



Saturday, March 14, 2015

Karen Waters-Husted  
CH2M HILL Plateau Remediation Company  
2420 Stevens Center  
Richland, WA 99352

Re: ALS Workorder: 1503034  
Project Name: RCRA, MARCH 2015  
Project Number: W15-003

Dear Ms. Waters-Husted:

Two water samples were received from CH2M HILL Plateau Remediation Company, on 3/4/2015. The samples were scheduled for the following analysis:

Metals

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental  
Julie Ellingson  
Project Manager

JME/jme  
Enclosure(s):

ALS is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Laboratory Certifications	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri	175
Nebraska	NE-OS-24-13
Nevada (NV)	CO000782008A
New Jersey (NJ)	CO003
North Dakota (ND)	R-057
Oklahoma	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington	C1280

**ALS Environmental -- FC****Sample Number(s) Cross-Reference Table**

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**OrderNum:** 1503034**Client Name:** CH2M HILL Plateau Remediation Company**Client Project Name:** RCRA, MARCH 2015**Client Project Number:** W15-003**Client PO Number:** BOA 54854

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<b>Client Sample Number</b>	<b>Lab Sample Number</b>	<b>COC Number</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Time Collected</b>
B30CH6	1503034-1		WATER	03-Mar-15	11:09
B30CJ0	1503034-2		WATER	03-Mar-15	11:09

Collector: S.W. King/CHPRC  
 Contact/Requester: Karen Waters-Husted  
 Telephone No. 509-376-4650  
 SAF No. W15-003  
 Sampling Origin: Hanford Site  
 Purchase Order/Charge Code: 300071  
 Project Title: RCRA, MARCH 2015  
 Logbook No. HNF-N-506 70 / 29  
 Ice Chest No. 6WS-383  
 Shipped To (Lab): ALS Environmental  
 Method of Shipment: Commercial Carrier  
 Bill of Lading/Air Bill No. 5773039970131  
 Protocol: RCRA  
 Priority: 30 Days  
 Commercial Carrier: **PRIORITY**  
 Offsite Property No. 5453

**POSSIBLE SAMPLE HAZARDS/REMARKS**  
 \*\* \*\* Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS: Hold Time  
 Total Activity Exemption: Yes  No

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30CH6	N	W	MAR 03 2015	1109	1x500-mL G/P	6010_METALS_ICP: COMMON; 6020_METALS_ICPMS: Lead (1)	6 Months	HNO3 to pH <2
B30C10	Y	W			1x500-mL G/P	6010_METALS_ICP: COMMON; 6020_METALS_ICPMS: Lead (1)	6 Months	HNO3 to pH <2

ALS1503034

March 14, 2015

Relinquished By S.W. King/CHPRC	Print <i>[Signature]</i>	Sign	Date/Time MAR 03 2015 1130	Received By L.D. Wall CHPRC	Print <i>[Signature]</i>	Sign	Date/Time MAR 03 2015 1130	Matrix *
Relinquished By L.D. Wall CHPRC	Print <i>[Signature]</i>	Sign	Date/Time MAR 03 2015 1400	Received By FEDEX	Print FEDEX	Sign	Date/Time MAR 03 2015 1130	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By FED EX	Print <i>[Signature]</i>	Sign	Date/Time 3-4-15 1100	Received By C Drumbler C Trimble	Print <i>[Signature]</i>	Sign	Date/Time 3-4-15 1100	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By 4	Print <i>[Signature]</i>	Sign	Date/Time	Received By	Print	Sign	Date/Time	

DISPOSAL METHOD (e.g., Return to customer, per lab procedure, used in process)



ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC

Workorder No: 1503034

Project Manager: JE

Initials: CDT Date: 3-4-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/> YES	NO
3. Are Custody seals on sample containers intact?	NONE	<input checked="" type="radio"/> YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	<input checked="" type="radio"/> N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	<input checked="" type="radio"/> N/A	YES	NO
15. Do any water samples contain sediment? Amount of sediment: ___ dusting ___ moderate ___ heavy	Amount N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		YES	<input checked="" type="radio"/> NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	RAD ONLY	YES	<input checked="" type="radio"/> NO
Cooler #: <u>1</u>			
Temperature (°C): <u>Amb</u>			
No. of custody seals on cooler: <u>2</u>			
External µR/hr reading: <u>11</u>			
Background µR/hr reading: <u>11</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES / NO / NA (If no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

