)		
	XRF	Corrected XRF	Total/Lab
CM01-S	540	964.04	450
CM09-S	696	1242.93	1700
CM23-S	491	876.44	990
CMT3a-12	382	682.22	700
RM05-S	<0.25	0.23	0.12
RM36-S	106	188.84	74
RM43-S	<0.25	0.23	52
RM60-S	<0.25	0.23	9.2
RM94-S	257	458.18	450
RMDS	<0.25	0.23	0.22
RMT3z-8	191	340.88	86
RMT3z-8 dup	191.01	340.88	130

Note: Graph uses corrected XRF values. Correction = original slope (1.7846)*original XRF value.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 720-31892-2

Job Description: BLM-Chicago Research

For:
Environmental Cost Management, Inc.
3525 Hyland Avenue
Costa Mesa, CA 92626

Attention: Mr. Jim Langman

Approved for release.
Dimple Sharma
Project Manager I
1/10/2011 1:54 PM

Dimple Sharma
Project Manager I
dimple.sharma@testamericainc.com
01/10/2011

CA ELAP Certification # 2496
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A trip blank is required to be provided for volatile analyses. If trip blank results are not included in the report, either the trip blank was not submitted or requested to be analyzed.

TestAmerica Laboratories, Inc.
TestAmerica San Francisco 1220 Quarry Lane, Pleasanton, CA 94566
Tel (925) 484-1919 Fax (925) 600-3002 www.testamericainc.com

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

Metals
Method 6010B: The method blank for preparation batch 84220 contained Mo above the reporting limit (RL). The associated sample contained detects for this analyte at concentrations greater than 10X the value found in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

No other analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

EXECUTIVE SUMMARY - Detections

Client: Environmental Cost Management, Inc. Job Number: 720-31892-2

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier		Reporting Limit	Units	Method
720-31892-10	**RMDS**					
Soluble						
Barium		0.85		0.50	mg/L	6010B
Copper		6.0		2.0	mg/L	6010B
Molybdenum		1.8	B	1.0	mg/L	6010B
Zinc		6.1		2.0	mg/L	6010B

METHOD SUMMARY

Client: Environmental Cost Management, Inc. Job Number: 720-31892-2

Description	Lab Location	Method	Preparation Method
Matrix Solid			
Metals (ICP)	TAL SF	SW846 6010B	
Deionized Water Leaching Procedure	TAL SF		ASTM DI Leach
Preparation, Total Recoverable or Dissolved Metals	TAL SF		SW846 3005A
Mercury (CVAA)	TAL SF	SW846 7470A	
Deionized Water Leaching Procedure	TAL SF		ASTM DI Leach
Preparation, Mercury	TAL SF		SW846 7470A

Lab References:

TAL SF = TestAmerica San Francisco

Method References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

SAMPLE SUMMARY

Client: Environmental Cost Management, Inc.

Job Number: 720-31892-2

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-31892-10	RMDS	Solid	11/18/2010 0950	11/22/2010 0800

Client: Environmental Cost Management, Inc. Job Number: 720-31892-2

Client Sample ID: **RMDS**

Lab Sample ID: 720-31892-10 Date Sampled: 11/18/2010 0950
Client Matrix: Solid Date Received: 11/22/2010 0800

6010B Metals (ICP)-Soluble

Method:	6010B	Analysis Batch: 720-84444		Instrument ID:	Thermo ICP2
Preparation:	3005A	Prep Batch: 720-84347		Lab File ID:	01071102.asc
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	4 mL
Date Analyzed:	01/07/2011 1723			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Antimony		ND		1.0
Arsenic		ND		1.0
Barium		0.85		0.50
Beryllium		ND		0.20
Cadmium		ND		0.20
Chromium		ND		1.0
Cobalt		ND		0.20
Copper		6.0		2.0
Molybdenum		1.8	B	1.0
Nickel		ND		1.0
Selenium		ND		2.0
Silver		ND		0.50
Thallium		ND		1.0
Vanadium		ND		1.0
Zinc		6.1		2.0

Method:	6010B	Analysis Batch: 720-84482		Instrument ID:	Thermo ICP2
Preparation:	3005A	Prep Batch: 720-84347		Lab File ID:	01081104.asc
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	4 mL
Date Analyzed:	01/08/2011 1813			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Lead		ND		0.50

7470A Mercury (CVAA)-Soluble

Method:	7470A	Analysis Batch: 720-84432		Instrument ID:	LL_HG Analyzer
Preparation:	7470A	Prep Batch: 720-84358		Lab File ID:	W010711A.PRN
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	1 mL
Date Analyzed:	01/07/2011 1231			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Mercury		ND		0.050

DATA REPORTING QUALIFIERS

Client: Environmental Cost Management, Inc. Job Number: 720-31892-2

Lab Section	Qualifier	Description
Metals		
	B	Compound was found in the blank and sample.

Client: Environmental Cost Management, Inc.

Job Number: 720-31892-2

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 720-84220					
MB 720-84220/1-B	Method Blank	S	Solid	DI Leach	
MB 720-84220/1-C	Method Blank	S	Solid	DI Leach	
720-31892-10	RMDS	S	Solid	DI Leach	
720-31892-10MS	Matrix Spike	S	Solid	DI Leach	
720-31892-10MSD	Matrix Spike Duplicate	S	Solid	DI Leach	
Prep Batch: 720-84347					
LCS 720-84347/2-A	Lab Control Sample	R	Water	3005A	
LCSD 720-84347/3-A	Lab Control Sample Duplicate	R	Water	3005A	
MB 720-84220/1-B	Method Blank	S	Solid	3005A	720-84220
720-31892-10	RMDS	S	Solid	3005A	720-84220
720-31892-10MS	Matrix Spike	S	Solid	3005A	720-84220
720-31892-10MSD	Matrix Spike Duplicate	S	Solid	3005A	720-84220
Prep Batch: 720-84358					
LCS 720-84358/2-A	Lab Control Sample	T	Water	7470A	
LCSD 720-84358/3-A	Lab Control Sample Duplicate	T	Water	7470A	
MB 720-84220/1-C	Method Blank	S	Solid	7470A	720-84220
720-31892-10	RMDS	S	Solid	7470A	720-84220
720-31892-10MS	Matrix Spike	S	Solid	7470A	720-84220
720-31892-10MSD	Matrix Spike Duplicate	S	Solid	7470A	720-84220
Analysis Batch:720-84432					
MB 720-84220/1-C	Method Blank	S	Solid	7470A	720-84358
LCS 720-84358/2-A	Lab Control Sample	T	Water	7470A	720-84358
LCSD 720-84358/3-A	Lab Control Sample Duplicate	T	Water	7470A	720-84358
720-31892-10	RMDS	S	Solid	7470A	720-84358
720-31892-10MS	Matrix Spike	S	Solid	7470A	720-84358
720-31892-10MSD	Matrix Spike Duplicate	S	Solid	7470A	720-84358
Analysis Batch:720-84444					
MB 720-84220/1-B	Method Blank	S	Solid	6010B	720-84347
LCS 720-84347/2-A	Lab Control Sample	R	Water	6010B	720-84347
LCSD 720-84347/3-A	Lab Control Sample Duplicate	R	Water	6010B	720-84347
720-31892-10	RMDS	S	Solid	6010B	720-84347
720-31892-10MS	Matrix Spike	S	Solid	6010B	720-84347
720-31892-10MSD	Matrix Spike Duplicate	S	Solid	6010B	720-84347
Analysis Batch:720-84482					
720-31892-10	RMDS	S	Solid	6010B	720-84347

Client: Environmental Cost Management, Inc.

Job Number: 720-31892-2

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch

Report Basis

S = Soluble

R = Total Recoverable

T = Total

Client: Environmental Cost Management, Inc.

Job Number: 720-31892-2

Method Blank - Batch: 720-84347

Method: 6010B
Preparation: 3005A
Soluble

Lab Sample ID:	MB 720-84220/1-B	Analysis Batch:	720-84444	Instrument ID:	Thermo ICP2
Client Matrix:	Solid	Prep Batch:	720-84347	Lab File ID:	01071102.asc
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	4 mL
Date Analyzed:	01/07/2011 1711			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				
Date Leached:	01/04/2011 0958	Leachate Batch:	720-84220		

Analyte	Result	Qual	RL
Antimony	ND		0.10
Arsenic	ND		0.10
Barium	ND		0.050
Beryllium	ND		0.020
Cadmium	ND		0.020
Chromium	ND		0.10
Cobalt	ND		0.020
Copper	ND		0.20
Lead	ND		0.050
Molybdenum	0.167		0.10
Nickel	ND		0.10
Selenium	ND		0.20
Silver	ND		0.050
Thallium	ND		0.10
Vanadium	ND		0.10
Zinc	ND		0.20

Client: Environmental Cost Management, Inc.

Job Number: 720-31892-2

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-84347

Method: 6010B
Preparation: 3005A
Total Recoverable

LCS Lab Sample ID:	LCS 720-84347/2-A	Analysis Batch:	720-84444	Instrument ID:	Thermo ICP2
Client Matrix:	Water	Prep Batch:	720-84347	Lab File ID:	01071102.asc
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	40 mL
Date Analyzed:	01/07/2011 1703			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				

LCSD Lab Sample ID:	LCSD 720-84347/3-A	Analysis Batch:	720-84444	Instrument ID:	Thermo ICP2
Client Matrix:	Water	Prep Batch:	720-84347	Lab File ID:	01071102.asc
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	40 mL
Date Analyzed:	01/07/2011 1707			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Antimony	99	100	80 - 120	1	20		
Arsenic	92	93	80 - 120	1	20		
Barium	98	99	80 - 120	1	20		
Beryllium	99	100	80 - 120	1	20		
Cadmium	98	99	80 - 120	1	20		
Chromium	97	99	80 - 120	1	20		
Cobalt	100	101	80 - 120	1	20		
Copper	99	100	80 - 120	1	20		
Lead	100	101	80 - 120	1	20		
Molybdenum	98	99	80 - 120	1	20		
Nickel	99	100	80 - 120	1	20		
Selenium	99	101	80 - 120	1	20		
Silver	101	102	80 - 120	1	20		
Thallium	101	102	80 - 120	1	20		
Vanadium	98	99	80 - 120	1	20		
Zinc	100	101	80 - 120	1	20		

Client: Environmental Cost Management, Inc.

Job Number: 720-31892-2

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-84347

Method: 6010B
Preparation: 3005A
Soluble

MS Lab Sample ID:	720-31892-10	Analysis Batch: 720-84444	Instrument ID: Thermo ICP2
Client Matrix:	Solid	Prep Batch: 720-84347	Lab File ID: 01071102.asc
Dilution:	1.0		Initial Weight/Volume: 4 mL
Date Analyzed:	01/07/2011 1715		Final Weight/Volume: 40 mL
Date Prepared:	01/06/2011 1200		
Date Leached:	01/04/2011 0958	Leachate Batch: 720-84220	

MSD Lab Sample ID:	720-31892-10	Analysis Batch: 720-84444	Instrument ID: Thermo ICP2
Client Matrix:	Solid	Prep Batch: 720-84347	Lab File ID: 01071102.asc
Dilution:	1.0		Initial Weight/Volume: 4 mL
Date Analyzed:	01/07/2011 1719		Final Weight/Volume: 40 mL
Date Prepared:	01/06/2011 1200		
Date Leached:	01/04/2011 0958	Leachate Batch: 720-84220	

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	99	100	75 - 125	2	20		
Arsenic	92	93	75 - 125	1	20		
Barium	99	100	75 - 125	1	20		
Beryllium	99	100	75 - 125	1	20		
Cadmium	98	98	75 - 125	0	20		
Chromium	98	98	75 - 125	0	20		
Cobalt	101	101	75 - 125	0	20		
Copper	94	93	75 - 125	0	20		
Lead	101	101	75 - 125	0	20		
Molybdenum	94	99	75 - 125	4	20		
Nickel	99	99	75 - 125	0	20		
Selenium	101	101	75 - 125	0	20		
Silver	102	103	75 - 125	1	20		
Thallium	101	102	75 - 125	0	20		
Vanadium	99	100	75 - 125	1	20		
Zinc	95	95	75 - 125	0	20		

Client: Environmental Cost Management, Inc.

Job Number: 720-31892-2

Method Blank - Batch: 720-84358

Method: 7470A
Preparation: 7470A
Soluble

Lab Sample ID:	MB 720-84220/1-C	Analysis Batch:	720-84432	Instrument ID:	LL_HG Analyzer
Client Matrix:	Solid	Prep Batch:	720-84358	Lab File ID:	W010711A.PRN
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	1 mL
Date Analyzed:	01/07/2011 1224			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				
Date Leached:	01/04/2011 0958	Leachate Batch:	720-84220		

Analyte	Result	Qual	RL
Mercury	ND		0.0050

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-84358

Method: 7470A
Preparation: 7470A

LCS Lab Sample ID:	LCS 720-84358/2-A	Analysis Batch:	720-84432	Instrument ID:	LL_HG Analyzer
Client Matrix:	Water	Prep Batch:	720-84358	Lab File ID:	W010711A.PRN
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	25 mL
Date Analyzed:	01/07/2011 1219			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				

LCSD Lab Sample ID:	LCSD 720-84358/3-A	Analysis Batch:	720-84432	Instrument ID:	LL_HG Analyzer
Client Matrix:	Water	Prep Batch:	720-84358	Lab File ID:	W010711A.PRN
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	25 mL
Date Analyzed:	01/07/2011 1222			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Mercury	99	97	80 - 120	2	20		

Client: Environmental Cost Management, Inc.

Job Number: 720-31892-2

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-84358

Method: 7470A
Preparation: 7470A
Soluble

MS Lab Sample ID:	720-31892-10	Analysis Batch: 720-84432	Instrument ID: LL_HG Analyzer
Client Matrix:	Solid	Prep Batch: 720-84358	Lab File ID: W010711A.PRN
Dilution:	1.0		Initial Weight/Volume: 1 mL
Date Analyzed:	01/07/2011 1227		Final Weight/Volume: 50 mL
Date Prepared:	01/06/2011 1419		
Date Leached:	01/04/2011 0958	Leachate Batch: 720-84220	

MSD Lab Sample ID:	720-31892-10	Analysis Batch: 720-84432	Instrument ID: LL_HG Analyzer
Client Matrix:	Solid	Prep Batch: 720-84358	Lab File ID: W010711A.PRN
Dilution:	1.0		Initial Weight/Volume: 1 mL
Date Analyzed:	01/07/2011 1229		Final Weight/Volume: 50 mL
Date Prepared:	01/06/2011 1419		
Date Leached:	01/04/2011 0958	Leachate Batch: 720-84220	

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Mercury	100	101	75 - 125	1	20		

720-31892-2
720-32087-2

Sharma, Dimple

From: James Langman [jlangman@ecostmanage.com]
Sent: Wednesday, December 22, 2010 10:06 AM
To: Sharma, Dimple
Cc: Andrew Campbell
Subject: Run DI WET on Soil Samples on Hold for BLM Chicago & Research

December 22, 2010
Dimple:
Hi.
Per our call, please run DI WET/CAM 17 on the soil samples that are on hold for Job Numbers 720-31892-1: Sample RMDS and
720-32087-1: Samples CMT03-12, CMT05-4, CMT07-4, RMT03-8, RMT03-8 Dup, RMT06-5, and RMT08-15.
I think that these are the only samples on hold. If I missed any, let me know.

Also, Please send me copies of the invoices for these two Jobs. As I understand you, these invoices have already been sent to the Costa Mesa, CA office at 3525 Hyland Ave, Suite 200, Costa Mesa, CA 92626 (714-662-2759).
Thanks and have Happy Holidays,
Jim Langman
Environmental Cost Management, Inc.
303-713-0850

Login Sample Receipt Check List

Client: Environmental Cost Management, Inc.

Job Number: 720-31892-2

Login Number: 31892

List Source: TestAmerica San Francisco

Creator: Caparas, Criselda

List Number: 1

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 720-32087-2

Job Description: BLM-Chicago Research

For:
Environmental Cost Management, Inc.
3525 Hyland Avenue
Costa Mesa, CA 92626

Attention: Mr. Jim Langman

Approved for release.
Dimple Sharma
Project Manager I
1/10/2011 1:59 PM

Dimple Sharma
Project Manager I
dimple.sharma@testamericainc.com
01/10/2011

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TestAmerica Laboratories, Inc.
TestAmerica San Francisco 1220 Quarry Lane, Pleasanton, CA 94566
Tel (925) 484-1919 Fax (925) 600-3002 www.testamericainc.com

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

Metals
Method 6010B: The method blank for preparation batch 84220 contained Mo above the reporting limit (RL). The associated sample did not contain detects for this analyte at concentrations found in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

No other analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

EXECUTIVE SUMMARY - Detections

Client: Environmental Cost Management, Inc. Job Number: 720-32087-2

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
720-32087-1	**CMT03-12"**				
Soluble					
Barium		0.60	0.50	mg/L	6010B
Mercury		0.11	0.050	mg/L	7470A
720-32087-2	**CMT05-4"**				
Soluble					
Barium		1.8	0.50	mg/L	6010B
720-32087-3	**CMT07-4"**				
Soluble					
Barium		0.62	0.50	mg/L	6010B
720-32087-4	**RMT03-8"**				
Soluble					
Barium		0.78	0.50	mg/L	6010B
Nickel		1.2	1.0	mg/L	6010B
720-32087-5	**RMT03-8" DUP**				
Soluble					
Barium		0.67	0.50	mg/L	6010B
720-32087-6	**RMT06-5"**				
Soluble					
Barium		2.6	0.50	mg/L	6010B
Chromium		2.0	1.0	mg/L	6010B
Cobalt		0.58	0.20	mg/L	6010B
Nickel		11	1.0	mg/L	6010B
720-32087-7	**RMT08-15"**				
Soluble					
Barium		1.7	0.50	mg/L	6010B
Chromium		1.5	1.0	mg/L	6010B
Nickel		6.7	1.0	mg/L	6010B
Mercury		2.3	0.050	mg/L	7470A

METHOD SUMMARY

Client: Environmental Cost Management, Inc. Job Number: 720-32087-2

Description	Lab Location	Method	Preparation Method
Matrix Solid			
Metals (ICP)	TAL SF	SW846 6010B	
Deionized Water Leaching Procedure	TAL SF		ASTM DI Leach
Preparation, Total Recoverable or Dissolved Metals	TAL SF		SW846 3005A
Mercury (CVAA)	TAL SF	SW846 7470A	
Deionized Water Leaching Procedure	TAL SF		ASTM DI Leach
Preparation, Mercury	TAL SF		SW846 7470A