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If applicable, was the client contacted? YES / NO / NA Contact: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Project Manager Signature / Date: [Signature] 3/4/15

From: (509) 528-9426  
Lesly Wall  
CH2M  
6267 Latah St.  
6269 Latah St.  
Richland, WA 99354

Origin ID: PSCA



Ship Date: 03MAR15  
ActWgt: 7.0 LB  
CAD: 107088051/NET3810

1503034

SHIP TO: (970) 490-1511

BILL THIRD PARTY

**Julle Ellingson**  
**ALS Global**  
**225 Commerce Drive**

**FORT COLLINS, CO 80524**

Delivery Address Bar Code



Ref # ptr# 5453  
Invoice #  
PO #  
Dept #

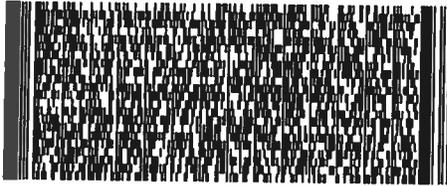
11  
-2

WED - 04 MAR 10:30A  
PRIORITY OVERNIGHT

TRK# 7730 3997 0131  
0201

DSR  
80524  
CO-US  
DEN

**XH FTCA**



537J1879AEE4B



# Metals

## Case Narrative

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### **CH2M HILL Plateau Remediation Company**

RCRA, MARCH 2015 – W15-003

Work Order Number: 1503034

1. This report consists of 2 water samples for total recoverable or dissolved metals.
2. The samples were received cool and intact by ALS on 03/04/15.
3. The sample for dissolved metals had been filtered prior to receipt. Both samples had a pH less than 2 upon receipt.
4. The samples were prepared and analyzed based on SW-846, 3<sup>rd</sup> Edition procedures.

For analysis by Trace ICP and ICP-MS, the samples were digested following method 3005A and the current revision of SOP 806.

5. Analysis by Trace ICP followed method 6010B and the current revision of SOP 834.

Analysis by ICP-MS followed method 6020A and the current revision of SOP 827.

6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
7. The samples were prepared and analyzed within the established hold times.

All in house quality control procedures were followed, as described below.

8. General quality control procedures.
  - A preparation (method) blank and laboratory control sample were digested and analyzed with the samples in this digestion batch.



- The preparation (method) blank associated with this digestion batch was below the reporting limit for the requested analytes. Sample results have been compared to the blank results.
  - All laboratory control sample criteria were met.
  - All initial and continuing calibration blanks were below the reporting limit for the requested analytes.
  - All initial and continuing calibration verifications were within the acceptance criteria for the requested analytes.
  - The interference check samples and high standard readbacks associated with Method 6010B were within acceptance criteria.
  - The interference check samples associated with Method 6020A were analyzed.
9. Matrix specific quality control procedures.

Sample 1503034-1 was designated as the quality control sample for each analysis.

Similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
  - A sample duplicate and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
  - A serial dilution was analyzed with each ICP batch. All acceptance criteria were met.
10. It is a standard practice that samples for ICP-MS are analyzed at a dilution. The 10X factor can be considered an artifact of the prep and does not indicate a secondary dilution and is therefore not flagged as a dilution.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

  
 \_\_\_\_\_  
 Jill Latelle  
 Inorganics Primary Data Reviewer

3/13/15  
 Date

  
 \_\_\_\_\_  
 Julie Ellison  
 Inorganics Final Data Reviewer

3/14/15  
 Date



### Inorganic Data Reporting Qualifiers

The following qualifiers are used as needed by the laboratory when reporting results of inorganic analyses.