Lab References:

TAL SF = TestAmerica San Francisco

Method References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

SAMPLE SUMMARY

Client: Environmental Cost Management, Inc. Job Number: 720-32087-2

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-32087-1	CMT03-12"	Solid	11/29/2010 1526	12/03/2010 0926
720-32087-2	CMT05-4"	Solid	11/30/2010 0817	12/03/2010 0926
720-32087-3	CMT07-4"	Solid	11/30/2010 0956	12/03/2010 0926
720-32087-4	RMT03-8"	Solid	11/30/2010 1410	12/03/2010 0926
720-32087-5	RMT03-8" dup	Solid	11/30/2010 1410	12/03/2010 0926
720-32087-6	RMT06-5"	Solid	11/30/2010 1536	12/03/2010 0926
720-32087-7	RMT08-15"	Solid	12/01/2010 0910	12/03/2010 0926

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

Client Sample ID: **CMT03-12"**

Lab Sample ID: 720-32087-1

Client Matrix: Solid

Date Sampled: 11/29/2010 1526

Date Received: 12/03/2010 0926

6010B Metals (ICP)-Soluble

Method:	6010B	Analysis Batch: 720-84444		Instrument ID:	Thermo ICP2
Preparation:	3005A	Prep Batch: 720-84347		Lab File ID:	01071102.asc
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	4 mL
Date Analyzed:	01/07/2011 1727			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Antimony		ND		1.0
Arsenic		ND		1.0
Barium		0.60		0.50
Beryllium		ND		0.20
Cadmium		ND		0.20
Chromium		ND		1.0
Cobalt		ND		0.20
Copper		ND		2.0
Lead		ND		0.50
Molybdenum		ND		1.0
Nickel		ND		1.0
Selenium		ND		2.0
Silver		ND		0.50
Thallium		ND		1.0
Vanadium		ND		1.0
Zinc		ND		2.0

7470A Mercury (CVAA)-Soluble

Method:	7470A	Analysis Batch: 720-84432		Instrument ID:	LL_HG Analyzer
Preparation:	7470A	Prep Batch: 720-84358		Lab File ID:	W010711A.PRN
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	1 mL
Date Analyzed:	01/07/2011 1233			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Mercury		0.11		0.050

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

Client Sample ID: **CMT05-4"**

Lab Sample ID: 720-32087-2
Client Matrix: Solid

Date Sampled: 11/30/2010 0817
Date Received: 12/03/2010 0926

6010B Metals (ICP)-Soluble

Method:	6010B	Analysis Batch: 720-84444		Instrument ID:	Thermo ICP2
Preparation:	3005A	Prep Batch: 720-84347		Lab File ID:	01071102.asc
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	4 mL
Date Analyzed:	01/07/2011 1732			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Antimony		ND		1.0
Arsenic		ND		1.0
Barium		1.8		0.50
Beryllium		ND		0.20
Cadmium		ND		0.20
Chromium		ND		1.0
Cobalt		ND		0.20
Copper		ND		2.0
Lead		ND		0.50
Molybdenum		ND		1.0
Nickel		ND		1.0
Selenium		ND		2.0
Silver		ND		0.50
Thallium		ND		1.0
Vanadium		ND		1.0
Zinc		ND		2.0

7470A Mercury (CVAA)-Soluble

Method:	7470A	Analysis Batch: 720-84432		Instrument ID:	LL_HG Analyzer
Preparation:	7470A	Prep Batch: 720-84358		Lab File ID:	W010711A.PRN
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	1 mL
Date Analyzed:	01/07/2011 1236			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Mercury		ND		0.050

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

Client Sample ID: **CMT07-4"**

Lab Sample ID: 720-32087-3

Client Matrix: Solid

Date Sampled: 11/30/2010 0956

Date Received: 12/03/2010 0926

6010B Metals (ICP)-Soluble

Method:	6010B	Analysis Batch: 720-84444		Instrument ID:	Thermo ICP2
Preparation:	3005A	Prep Batch: 720-84347		Lab File ID:	01071102.asc
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	4 mL
Date Analyzed:	01/07/2011 1736			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Antimony		ND		1.0
Arsenic		ND		1.0
Barium		0.62		0.50
Beryllium		ND		0.20
Cadmium		ND		0.20
Chromium		ND		1.0
Cobalt		ND		0.20
Copper		ND		2.0
Lead		ND		0.50
Molybdenum		ND		1.0
Nickel		ND		1.0
Selenium		ND		2.0
Silver		ND		0.50
Thallium		ND		1.0
Vanadium		ND		1.0
Zinc		ND		2.0

7470A Mercury (CVAA)-Soluble

Method:	7470A	Analysis Batch: 720-84432		Instrument ID:	LL_HG Analyzer
Preparation:	7470A	Prep Batch: 720-84358		Lab File ID:	W010711A.PRN
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	1 mL
Date Analyzed:	01/07/2011 1238			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Mercury		ND		0.050

Client: Environmental Cost Management, Inc. Job Number: 720-32087-2

Client Sample ID: **RMT03-8"**

Lab Sample ID: 720-32087-4 Date Sampled: 11/30/2010 1410
Client Matrix: Solid Date Received: 12/03/2010 0926

6010B Metals (ICP)-Soluble

Method:	6010B	Analysis Batch: 720-84444		Instrument ID:	Thermo ICP2
Preparation:	3005A	Prep Batch: 720-84347		Lab File ID:	01071102.asc
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	4 mL
Date Analyzed:	01/07/2011 1748			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Antimony		ND		1.0
Arsenic		ND		1.0
Barium		0.78		0.50
Beryllium		ND		0.20
Cadmium		ND		0.20
Chromium		ND		1.0
Cobalt		ND		0.20
Copper		ND		2.0
Lead		ND		0.50
Molybdenum		ND		1.0
Nickel		1.2		1.0
Selenium		ND		2.0
Silver		ND		0.50
Thallium		ND		1.0
Vanadium		ND		1.0
Zinc		ND		2.0

7470A Mercury (CVAA)-Soluble

Method:	7470A	Analysis Batch: 720-84432		Instrument ID:	LL_HG Analyzer
Preparation:	7470A	Prep Batch: 720-84358		Lab File ID:	W010711A.PRN
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	1 mL
Date Analyzed:	01/07/2011 1245			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Mercury		ND		0.050

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

Client Sample ID: **RMT03-8" dup**

Lab Sample ID: 720-32087-5

Client Matrix: Solid

Date Sampled: 11/30/2010 1410

Date Received: 12/03/2010 0926

6010B Metals (ICP)-Soluble

Method:	6010B	Analysis Batch: 720-84444		Instrument ID:	Thermo ICP2
Preparation:	3005A	Prep Batch: 720-84347		Lab File ID:	01071102.asc
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	4 mL
Date Analyzed:	01/07/2011 1753			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Antimony		ND		1.0
Arsenic		ND		1.0
Barium		0.67		0.50
Beryllium		ND		0.20
Cadmium		ND		0.20
Chromium		ND		1.0
Cobalt		ND		0.20
Copper		ND		2.0
Lead		ND		0.50
Molybdenum		ND		1.0
Nickel		ND		1.0
Selenium		ND		2.0
Silver		ND		0.50
Thallium		ND		1.0
Vanadium		ND		1.0
Zinc		ND		2.0

7470A Mercury (CVAA)-Soluble

Method:	7470A	Analysis Batch: 720-84432		Instrument ID:	LL_HG Analyzer
Preparation:	7470A	Prep Batch: 720-84358		Lab File ID:	W010711A.PRN
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	1 mL
Date Analyzed:	01/07/2011 1247			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Mercury		ND		0.050

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

Client Sample ID: **RMT06-5"**

Lab Sample ID: 720-32087-6

Client Matrix: Solid

Date Sampled: 11/30/2010 1536

Date Received: 12/03/2010 0926

6010B Metals (ICP)-Soluble

Method:	6010B	Analysis Batch: 720-84444		Instrument ID:	Thermo ICP2
Preparation:	3005A	Prep Batch: 720-84347		Lab File ID:	01071102.asc
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	4 mL
Date Analyzed:	01/07/2011 1757			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Antimony		ND		1.0
Arsenic		ND		1.0
Barium		2.6		0.50
Beryllium		ND		0.20
Cadmium		ND		0.20
Chromium		2.0		1.0
Cobalt		0.58		0.20
Copper		ND		2.0
Lead		ND		0.50
Molybdenum		ND		1.0
Nickel		11		1.0
Selenium		ND		2.0
Silver		ND		0.50
Thallium		ND		1.0
Vanadium		ND		1.0
Zinc		ND		2.0

7470A Mercury (CVAA)-Soluble

Method:	7470A	Analysis Batch: 720-84432		Instrument ID:	LL_HG Analyzer
Preparation:	7470A	Prep Batch: 720-84358		Lab File ID:	W010711A.PRN
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	1 mL
Date Analyzed:	01/07/2011 1250			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Mercury		ND		0.050

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

Client Sample ID: **RMT08-15"**

Lab Sample ID: 720-32087-7

Client Matrix: Solid

Date Sampled: 12/01/2010 0910

Date Received: 12/03/2010 0926

6010B Metals (ICP)-Soluble

Method:	6010B	Analysis Batch: 720-84444		Instrument ID:	Thermo ICP2
Preparation:	3005A	Prep Batch: 720-84347		Lab File ID:	01071102.asc
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	4 mL
Date Analyzed:	01/07/2011 1801			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Antimony		ND		1.0
Arsenic		ND		1.0
Barium		1.7		0.50
Beryllium		ND		0.20
Cadmium		ND		0.20
Chromium		1.5		1.0
Cobalt		ND		0.20
Copper		ND		2.0
Lead		ND		0.50
Molybdenum		ND		1.0
Nickel		6.7		1.0
Selenium		ND		2.0
Silver		ND		0.50
Thallium		ND		1.0
Vanadium		ND		1.0
Zinc		ND		2.0

7470A Mercury (CVAA)-Soluble

Method:	7470A	Analysis Batch: 720-84432		Instrument ID:	LL_HG Analyzer
Preparation:	7470A	Prep Batch: 720-84358		Lab File ID:	W010711A.PRN
Dilution:	1.0	Leachate Batch: 720-84220		Initial Weight/Volume:	1 mL
Date Analyzed:	01/07/2011 1524			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				
Date Leached:	01/04/2011 958				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Mercury		2.3		0.050

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 720-84220					
MB 720-84220/1-B	Method Blank	S	Solid	DI Leach	
MB 720-84220/1-C	Method Blank	S	Solid	DI Leach	
720-31892-A-10-Q MS	Matrix Spike	S	Solid	DI Leach	
720-31892-A-10-T MS	Matrix Spike	S	Solid	DI Leach	
720-31892-A-10-R MSD	Matrix Spike Duplicate	S	Solid	DI Leach	
720-31892-A-10-U MSD	Matrix Spike Duplicate	S	Solid	DI Leach	
720-32087-1	CMT03-12"	S	Solid	DI Leach	
720-32087-2	CMT05-4"	S	Solid	DI Leach	
720-32087-3	CMT07-4"	S	Solid	DI Leach	
720-32087-4	RMT03-8"	S	Solid	DI Leach	
720-32087-5	RMT03-8" dup	S	Solid	DI Leach	
720-32087-6	RMT06-5"	S	Solid	DI Leach	
720-32087-7	RMT08-15"	S	Solid	DI Leach	
Prep Batch: 720-84347					
LCS 720-84347/2-A	Lab Control Sample	R	Water	3005A	
LCSD 720-84347/3-A	Lab Control Sample Duplicate	R	Water	3005A	
MB 720-84220/1-B	Method Blank	S	Solid	3005A	720-84220
720-31892-A-10-Q MS	Matrix Spike	S	Solid	3005A	720-84220
720-31892-A-10-R MSD	Matrix Spike Duplicate	S	Solid	3005A	720-84220
720-32087-1	CMT03-12"	S	Solid	3005A	720-84220
720-32087-2	CMT05-4"	S	Solid	3005A	720-84220
720-32087-3	CMT07-4"	S	Solid	3005A	720-84220
720-32087-4	RMT03-8"	S	Solid	3005A	720-84220
720-32087-5	RMT03-8" dup	S	Solid	3005A	720-84220
720-32087-6	RMT06-5"	S	Solid	3005A	720-84220
720-32087-7	RMT08-15"	S	Solid	3005A	720-84220
Prep Batch: 720-84358					
LCS 720-84358/2-A	Lab Control Sample	T	Water	7470A	
LCSD 720-84358/3-A	Lab Control Sample Duplicate	T	Water	7470A	
MB 720-84220/1-C	Method Blank	S	Solid	7470A	720-84220
720-31892-A-10-T MS	Matrix Spike	S	Solid	7470A	720-84220
720-31892-A-10-U MSD	Matrix Spike Duplicate	S	Solid	7470A	720-84220
720-32087-1	CMT03-12"	S	Solid	7470A	720-84220
720-32087-2	CMT05-4"	S	Solid	7470A	720-84220
720-32087-3	CMT07-4"	S	Solid	7470A	720-84220
720-32087-4	RMT03-8"	S	Solid	7470A	720-84220
720-32087-5	RMT03-8" dup	S	Solid	7470A	720-84220
720-32087-6	RMT06-5"	S	Solid	7470A	720-84220
720-32087-7	RMT08-15"	S	Solid	7470A	720-84220

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Analysis Batch:720-84432					
MB 720-84220/1-C	Method Blank	S	Solid	7470A	720-84358
LCS 720-84358/2-A	Lab Control Sample	T	Water	7470A	720-84358
LCSD 720-84358/3-A	Lab Control Sample Duplicate	T	Water	7470A	720-84358
720-31892-A-10-T MS	Matrix Spike	S	Solid	7470A	720-84358
720-31892-A-10-U MSD	Matrix Spike Duplicate	S	Solid	7470A	720-84358
720-32087-1	CMT03-12"	S	Solid	7470A	720-84358
720-32087-2	CMT05-4"	S	Solid	7470A	720-84358
720-32087-3	CMT07-4"	S	Solid	7470A	720-84358
720-32087-4	RMT03-8"	S	Solid	7470A	720-84358
720-32087-5	RMT03-8" dup	S	Solid	7470A	720-84358
720-32087-6	RMT06-5"	S	Solid	7470A	720-84358
720-32087-7	RMT08-15"	S	Solid	7470A	720-84358
Analysis Batch:720-84444					
MB 720-84220/1-B	Method Blank	S	Solid	6010B	720-84347
LCS 720-84347/2-A	Lab Control Sample	R	Water	6010B	720-84347
LCSD 720-84347/3-A	Lab Control Sample Duplicate	R	Water	6010B	720-84347
720-31892-A-10-Q MS	Matrix Spike	S	Solid	6010B	720-84347
720-31892-A-10-R MSD	Matrix Spike Duplicate	S	Solid	6010B	720-84347
720-32087-1	CMT03-12"	S	Solid	6010B	720-84347
720-32087-2	CMT05-4"	S	Solid	6010B	720-84347
720-32087-3	CMT07-4"	S	Solid	6010B	720-84347
720-32087-4	RMT03-8"	S	Solid	6010B	720-84347
720-32087-5	RMT03-8" dup	S	Solid	6010B	720-84347
720-32087-6	RMT06-5"	S	Solid	6010B	720-84347
720-32087-7	RMT08-15"	S	Solid	6010B	720-84347

Report Basis

S = Soluble

R = Total Recoverable

T = Total

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

Method Blank - Batch: 720-84347

Method: 6010B
Preparation: 3005A
Soluble

Lab Sample ID:	MB 720-84220/1-B	Analysis Batch:	720-84444	Instrument ID:	Thermo ICP2
Client Matrix:	Solid	Prep Batch:	720-84347	Lab File ID:	01071102.asc
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	4 mL
Date Analyzed:	01/07/2011 1711			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				
Date Leached:	01/04/2011 0958	Leachate Batch:	720-84220		

Analyte	Result	Qual	RL
Antimony	ND		0.10
Arsenic	ND		0.10
Barium	ND		0.050
Beryllium	ND		0.020
Cadmium	ND		0.020
Chromium	ND		0.10
Cobalt	ND		0.020
Copper	ND		0.20
Lead	ND		0.050
Molybdenum	0.167		0.10
Nickel	ND		0.10
Selenium	ND		0.20
Silver	ND		0.050
Thallium	ND		0.10
Vanadium	ND		0.10
Zinc	ND		0.20

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-84347

Method: 6010B
Preparation: 3005A
Total Recoverable

LCS Lab Sample ID:	LCS 720-84347/2-A	Analysis Batch:	720-84444	Instrument ID:	Thermo ICP2
Client Matrix:	Water	Prep Batch:	720-84347	Lab File ID:	01071102.asc
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	40 mL
Date Analyzed:	01/07/2011 1703			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				

LCSD Lab Sample ID:	LCSD 720-84347/3-A	Analysis Batch:	720-84444	Instrument ID:	Thermo ICP2
Client Matrix:	Water	Prep Batch:	720-84347	Lab File ID:	01071102.asc
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	40 mL
Date Analyzed:	01/07/2011 1707			Final Weight/Volume:	40 mL
Date Prepared:	01/06/2011 1200				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Antimony	99	100	80 - 120	1	20		
Arsenic	92	93	80 - 120	1	20		
Barium	98	99	80 - 120	1	20		
Beryllium	99	100	80 - 120	1	20		
Cadmium	98	99	80 - 120	1	20		
Chromium	97	99	80 - 120	1	20		
Cobalt	100	101	80 - 120	1	20		
Copper	99	100	80 - 120	1	20		
Lead	100	101	80 - 120	1	20		
Molybdenum	98	99	80 - 120	1	20		
Nickel	99	100	80 - 120	1	20		
Selenium	99	101	80 - 120	1	20		
Silver	101	102	80 - 120	1	20		
Thallium	101	102	80 - 120	1	20		
Vanadium	98	99	80 - 120	1	20		
Zinc	100	101	80 - 120	1	20		

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-84347

Method: 6010B
Preparation: 3005A
Soluble

MS Lab Sample ID:	720-31892-A-10-Q MS	Analysis Batch: 720-84444	Instrument ID: Thermo ICP2
Client Matrix:	Solid	Prep Batch: 720-84347	Lab File ID: 01071102.asc
Dilution:	1.0		Initial Weight/Volume: 4 mL
Date Analyzed:	01/07/2011 1715		Final Weight/Volume: 40 mL
Date Prepared:	01/06/2011 1200		
Date Leached:	01/04/2011 0958	Leachate Batch: 720-84220	