- Result qualifier -- A "B" is entered if the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to the Method Detection Limit (MDL). If the analyte was analyzed for but not detected a "U" is entered. For samples, negative values are reported as non-detects ("U" flagged). For blanks, if the absolute value of the negative value is above the MDL and below the reporting limit, then the result is "B" flagged.
- QC qualifier -- Specified entries and their meanings are as follows:
  - E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
  - M - Duplicate injection precision was not met.
  - N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
  - Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
  - \* - Duplicate analysis (relative percent difference) not within control limits.
  - S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.
  - C - The analyte was detected in both the sample and the associated QC blank, and the sample concentration was  $\leq 5X$  the blank concentration.
  - D - Analyte was reported at a secondary dilution factor, typically  $DF > 1$  (i.e., the primary preparation required dilution to either bring the analyte within the calibration range or to minimize interference). Required for organics/wetchem if the sample was diluted.

**Total Recoverable ICP Metals****Method SW6010B****Sample Results**

Lab Name: ALS Environmental -- FC

Work Order Number: 1503034

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: RCRA, MARCH 2015 W15-003

Field ID:	B30CH6
Lab ID:	1503034-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 03-Mar-15

Date Extracted: 06-Mar-15

Date Analyzed: 09-Mar-15

Prep Method: SW3005 Rev A

Prep Batch: IP150306-2

QCBatchID: IP150306-2-1

Run ID: IP150309-2A3

Cleanup: NONE

Basis: As Received

File Name:

Analyst: Nathan A. Quatier

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-36-0	ANTIMONY	1	4.8	20	4.8	U	
7440-38-2	ARSENIC	1	10	10	2.6		
7440-39-3	BARIUM	1	38	20	0.96		
7440-43-9	CADMIUM	1	0.51	5	0.42	B	
7440-70-2	CALCIUM	1	53000	1000	88		
7440-47-3	CHROMIUM	1	30	10	1.2		
7440-48-4	COBALT	1	0.59	10	0.59	U	
7440-50-8	COPPER	1	7.2	8	7.2	U	
7439-89-6	IRON	1	240	50	18		
7439-95-4	MAGNESIUM	1	14000	750	91		
7439-96-5	MANGANESE	1	5.7	5	0.64		
7440-02-0	NICKEL	1	25	20	2.2		
7440-09-7	POTASSIUM	1	7000	1000	150		
7440-22-4	SILVER	1	1	10	1	U	
7440-23-5	SODIUM	1	18000	500	130		
7440-62-2	VANADIUM	1	24	10	1.8		
7440-66-6	ZINC	1	5.5	20	5.5	U	

Data Package ID: IP1503034-1

**Dissolved ICP Metals****Method SW6010B****Sample Results**

Lab Name: ALS Environmental -- FC

Work Order Number: 1503034

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: RCRA, MARCH 2015 W15-003

Field ID:	B30CJ0
Lab ID:	1503034-2

Sample Matrix: WATER  
 % Moisture: N/A  
 Date Collected: 03-Mar-15  
 Date Extracted: 06-Mar-15  
 Date Analyzed: 09-Mar-15  
 Prep Method: SW3005 Rev A

Prep Batch: IP150306-2  
 QCBatchID: IP150306-2-1  
 Run ID: IP150309-2A3  
 Cleanup: NONE  
 Basis: As Received  
 File Name:

Analyst: Nathan A. Quatier  
 Sample Aliquot: 50 ml  
 Final Volume: 50 ml  
 Result Units: UG/L  
 Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-36-0	ANTIMONY	1	4.8	20	4.8	U	
7440-38-2	ARSENIC	1	10	10	2.6		
7440-39-3	BARIUM	1	37	20	0.96		
7440-43-9	CADMIUM	1	0.42	5	0.42	U	
7440-70-2	CALCIUM	1	53000	1000	88		
7440-47-3	CHROMIUM	1	7.9	10	1.2	B	
7440-48-4	COBALT	1	0.59	10	0.59	U	
7440-50-8	COPPER	1	7.2	8	7.2	U	
7439-89-6	IRON	1	18	50	18	U	
7439-95-4	MAGNESIUM	1	15000	750	91		
7439-96-5	MANGANESE	1	1.1	5	0.64	B	
7440-02-0	NICKEL	1	19	20	2.2	B	
7440-09-7	POTASSIUM	1	7100	1000	150		
7440-22-4	SILVER	1	1	10	1	U	
7440-23-5	SODIUM	1	19000	500	130		
7440-62-2	VANADIUM	1	23	10	1.8		
7440-66-6	ZINC	1	5.5	20	5.5	U	