MSD Lab Sample ID:	720-31892-A-10-R MSD	Analysis Batch: 720-84444	Instrument ID: Thermo ICP2
Client Matrix:	Solid	Prep Batch: 720-84347	Lab File ID: 01071102.asc
Dilution:	1.0		Initial Weight/Volume: 4 mL
Date Analyzed:	01/07/2011 1719		Final Weight/Volume: 40 mL
Date Prepared:	01/06/2011 1200		
Date Leached:	01/04/2011 0958	Leachate Batch: 720-84220	

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Antimony	99	100	75 - 125	2	20		
Arsenic	92	93	75 - 125	1	20		
Barium	99	100	75 - 125	1	20		
Beryllium	99	100	75 - 125	1	20		
Cadmium	98	98	75 - 125	0	20		
Chromium	98	98	75 - 125	0	20		
Cobalt	101	101	75 - 125	0	20		
Copper	94	93	75 - 125	0	20		
Lead	101	101	75 - 125	0	20		
Molybdenum	94	99	75 - 125	4	20		
Nickel	99	99	75 - 125	0	20		
Selenium	101	101	75 - 125	0	20		
Silver	102	103	75 - 125	1	20		
Thallium	101	102	75 - 125	0	20		
Vanadium	99	100	75 - 125	1	20		
Zinc	95	95	75 - 125	0	20		

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

Method Blank - Batch: 720-84358

Method: 7470A
Preparation: 7470A
Soluble

Lab Sample ID:	MB 720-84220/1-C	Analysis Batch:	720-84432	Instrument ID:	LL_HG Analyzer
Client Matrix:	Solid	Prep Batch:	720-84358	Lab File ID:	W010711A.PRN
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	1 mL
Date Analyzed:	01/07/2011 1224			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				
Date Leached:	01/04/2011 0958	Leachate Batch:	720-84220		

Analyte	Result	Qual	RL
Mercury	ND		0.0050

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-84358

Method: 7470A
Preparation: 7470A

LCS Lab Sample ID:	LCS 720-84358/2-A	Analysis Batch:	720-84432	Instrument ID:	LL_HG Analyzer
Client Matrix:	Water	Prep Batch:	720-84358	Lab File ID:	W010711A.PRN
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	25 mL
Date Analyzed:	01/07/2011 1219			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				

LCSD Lab Sample ID:	LCSD 720-84358/3-A	Analysis Batch:	720-84432	Instrument ID:	LL_HG Analyzer
Client Matrix:	Water	Prep Batch:	720-84358	Lab File ID:	W010711A.PRN
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	25 mL
Date Analyzed:	01/07/2011 1222			Final Weight/Volume:	50 mL
Date Prepared:	01/06/2011 1419				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Mercury	99	97	80 - 120	2	20		

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-84358

Method: 7470A
Preparation: 7470A
Soluble

MS Lab Sample ID:	720-31892-A-10-T MS	Analysis Batch: 720-84432	Instrument ID: LL_HG Analyzer
Client Matrix:	Solid	Prep Batch: 720-84358	Lab File ID: W010711A.PRN
Dilution:	1.0		Initial Weight/Volume: 1 mL
Date Analyzed:	01/07/2011 1227		Final Weight/Volume: 50 mL
Date Prepared:	01/06/2011 1419		
Date Leached:	01/04/2011 0958	Leachate Batch: 720-84220	
MSD Lab Sample ID:	720-31892-A-10-U MSD	Analysis Batch: 720-84432	Instrument ID: LL_HG Analyzer
Client Matrix:	Solid	Prep Batch: 720-84358	Lab File ID: W010711A.PRN
Dilution:	1.0		Initial Weight/Volume: 1 mL
Date Analyzed:	01/07/2011 1229		Final Weight/Volume: 50 mL
Date Prepared:	01/06/2011 1419		
Date Leached:	01/04/2011 0958	Leachate Batch: 720-84220	

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Mercury	100	101	75 - 125	1	20		

720-31892-2
720-32087-2

Sharma, Dimple

From: James Langman [jlangman@ecostmanage.com]
Sent: Wednesday, December 22, 2010 10:06 AM
To: Sharma, Dimple
Cc: Andrew Campbell
Subject: Run DI WET on Soil Samples on Hold for BLM Chicago & Research

December 22, 2010
Dimple:
Hi.
Per our call, please run DI WET/CAM 17 on the soil samples that are on hold for Job Numbers 720-31892-1: Sample RMDS and
720-32087-1: Samples CMT03-12, CMT05-4, CMT07-4, RMT03-8, RMT03-8 Dup, RMT06-5, and RMT08-15.
I think that these are the only samples on hold. If I missed any, let me know.

Also, Please send me copies of the invoices for these two Jobs. As I understand you, these invoices have already been sent to the Costa Mesa, CA office at 3525 Hyland Ave, Suite 200, Costa Mesa, CA 92626 (714-662-2759).
Thanks and have Happy Holidays,
Jim Langman
Environmental Cost Management, Inc.
303-713-0850

Login Sample Receipt Check List

Client: Environmental Cost Management, Inc.

Job Number: 720-32087-2

Login Number: 32087

List Source: TestAmerica San Francisco

Creator: Mullen, Joan

List Number: 1

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

ECM, Inc.
3525 Hyland Avenue,#200
Costa Mesa, CA 92626

Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS
Work Order: **W0L0121**
Reported: 17-Dec-10 14:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RMDS	W0L0121-01	Solid	18-Nov-10 09:50	06-Dec-2010
CMT03-12"	W0L0121-02	Solid	29-Nov-10 15:26	06-Dec-2010
CMT04-6"	W0L0121-03	Solid	29-Nov-10 16:17	06-Dec-2010
CMT05-4"	W0L0121-04	Solid	30-Nov-10 08:17	06-Dec-2010
CMT06-8"	W0L0121-05	Solid	30-Nov-10 09:04	06-Dec-2010
CMT07-4"	W0L0121-06	Solid	30-Nov-10 09:56	06-Dec-2010
RMT03-8"	W0L0121-07	Solid	30-Nov-10 14:10	06-Dec-2010
RMT06-5"	W0L0121-08	Solid	30-Nov-10 15:36	06-Dec-2010
RMT08-6"	W0L0121-09	Solid	01-Dec-10 09:03	06-Dec-2010
RMT08-15"	W0L0121-10	Solid	01-Dec-10 09:10	06-Dec-2010
RMT09-6"	W0L0121-11	Solid	01-Dec-10 08:30	06-Dec-2010

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

(Q6) SVL received the following containers outside of published EPA guidelines for preservation temperatures (0-6°C).
The guidelines do not pertain to nitric-preserved metals.

Default Cooler (Received Temperature: 7.2°C)

Labnumber	Container	Client ID	Labnumber	Container	Client ID
W0L0121-01 A	Bag, Ziploc	RMDS	W0L0121-01 B	Manilla Pulverize	RMDS
W0L0121-02 A	Bag, Ziploc	CMT03-12"	W0L0121-02 B	Manilla Pulverize	CMT03-12"
W0L0121-03 A	Bag, Ziploc	CMT04-6"	W0L0121-03 B	Manilla Pulverize	CMT04-6"
W0L0121-04 A	Bag, Ziploc	CMT05-4"	W0L0121-04 B	Manilla Pulverize	CMT05-4"
W0L0121-05 A	Bag, Ziploc	CMT06-8"	W0L0121-05 B	Manilla Pulverize	CMT06-8"
W0L0121-06 A	Bag, Ziploc	CMT07-4"	W0L0121-06 B	Manilla Pulverize	CMT07-4"
W0L0121-07 A	Bag, Ziploc	RMT03-8"	W0L0121-07 B	Manilla Pulverize	RMT03-8"
W0L0121-08 A	Bag, Ziploc	RMT06-5"	W0L0121-08 B	Manilla Pulverize	RMT06-5"
W0L0121-09 A	Bag, Ziploc	RMT08-6"	W0L0121-09 B	Manilla Pulverize	RMT08-6"
W0L0121-10 A	Bag, Ziploc	RMT08-15"	W0L0121-10 B	Manilla Pulverize	RMT08-15"
W0L0121-11 A	Bag, Ziploc	RMT09-6"	W0L0121-11 B	Manilla Pulverize	RMT09-6"

Case Narrative

California does not accredit for ABA ansdSulfur forms.

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ECM, Inc.
3525 Hyland Avenue,#200
Costa Mesa, CA 92626

Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS
Work Order: **W0L0121**
Reported: 17-Dec-10 14:28

Client Sample ID: **RMDS**
SVL Sample ID: **W0L0121-01 (Solid)**

Sample Report Page 1 of 1

Sampled: 18-Nov-10 09:50
Received: 06-Dec-10
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms										
Modified Sobek	**ABA**	156	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	AGP	< 0.3	TCaCO3/kT	0.3			N/A		12/10/10 12:50	
Modified Sobek	**ANP**	156	TCaCO3/kT	0.3	0.01		W050208	HJG	12/16/10 12:03	
Modified Sobek	Non-extractable Sulfur	< 0.01	%	0.01			W050208	HJG	12/10/10 12:50	
Modified Sobek	Non-Sulfate Sulfur	< 0.01	%	0.01			W050208	HJG	12/10/10 12:50	
Modified Sobek	Pyritic Sulfur	< 0.01	%	0.01			N/A		12/10/10 12:50	
Modified Sobek	Sulfate Sulfur	< 0.01	%	0.01			N/A		12/10/10 12:50	
Modified Sobek	Total Sulfur	< 0.01	%	0.01			W050208	HJG	12/10/10 12:50	
Acid/Base Accounting & Sulfur Forms (HCl Wash)										
Modified Sobek	**ABA-HCl**	156	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	AGP-HCl	< 0.3	TCaCO3/kT	0.3			N/A		12/10/10 12:50	
Modified Sobek	Non-extractable Sulfur	< 0.01	%	0.01			W050208	HJG	12/10/10 12:50	
Modified Sobek	Non-Sulfate Sulfur-HCl	< 0.01	%	0.01			W050208	HJG	12/10/10 12:50	
Modified Sobek	Pyritic Sulfur-HCl	< 0.01	%	0.01			N/A		12/10/10 12:50	
Modified Sobek	Sulfate Sulfur-HCl	< 0.01	%	0.01			N/A		12/10/10 12:50	
Modified Sobek	Total Sulfur	< 0.01	%	0.01			W050208	HJG	12/10/10 12:50	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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ECM, Inc.
3525 Hyland Avenue,#200
Costa Mesa, CA 92626

Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS
Work Order: **W0L0121**
Reported: 17-Dec-10 14:28

Client Sample ID: **CMT03-12"**
SVL Sample ID: **W0L0121-02 (Solid)**

Sample Report Page 1 of 1

Sampled: 29-Nov-10 15:26
Received: 06-Dec-10
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms										
Modified Sobek	**ABA**	151	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	**AGP**	0.8	TCaCO3/kT	0.3			N/A		12/16/10 09:15	
Modified Sobek	**ANP**	152	TCaCO3/kT	0.3	0.01		W050208	HJG	12/16/10 12:03	
Modified Sobek	**Non-extractable Sulfur**	0.02	%	0.01			W050208	HJG	12/16/10 08:27	
Modified Sobek	**Non-Sulfate Sulfur**	0.04	%	0.01			W050208	HJG	12/16/10 09:15	
Modified Sobek	**Pyritic Sulfur**	0.03	%	0.01			N/A		12/16/10 09:15	
Modified Sobek	Sulfate Sulfur	< 0.01	%	0.01			N/A		12/16/10 09:15	
Modified Sobek	**Total Sulfur**	0.05	%	0.01			W050208	HJG	12/10/10 12:53	
Acid/Base Accounting & Sulfur Forms (HCl Wash)										
Modified Sobek	**ABA-HCl**	152	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	AGP-HCl	< 0.3	TCaCO3/kT	0.3			N/A		12/16/10 10:25	
Modified Sobek	**Non-extractable Sulfur**	0.02	%	0.01			W050208	HJG	12/16/10 08:27	
Modified Sobek	**Non-Sulfate Sulfur-HCl**	0.03	%	0.01			W050208	HJG	12/16/10 10:25	
Modified Sobek	Pyritic Sulfur-HCl	< 0.01	%	0.01			N/A		12/16/10 10:25	
Modified Sobek	**Sulfate Sulfur-HCl**	0.02	%	0.01			N/A		12/16/10 10:25	
Modified Sobek	**Total Sulfur**	0.05	%	0.01			W050208	HJG	12/10/10 12:53	

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John Kern
Laboratory Director

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ECM, Inc.
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Costa Mesa, CA 92626

Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS
Work Order: **W0L0121**
Reported: 17-Dec-10 14:28

Client Sample ID: **CMT04-6"**
SVL Sample ID: **W0L0121-03 (Solid)**

Sample Report Page 1 of 1

Sampled: 29-Nov-10 16:17
Received: 06-Dec-10
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms										
Modified Sobek	**ABA**	141	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	AGP	< 0.3	TCaCO3/kT	0.3			N/A		12/10/10 12:56	
Modified Sobek	**ANP**	141	TCaCO3/kT	0.3	0.01		W050208	HJG	12/16/10 12:03	
Modified Sobek	Non-extractable Sulfur	< 0.01	%	0.01			W050208	HJG	12/10/10 12:56	
Modified Sobek	Non-Sulfate Sulfur	< 0.01	%	0.01			W050208	HJG	12/10/10 12:56	
Modified Sobek	Pyritic Sulfur	< 0.01	%	0.01			N/A		12/10/10 12:56	
Modified Sobek	Sulfate Sulfur	< 0.01	%	0.01			N/A		12/10/10 12:56	
Modified Sobek	Total Sulfur	< 0.01	%	0.01			W050208	HJG	12/10/10 12:56	
Acid/Base Accounting & Sulfur Forms (HCl Wash)										
Modified Sobek	**ABA-HCl**	141	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	AGP-HCl	< 0.3	TCaCO3/kT	0.3			N/A		12/10/10 12:56	
Modified Sobek	Non-extractable Sulfur	< 0.01	%	0.01			W050208	HJG	12/10/10 12:56	
Modified Sobek	Non-Sulfate Sulfur-HCl	< 0.01	%	0.01			W050208	HJG	12/10/10 12:56	
Modified Sobek	Pyritic Sulfur-HCl	< 0.01	%	0.01			N/A		12/10/10 12:56	
Modified Sobek	Sulfate Sulfur-HCl	< 0.01	%	0.01			N/A		12/10/10 12:56	
Modified Sobek	Total Sulfur	< 0.01	%	0.01			W050208	HJG	12/10/10 12:56	

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John Kern
Laboratory Director

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ECM, Inc.
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Costa Mesa, CA 92626

Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS
Work Order: **W0L0121**
Reported: 17-Dec-10 14:28

Client Sample ID: **CMT05-4"**
SVL Sample ID: **W0L0121-04 (Solid)**

Sample Report Page 1 of 1

Sampled: 30-Nov-10 08:17
Received: 06-Dec-10
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms										
Modified Sobek	**ABA**	442	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	**AGP**	4.5	TCaCO3/kT	0.3			N/A		12/16/10 09:18	
Modified Sobek	**ANP**	446	TCaCO3/kT	0.3	0.01		W050208	HJG	12/16/10 12:03	
Modified Sobek	Non-extractable Sulfur	< 0.01	%	0.01			W050208	HJG	12/16/10 08:30	
Modified Sobek	**Non-Sulfate Sulfur**	0.14	%	0.01			W050208	HJG	12/16/10 09:18	
Modified Sobek	**Pyritic Sulfur**	0.14	%	0.01			N/A		12/16/10 09:18	
Modified Sobek	**Sulfate Sulfur**	0.03	%	0.01			N/A		12/16/10 09:18	
Modified Sobek	**Total Sulfur**	0.17	%	0.01			W050208	HJG	12/10/10 12:59	
Acid/Base Accounting & Sulfur Forms (HCl Wash)										
Modified Sobek	**ABA-HCl**	444	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	**AGP-HCl**	2.4	TCaCO3/kT	0.3			N/A		12/16/10 10:28	
Modified Sobek	Non-extractable Sulfur	< 0.01	%	0.01			W050208	HJG	12/16/10 08:30	
Modified Sobek	**Non-Sulfate Sulfur-HCl**	0.08	%	0.01			W050208	HJG	12/16/10 10:28	
Modified Sobek	**Pyritic Sulfur-HCl**	0.08	%	0.01			N/A		12/16/10 10:28	
Modified Sobek	**Sulfate Sulfur-HCl**	0.10	%	0.01			N/A		12/16/10 10:28	
Modified Sobek	**Total Sulfur**	0.17	%	0.01			W050208	HJG	12/10/10 12:59	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

ECM, Inc.
3525 Hyland Avenue,#200
Costa Mesa, CA 92626

Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS
Work Order: **W0L0121**
Reported: 17-Dec-10 14:28

Client Sample ID: **CMT06-8"**
SVL Sample ID: **W0L0121-05 (Solid)**

Sample Report Page 1 of 1

Sampled: 30-Nov-10 09:04
Received: 06-Dec-10
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms										
Modified Sobek	**ABA**	216	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	**AGP**	1.1	TCaCO3/kT	0.3			N/A		12/16/10 09:28	
Modified Sobek	**ANP**	217	TCaCO3/kT	0.3	0.01		W050208	HJG	12/16/10 12:03	
Modified Sobek	**Non-extractable Sulfur**	0.04	%	0.01			W050208	HJG	12/16/10 08:32	
Modified Sobek	**Non-Sulfate Sulfur**	0.07	%	0.01			W050208	HJG	12/16/10 09:28	
Modified Sobek	**Pyritic Sulfur**	0.03	%	0.01			N/A		12/16/10 09:28	
Modified Sobek	Sulfate Sulfur	< 0.01	%	0.01			N/A		12/16/10 09:28	
Modified Sobek	**Total Sulfur**	0.07	%	0.01			W050208	HJG	12/10/10 13:02	
Acid/Base Accounting & Sulfur Forms (HCl Wash)										
Modified Sobek	**ABA-HCl**	217	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	AGP-HCl	< 0.3	TCaCO3/kT	0.3			N/A		12/16/10 10:30	
Modified Sobek	**Non-extractable Sulfur**	0.04	%	0.01			W050208	HJG	12/16/10 08:32	
Modified Sobek	**Non-Sulfate Sulfur-HCl**	0.03	%	0.01			W050208	HJG	12/16/10 10:30	
Modified Sobek	Pyritic Sulfur-HCl	< 0.01	%	0.01			N/A		12/16/10 10:30	
Modified Sobek	**Sulfate Sulfur-HCl**	0.04	%	0.01			N/A		12/16/10 10:30	
Modified Sobek	**Total Sulfur**	0.07	%	0.01			W050208	HJG	12/10/10 13:02	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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ECM, Inc.
3525 Hyland Avenue,#200
Costa Mesa, CA 92626

Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS
Work Order: **W0L0121**
Reported: 17-Dec-10 14:28

Client Sample ID: **CMT07-4"**
SVL Sample ID: **W0L0121-06 (Solid)**

Sample Report Page 1 of 1

Sampled: 30-Nov-10 09:56
Received: 06-Dec-10
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms										
Modified Sobek	**ABA**	197	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	AGP	< 0.3	TCaCO3/kT	0.3			N/A		12/16/10 09:31	
Modified Sobek	**ANP**	197	TCaCO3/kT	0.3	0.01		W050208	HJG	12/16/10 12:03	
Modified Sobek	Non-extractable Sulfur	< 0.01	%	0.01			W050208	HJG	12/16/10 08:35	
Modified Sobek	Non-Sulfate Sulfur	< 0.01	%	0.01			W050208	HJG	12/16/10 09:31	
Modified Sobek	Pyritic Sulfur	< 0.01	%	0.01			N/A		12/16/10 09:31	
Modified Sobek	**Sulfate Sulfur**	0.01	%	0.01			N/A		12/16/10 09:31	
Modified Sobek	**Total Sulfur**	0.01	%	0.01			W050208	HJG	12/10/10 13:05	
Acid/Base Accounting & Sulfur Forms (HCl Wash)										
Modified Sobek	**ABA-HCl**	197	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	AGP-HCl	< 0.3	TCaCO3/kT	0.3			N/A		12/16/10 10:33	
Modified Sobek	Non-extractable Sulfur	< 0.01	%	0.01			W050208	HJG	12/16/10 08:35	
Modified Sobek	Non-Sulfate Sulfur-HCl	< 0.01	%	0.01			W050208	HJG	12/16/10 10:33	
Modified Sobek	Pyritic Sulfur-HCl	< 0.01	%	0.01			N/A		12/16/10 10:33	
Modified Sobek	**Sulfate Sulfur-HCl**	0.01	%	0.01			N/A		12/16/10 10:33	
Modified Sobek	**Total Sulfur**	0.01	%	0.01			W050208	HJG	12/10/10 13:05	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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3525 Hyland Avenue,#200
Costa Mesa, CA 92626

Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS
Work Order: **W0L0121**
Reported: 17-Dec-10 14:28

Client Sample ID: **RMT03-8"**
SVL Sample ID: **W0L0121-07 (Solid)**

Sample Report Page 1 of 1

Sampled: 30-Nov-10 14:10
Received: 06-Dec-10
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms										
Modified Sobek	**ABA**	15.2	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	**AGP**	5.4	TCaCO3/kT	0.3			N/A		12/16/10 09:36	
Modified Sobek	**ANP**	20.6	TCaCO3/kT	0.3	0.01		W050208	HJG	12/16/10 12:03	
Modified Sobek	**Non-extractable Sulfur**	0.01	%	0.01			W050208	HJG	12/16/10 08:37	
Modified Sobek	**Non-Sulfate Sulfur**	0.17	%	0.01			W050208	HJG	12/16/10 09:36	
Modified Sobek	**Pyritic Sulfur**	0.17	%	0.01			N/A		12/16/10 09:36	
Modified Sobek	**Sulfate Sulfur**	0.17	%	0.01			N/A		12/16/10 09:36	
Modified Sobek	**Total Sulfur**	0.34	%	0.01			W050208	HJG	12/10/10 13:14	
Acid/Base Accounting & Sulfur Forms (HCl Wash)										
Modified Sobek	**ABA-HCl**	16.6	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	**AGP-HCl**	4.1	TCaCO3/kT	0.3			N/A		12/16/10 10:35	
Modified Sobek	**Non-extractable Sulfur**	0.01	%	0.01			W050208	HJG	12/16/10 08:37	
Modified Sobek	**Non-Sulfate Sulfur-HCl**	0.13	%	0.01			W050208	HJG	12/16/10 10:35	
Modified Sobek	**Pyritic Sulfur-HCl**	0.13	%	0.01			N/A		12/16/10 10:35	
Modified Sobek	**Sulfate Sulfur-HCl**	0.21	%	0.01			N/A		12/16/10 10:35	
Modified Sobek	**Total Sulfur**	0.34	%	0.01			W050208	HJG	12/10/10 13:14	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

ECM, Inc.
3525 Hyland Avenue,#200
Costa Mesa, CA 92626

Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS
Work Order: **W0L0121**
Reported: 17-Dec-10 14:28

Client Sample ID: **RMT06-5"**
SVL Sample ID: **W0L0121-08 (Solid)**

Sample Report Page 1 of 1

Sampled: 30-Nov-10 15:36
Received: 06-Dec-10
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms										
Modified Sobek	**ABA**	144	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	**AGP**	0.4	TCaCO3/kT	0.3			N/A		12/16/10 09:38	
Modified Sobek	**ANP**	144	TCaCO3/kT	0.3	0.01		W050208	HJG	12/16/10 12:03	
Modified Sobek	Non-extractable Sulfur	< 0.01	%	0.01			W050208	HJG	12/16/10 08:40	
Modified Sobek	**Non-Sulfate Sulfur**	0.01	%	0.01			W050208	HJG	12/16/10 09:38	
Modified Sobek	**Pyritic Sulfur**	0.01	%	0.01			N/A		12/16/10 09:38	
Modified Sobek	Sulfate Sulfur	< 0.01	%	0.01			N/A		12/16/10 09:38	
Modified Sobek	**Total Sulfur**	0.02	%	0.01			W050208	HJG	12/10/10 13:17	
Acid/Base Accounting & Sulfur Forms (HCl Wash)										
Modified Sobek	**ABA-HCl**	144	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	**AGP-HCl**	0.5	TCaCO3/kT	0.3			N/A		12/16/10 10:38	
Modified Sobek	Non-extractable Sulfur	< 0.01	%	0.01			W050208	HJG	12/16/10 08:40	
Modified Sobek	**Non-Sulfate Sulfur-HCl**	0.02	%	0.01			W050208	HJG	12/16/10 10:38	
Modified Sobek	**Pyritic Sulfur-HCl**	0.02	%	0.01			N/A		12/16/10 10:38	
Modified Sobek	Sulfate Sulfur-HCl	< 0.01	%	0.01			N/A		12/16/10 10:38	
Modified Sobek	**Total Sulfur**	0.02	%	0.01			W050208	HJG	12/10/10 13:17	

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John Kern
Laboratory Director

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ECM, Inc.
3525 Hyland Avenue,#200
Costa Mesa, CA 92626

Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS
Work Order: **W0L0121**
Reported: 17-Dec-10 14:28

Client Sample ID: **RMT08-6"**
SVL Sample ID: **W0L0121-09 (Solid)**

Sample Report Page 1 of 1

Sampled: 01-Dec-10 09:03
Received: 06-Dec-10
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms										
Modified Sobek	**ABA**	225	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	AGP	< 0.3	TCaCO3/kT	0.3			N/A		12/16/10 09:41	
Modified Sobek	**ANP**	224	TCaCO3/kT	0.3	0.01		W050208	HJG	12/16/10 12:03	
Modified Sobek	**Non-extractable Sulfur**	0.01	%	0.01			W050208	HJG	12/16/10 08:43	
Modified Sobek	Non-Sulfate Sulfur	< 0.01	%	0.01			W050208	HJG	12/16/10 09:41	
Modified Sobek	Pyritic Sulfur	< 0.01	%	0.01			N/A		12/16/10 09:41	
Modified Sobek	**Sulfate Sulfur**	0.03	%	0.01			N/A		12/16/10 09:41	
Modified Sobek	**Total Sulfur**	0.03	%	0.01			W050208	HJG	12/10/10 13:20	
Acid/Base Accounting & Sulfur Forms (HCl Wash)										
Modified Sobek	**ABA-HCl**	224	TCaCO3/kT	0.3			N/A		12/16/10 15:51	
Modified Sobek	AGP-HCl	< 0.3	TCaCO3/kT	0.3			N/A		12/16/10 15:51	
Modified Sobek	**Non-extractable Sulfur**	0.01	%	0.01			W050208	HJG	12/16/10 08:43	
Modified Sobek	**Non-Sulfate Sulfur-HCl**	0.02	%	0.01			W050208	HJG	12/16/10 15:51	
Modified Sobek	Pyritic Sulfur-HCl	< 0.01	%	0.01			N/A		12/16/10 15:51	
Modified Sobek	Sulfate Sulfur-HCl	< 0.01	%	0.01			N/A		12/16/10 15:51	
Modified Sobek	**Total Sulfur**	0.03	%	0.01			W050208	HJG	12/10/10 13:20	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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ECM, Inc.
3525 Hyland Avenue,#200
Costa Mesa, CA 92626

Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS
Work Order: **W0L0121**
Reported: 17-Dec-10 14:28