Data Package ID: IP1503034-1

**Total Recoverable LEAD****Method SW6020A****Sample Results****Lab Name:** ALS Environmental -- FC**Client Name:** CH2M HILL Plateau Remediation Company**Client Project ID:** RCRA, MARCH 2015 W 15-003**Work Order Number:** 1503034**Final Volume:** 50 ml**Reporting Basis:** As Received**Matrix:** WATER**Analyst:** Brent A. Stanfield**Result Units:** UG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Flag	Sample Aliquot
B30CH6	1503034-1	3/3/2015	3/6/2015	03/09/2015	N/A	10	0.33	0.5	0.25	B	50 ml

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** *IM1503034-1*

**Dissolved LEAD****Method SW6020A****Sample Results**

**Lab Name:** ALS Environmental -- FC  
**Client Name:** CH2M HILL Plateau Remediation Company  
**Client Project ID:** RCRA, MARCH 2015 W 15-003  
**Work Order Number:** 1503034      **Final Volume:** 50 ml  
**Reporting Basis:** As Received      **Matrix:** WATER  
**Analyst:** Brent A. Stanfield      **Result Units:** UG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Flag	Sample Aliquot
B30CJ0	1503034-2	3/3/2015	3/6/2015	03/09/2015	N/A	10	0.25	0.5	0.25	U	50 ml

**Comments:**

1. ND or U = Not Detected at or above the client requested detection limit.

**Data Package ID:** *IM1503034-1*

**ICP Metals****Method SW6010B****Method Blank****Lab Name:** ALS Environmental -- FC**Work Order Number:** 1503034**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** RCRA, MARCH 2015 W15-003**Lab ID:** FP150306-2MB**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** N/A**Date Extracted:** 06-Mar-15**Date Analyzed:** 09-Mar-15**Prep Batch:** IP150306-2**QCBatchID:** IP150306-2-1**Run ID:** IP150309-2A3**Cleanup:** NONE**Basis:** N/A**File Name:****Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**Clean DF:** 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-36-0	ANTIMONY	1	4.8	20	4.8	U	
7440-38-2	ARSENIC	1	2.6	10	2.6	U	
7440-39-3	BARIUM	1	0.96	20	0.96	U	
7440-43-9	CADMIUM	1	0.42	5	0.42	U	
7440-70-2	CALCIUM	1	88	1000	88	U	
7440-47-3	CHROMIUM	1	1.2	10	1.2	U	
7440-48-4	COBALT	1	0.59	10	0.59	U	
7440-50-8	COPPER	1	7.2	8	7.2	U	
7439-89-6	IRON	1	18	50	18	U	
7439-95-4	MAGNESIUM	1	91	750	91	U	
7439-96-5	MANGANESE	1	0.64	5	0.64	U	
7440-02-0	NICKEL	1	2.2	20	2.2	U	
7440-09-7	POTASSIUM	1	150	1000	150	U	
7440-22-4	SILVER	1	1	10	1	U	
7440-23-5	SODIUM	1	130	500	130	U	
7440-62-2	VANADIUM	1	1.8	10	1.8	U	
7440-66-6	ZINC	1	5.5	20	5.5	U	

**Data Package ID:** IP1503034-1

**ICP Metals****Method SW6010B****Laboratory Control Sample**

Lab Name: ALS Environmental -- FC

Work Order Number: 1503034

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: RCRA, MARCH 2015 W15-003

Lab ID: FP150306-2LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03/06/2015

Date Analyzed: 03/09/2015

Prep Method: SW3005A

Prep Batch: IP150306-2

QCBatchID: IP150306-2-1

Run ID: IP150309-2A3

Cleanup: NONE

Basis: N/A

File Name:

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-36-0	ANTIMONY	500	535	20		107	80 - 120%
7440-38-2	ARSENIC	1000	1040	10		104	80 - 120%
7440-39-3	BARIUM	1000	1050	20		105	80 - 120%
7440-43-9	CADMIUM	50	50.7	5		101	80 - 120%
7440-70-2	CALCIUM	40000	39200	1000		98	80 - 120%
7440-47-3	CHROMIUM	200	216	10		108	80 - 120%
7440-48-4	COBALT	500	507	10		101	80 - 120%
7440-50-8	COPPER	250	254	8		102	80 - 120%
7439-89-6	IRON	1000	1150	50		115	80 - 120%
7439-95-4	MAGNESIUM	40000	39200	750		98	80 - 120%
7439-96-5	MANGANESE	500	558	5		112	80 - 120%
7440-02-0	NICKEL	500	513	20		103	80 - 120%
7440-09-7	POTASSIUM	40000	39400	1000		98	80 - 120%
7440-22-4	SILVER	100	107	10		107	80 - 120%
7440-23-5	SODIUM	40000	40600	500		101	80 - 120%
7440-62-2	VANADIUM	500	519	10		104	80 - 120%
7440-66-6	ZINC	500	531	20		106	80 - 120%

Data Package ID: IP1503034-1

## ICP Metals

## Method SW6010B

## Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1503034

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: RCRA, MARCH 2015 W15-003

Field ID: B30CH6
LabID: 1503034-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 03-Mar-15

Date Extracted: 06-Mar-15

Date Analyzed: 09-Mar-15

Prep Method: SW3005 Rev A

Prep Batch: IP150306-2

QCBatchID: IP150306-2-1

Run ID: IP150309-2A3

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

File Name:

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-36-0	ANTIMONY	4.8	U	523		20	500	105	80 - 120%
7440-38-2	ARSENIC	10		1050		10	1000	104	80 - 120%
7440-39-3	BARIUM	38		1050		20	1000	102	80 - 120%
7440-43-9	CADMIUM	0.51	B	51.7		5	50	102	80 - 120%
7440-70-2	CALCIUM	53000		90900		1000	40000	96	80 - 120%
7440-47-3	CHROMIUM	30		239		10	200	105	80 - 120%
7440-48-4	COBALT	0.59	U	505		10	500	101	80 - 120%
7440-50-8	COPPER	7.2	U	261		8	250	105	80 - 120%
7439-89-6	IRON	240		1300		50	1000	106	80 - 120%
7439-95-4	MAGNESIUM	14000		53300		750	40000	97	80 - 120%
7439-96-5	MANGANESE	5.7		530		5	500	105	80 - 120%
7440-02-0	NICKEL	25		535		20	500	102	80 - 120%
7440-09-7	POTASSIUM	7000		46200		1000	40000	98	80 - 120%
7440-22-4	SILVER	1	U	104		10	100	104	80 - 120%
7440-23-5	SODIUM	18000		58200		500	40000	100	80 - 120%
7440-62-2	VANADIUM	24		532		10	500	102	80 - 120%
7440-66-6	ZINC	5.5	U	544		20	500	109	80 - 120%

Data Package ID: IP1503034-1

**ICP Metals****Method SW6010B****Matrix Spike And Matrix Spike Duplicate****Lab Name:** ALS Environmental -- FC**Work Order Number:** 1503034**Client Name:** CH2M HILL Plateau Remediation Company**ClientProject ID:** RCRA, MARCH 2015 W15-003

<b>Field ID:</b> B30CH6
<b>LabID:</b> 1503034-1MSD

**Sample Matrix:** WATER**% Moisture:** N/A**Date Collected:** 03-Mar-15**Date Extracted:** 06-Mar-15**Date Analyzed:** 09-Mar-15**Prep Method:** SW3005 Rev A**Prep Batch:** IP150306-2**QCBatchID:** IP150306-2-1**Run ID:** IP150309-2A3**Cleanup:** NONE**Basis:** As Received**Sample Aliquot:** 50 ml**Final Volume:** 50 ml**Result Units:** UG/L**File Name:**