Client Sample ID: **RMT08-15"**
SVL Sample ID: **W0L0121-10 (Solid)**

Sample Report Page 1 of 1

Sampled: 01-Dec-10 09:10
Received: 06-Dec-10
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms										
Modified Sobek	**ABA**	133	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	**AGP**	0.8	TCaCO3/kT	0.3			N/A		12/16/10 09:45	
Modified Sobek	**ANP**	134	TCaCO3/kT	0.3	0.01		W050208	HJG	12/16/10 12:03	
Modified Sobek	**Non-extractable Sulfur**	0.01	%	0.01			W050208	HJG	12/16/10 08:45	
Modified Sobek	**Non-Sulfate Sulfur**	0.04	%	0.01			W050208	HJG	12/16/10 09:45	
Modified Sobek	**Pyritic Sulfur**	0.03	%	0.01			N/A		12/16/10 09:45	
Modified Sobek	**Sulfate Sulfur**	0.04	%	0.01			N/A		12/16/10 09:45	
Modified Sobek	**Total Sulfur**	0.08	%	0.01			W050208	HJG	12/10/10 13:23	
Acid/Base Accounting & Sulfur Forms (HCl Wash)										
Modified Sobek	**ABA-HCl**	134	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	**AGP-HCl**	0.4	TCaCO3/kT	0.3			N/A		12/16/10 10:50	
Modified Sobek	**Non-extractable Sulfur**	0.01	%	0.01			W050208	HJG	12/16/10 08:45	
Modified Sobek	**Non-Sulfate Sulfur-HCl**	0.02	%	0.01			W050208	HJG	12/16/10 10:50	
Modified Sobek	**Pyritic Sulfur-HCl**	0.01	%	0.01			N/A		12/16/10 10:50	
Modified Sobek	**Sulfate Sulfur-HCl**	0.05	%	0.01			N/A		12/16/10 10:50	
Modified Sobek	**Total Sulfur**	0.08	%	0.01			W050208	HJG	12/10/10 13:23	

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John Kern
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ECM, Inc.
3525 Hyland Avenue,#200
Costa Mesa, CA 92626

Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS
Work Order: **W0L0121**
Reported: 17-Dec-10 14:28

Client Sample ID: **RMT09-6"**
SVL Sample ID: **W0L0121-11 (Solid)**

Sample Report Page 1 of 1

Sampled: 01-Dec-10 08:30
Received: 06-Dec-10
Sampled By:

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms										
Modified Sobek	**ABA**	299	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	AGP	< 0.3	TCaCO3/kT	0.3			N/A		12/16/10 09:48	
Modified Sobek	**ANP**	299	TCaCO3/kT	0.3	0.01		W050208	HJG	12/16/10 12:03	
Modified Sobek	**Non-extractable Sulfur**	0.01	%	0.01			W050208	HJG	12/16/10 08:54	
Modified Sobek	**Non-Sulfate Sulfur**	0.02	%	0.01			W050208	HJG	12/16/10 09:48	
Modified Sobek	Pyritic Sulfur	< 0.01	%	0.01			N/A		12/16/10 09:48	
Modified Sobek	Sulfate Sulfur	< 0.01	%	0.01			N/A		12/16/10 09:48	
Modified Sobek	**Total Sulfur**	0.02	%	0.01			W050208	HJG	12/10/10 13:26	
Acid/Base Accounting & Sulfur Forms (HCl Wash)										
Modified Sobek	**ABA-HCl**	300	TCaCO3/kT	0.3			N/A		12/16/10 12:03	
Modified Sobek	AGP-HCl	< 0.3	TCaCO3/kT	0.3			N/A		12/16/10 10:53	
Modified Sobek	**Non-extractable Sulfur**	0.01	%	0.01			W050208	HJG	12/16/10 08:54	
Modified Sobek	Non-Sulfate Sulfur-HCl	< 0.01	%	0.01			W050208	HJG	12/16/10 10:53	
Modified Sobek	Pyritic Sulfur-HCl	< 0.01	%	0.01			N/A		12/16/10 10:53	
Modified Sobek	**Sulfate Sulfur-HCl**	0.02	%	0.01			N/A		12/16/10 10:53	
Modified Sobek	**Total Sulfur**	0.02	%	0.01			W050208	HJG	12/10/10 13:26	

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ECM, Inc.
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Costa Mesa, CA 92626

Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS
Work Order: **W0L0121**
Reported: 17-Dec-10 14:28

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms								
Modified Sobek	ANP	TCaCO3/kT	<0.3	0.01	0.3	W050208	16-Dec-10	
Modified Sobek	Non-Sulfate Sulfur	%	<0.01		0.01	W050208	16-Dec-10	
Modified Sobek	Total Sulfur	%	<0.01		0.01	W050208	10-Dec-10	
Modified Sobek	Non-extractable Sulfur	%	<0.01		0.01	W050208	16-Dec-10	
Acid/Base Accounting & Sulfur Forms (HCl Wash)								
Modified Sobek	Non-Sulfate Sulfur-HCl	%	<0.01		0.01	W050208	16-Dec-10	
Modified Sobek	Non-Sulfate Sulfur-HCl	%	<0.01		0.01	W050208	16-Dec-10	
Modified Sobek	Total Sulfur	%	<0.01		0.01	W050208	10-Dec-10	
Modified Sobek	Non-extractable Sulfur	%	<0.01		0.01	W050208	16-Dec-10	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms									
Modified Sobek	ANP	TCaCO3/kT	21.2	24.9	84.9	80 - 120	W050208	16-Dec-10	
Modified Sobek	Total Sulfur	%	3.08	3.21	96.0	80 - 120	W050208	10-Dec-10	
Acid/Base Accounting & Sulfur Forms (HCl Wash)									
Modified Sobek	Total Sulfur	%	3.08	3.21	96.0	80 - 120	W050208	10-Dec-10	

Quality Control - DUPLICATE Data

Method	Analyte	Units	Duplicate Result	Sample Result	RPD	RPD Limit	Batch ID	Analyzed	Notes
Acid/Base Accounting & Sulfur Forms									
Modified Sobek	ANP	TCaCO3/kT	156	156	0.3	20	W050208	16-Dec-10	
Modified Sobek	Non-Sulfate Sulfur	%	0.04	0.04	14.8	20	W050208	16-Dec-10	
Modified Sobek	Total Sulfur	%	<0.01	<0.01	<RL	20	W050208	10-Dec-10	
Modified Sobek	Non-extractable Sulfur	%	0.02	0.02	3.9	20	W050208	16-Dec-10	
Acid/Base Accounting & Sulfur Forms (HCl Wash)									
Modified Sobek	Non-Sulfate Sulfur-HCl	%	0.02	0.02	13.6	20	W050208	16-Dec-10	
Modified Sobek	Non-Sulfate Sulfur-HCl	%	0.03	0.03	6.0	20	W050208	16-Dec-10	
Modified Sobek	Total Sulfur	%	<0.01	<0.01	<RL	20	W050208	10-Dec-10	
Modified Sobek	Non-extractable Sulfur	%	0.02	0.02	3.9	20	W050208	16-Dec-10	

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

ECM, Inc. 3525 Hyland Avenue,#200 Costa Mesa, CA 92626	**Project Name: BLM CHICAGO RESEARCH SAMPLING AND ANALYSIS** Work Order: **W0L0121** Reported: 17-Dec-10 14:28

Notes and Definitions

LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

7.2*

SVL Analytical
1 Government Gulch
Kellogg, Idaho 83837
(208) 784-1258

Chain of Custody Record

WOH0121

Client Contact	Project Manager: Jim Langman	Site Contact: Chris McCormack	Date: 11/18/2010-12/1/2010	COC No: 1
Environmental Cost Management Inc. (ECM)	Tel/Fax: (303) 713-0850	Lab Contact:	Carrier: Fed Ex	1 of 1 COC's
3525 Hyland Ave Suite 200	Analysis Turnaround Time			Job No.
Costa Mesa, CA 92626	Calendar (C) or Work Days (W): W			
(714) 662-2759 Phone	TAT if different from Below _____			
(714) 662-2758 FAX	[x] 2 weeks			SDG No.
Project Name: BLM-Chicago-Research	[ ] 1 week			
Site: BLM-Chicago/Research	[ ] 2 days			
P O # Chicago-Research Sampling and Analysis	[ ] 1 day			

Sample Identification	Sample Date	Sample Time	Pres.	Matrix	# of Cont.	Acid-Base Accounting (SOBEK with HCl Wash)	Sample Specific Notes.
RMDS	11/18/2010	9:50	None	Soil	1	X	
CMT03-12"	11/29/2010	15:26	None	Soil	1	X	
CMT04-6"	11/29/2010	16:17	None	Soil	1	X	
CMT05-4"	11/30/2010	8:17	None	Soil	1	X	
CMT06-8"	11/30/2010	9:04	None	Soil	1	X	
CMT07-4"	11/30/2010	9:56	None	Soil	1	X	
RMT03-8"	11/30/2010	14:10	None	Soil	1	X	
RMT06-5"	11/30/2010	15:36	None	Soil	1	X	
RMT08-6"	12/1/2010	9:03	None	Soil	1	X	
RMT08-15"	12/1/2010	9:10	None	Soil	1	X	
RMT09-6"	12/1/2010	8:30	None	Soil	1	X	

Possible Hazard Identification
[x] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
[ ] Return To Client [x] Disposal By Lab [ ] Archive For _____ Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Chris McCormack	Environmental Cost Management, Inc.	12-2-10 ~4PM	Fed Ex	Fed Ex	12-2-10 ~4PM
Relinquished by:	Company:	Date/Time:	Received by: R. Stubbing	Company: SVL	Date/Time: 12/6/10 10:34

* no date or time on sample labels RS 12/6/10