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-36-0	ANTIMONY	518		500	104	20	20	1
7440-38-2	ARSENIC	1050		1000	104	10	20	0
7440-39-3	BARIUM	1050		1000	101	20	20	1
7440-43-9	CADMIUM	51.9		50	103	5	20	0
7440-70-2	CALCIUM	92300		40000	99	1000	20	1
7440-47-3	CHROMIUM	238		200	104	10	20	0
7440-48-4	COBALT	501		500	100	10	20	1
7440-50-8	COPPER	260		250	104	8	20	1
7439-89-6	IRON	1350		1000	112	50	20	4
7439-95-4	MAGNESIUM	53900		40000	99	750	20	1
7439-96-5	MANGANESE	523		500	104	5	20	1
7440-02-0	NICKEL	529		500	101	20	20	1
7440-09-7	POTASSIUM	46300		40000	98	1000	20	0
7440-22-4	SILVER	105		100	105	10	20	0
7440-23-5	SODIUM	57800		40000	99	500	20	1
7440-62-2	VANADIUM	535		500	102	10	20	1
7440-66-6	ZINC	538		500	108	20	20	1

**Data Package ID:** IP1503034-1

# ICPMS Metals

Method SW6020A

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1503034

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: RCRA, MARCH 2015 W15-003

Lab ID: FP150306-2MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06-Mar-15

Date Analyzed: 09-Mar-15

Prep Batch: IP150306-2

QCBatchID: IP150306-2-2

Run ID: IM150309-11A2

Cleanup: NONE

Basis: N/A

File Name: 070SMPL\_

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7439-92-1	LEAD	10	0.25	0.5	0.25	U	

Data Package ID: IM1503034-1

# ICPMS Metals

## Method SW6020A

### Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1503034

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: RCRA, MARCH 2015 W15-003

Lab ID: FM150306-2LCS

Sample Matrix: WATER

Prep Batch: IP150306-2

Sample Aliquot: 50 ml

% Moisture: N/A

QCBatchID: IP150306-2-2

Final Volume: 50 ml

Date Collected: N/A

Run ID: IM150309-11A2

Result Units: UG/L

Date Extracted: 03/06/2015

Cleanup: NONE

Clean DF: 1

Date Analyzed: 03/09/2015

Basis: N/A

Prep Method: SW3005A

File Name: 071SMPL\_

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7439-92-1	LEAD	50	50.1	0.5		100	80 - 120%

Data Package ID: *IM1503034-1*

**ICPMS Metals**

Method SW6020A

**Matrix Spike And Matrix Spike Duplicate**

Lab Name: ALS Environmental -- FC

Work Order Number: 1503034

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: RCRA, MARCH 2015 W15-003

Field ID: B30CH6	Sample Matrix: WATER	Prep Batch: IP150306-2	Sample Aliquot: 50 ml
LabID: 1503034-1MS	% Moisture: N/A	QCBatchID: IP150306-2-2	Final Volume: 50 ml
	Date Collected: 03-Mar-15	Run ID: IM150309-11A2	Result Units: UG/L
	Date Extracted: 06-Mar-15	Cleanup: NONE	File Name: 075SMPL_
	Date Analyzed: 09-Mar-15	Basis: As Received	
	Prep Method: SW3005 Rev A		

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7439-92-1	LEAD	0.33	B	51.3		0.5	50	102	75 - 125%

Field ID: B30CH6	Sample Matrix: WATER	Prep Batch: IP150306-2	Sample Aliquot: 50 ml
LabID: 1503034-1MSD	% Moisture: N/A	QCBatchID: IP150306-2-2	Final Volume: 50 ml
	Date Collected: 03-Mar-15	Run ID: IM150309-11A2	Result Units: UG/L
	Date Extracted: 06-Mar-15	Cleanup: NONE	File Name: 076SMPL_
	Date Analyzed: 09-Mar-15	Basis: As Received	
	Prep Method: SW3005 Rev A		

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7439-92-1	LEAD	51.5		50	102	0.5	20	0

Data Package ID: *IM1503034-1*