



April 21, 2015

ALS1504125

Ft. Collins, Colorado

LIMS Version: 6.759

Page 1 of 1

Tuesday, April 21, 2015

Bob Evans
CH2M HILL Plateau Remediation Company
2420 Stevens Center
Richland, WA 99352

Re: ALS Workorder: 1504125
Project Name: 200W Pump & Treat - Extraction Well Water Sampling
Project Number: F13-002

Dear Mr. Evans:

Three water samples were received from CH2M HILL Plateau Remediation Company, on 4/7/2015. 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

OrderNum: 1504125

Client Name: CH2M HILL Plateau Remediation Company

Client Project Name: 200W Pump & Treat - Extraction Well Water Sampling

Client Project Number: F13-002

Client PO Number: BOA 54854

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B310Y8	1504125-1		WATER	06-Apr-15	10:31
B31108	1504125-2		WATER	06-Apr-15	12:03
B31103	1504125-3		WATER	06-Apr-15	10:15

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F13-002-964	PAGE 1 OF 1
COLLECTOR D.L. Floyd/CHPRC	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 289-T, 299-W14-74, Valve V05-YE04	PROJECT DESIGNATION 200W Pump & Treat - Extraction Well Water Sampling	FIELD LOGBOOK NO. FINE-N-481-5/29	SAF NO. F13-002	AIR QUALITY	
ICE CHEST NO. GWS-103	ACTUAL SAMPLE DEPTH N/A	OFFSITE PROPERTY NO. 5545	COA 303111	METHOD OF SHIPMENT FEDERAL EXPRESS	ORIGINAL
SHIPPED TO ALS Environmental Ft. Collins	BILL OF LADING/AIR BILL NO. 773302614796				
MATRIX* A=Air DL=Drum L=Liquid DS=Drum Solids L=Liquid O=Oil S=Soil SF=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	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.	PRESERVATION HNO3 to pH <2	HOLDING TIME 6 Months	TYPE OF CONTAINER G/P	NO. OF CONTAINER(S) 1
SPECIAL HANDLING AND/OR STORAGE N/A	VOLUME 500mL	SEE ITEM (1) IN SPECIAL INSTRUCTIONS			
SAMPLE NO. B310Y8	MATRIX* WATER	SAMPLE DATE APR 06 2015	SAMPLE TIME 1031		

①

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM D.L. Floyd/CHPRC	DATE/TIME APR 06 2015 1100	RECEIVED BY/STORED IN L.D. Wall	DATE/TIME APR 06 2015 1100	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRVL-15-057	
RELINQUISHED BY/REMOVED FROM D.L. Wall	DATE/TIME APR 06 2015 1400	RECEIVED BY/STORED IN FEDEX	DATE/TIME APR 06 2015 1400	(1) 6020_METALS_ICPMS: COMMON {Aluminum, Chromium, Cobalt, Copper, Molybdenum, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Manganese, Nickel, Uranium, Zinc}; 6010_METALS_ICP: COMMON {Calcium, Iron, Magnesium, Potassium, Sodium}; 6010_METALS_ICP: COMMON (Add-on) {Boron};	
RELINQUISHED BY/REMOVED FROM FED EX	DATE/TIME APR 06 2015 1400	RECEIVED BY/STORED IN Crimble C Jumble	DATE/TIME 4-7-15 0935	TRVL-15-057	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		PROJECT COORDINATOR EVANS, RT		PRICE CODE 7C		PAGE 1 OF 1	
COLLECTOR D.L. Floyd/CHPRC		TELEPHONE NO. 373-7924		SAF NO. F13-002		AIR QUALITY <input type="checkbox"/>	
SAMPLING LOCATION 289-T, 299-W6-15, Valve V18-YE14		PROJECT DESIGNATION 200W Pump & Treat - Extraction Well Water Sampling		COA 303111		METHOD OF SHIPMENT FEDERAL EXPRESS	
ICE CHEST NO. GWS 103		FIELD LOGBOOK NO. 491-9/125		ACTUAL SAMPLE DEPTH N/A		BILL OF LADING/AIR BILL NO. 773302614796	
SHIPPED TO ALS Environmental Ft. Collins		OFFSITE PROPERTY NO. 5545		HN03 to pH <2		ORIGINAL	
MATRIX* A=Air DL=Drum L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other		PRESERVATION		HOLDING TIME 6 Months		1504125	
POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.		TYPE OF CONTAINER G/P		NO. OF CONTAINER(S) 1		4/15	
SPECIAL HANDLING AND/OR STORAGE N/A		VOLUME 500ml		SEE ITEM (1) IN SPECIAL INSTRUCTIONS			
SAMPLE NO. B31108		MATRIX* WATER		SAMPLE DATE APR 06 2015		SAMPLE TIME 1203	

②
4/15
ms

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM D.L. Floyd/CHPRC	DATE/TIME APR 06 2015 1320	RECEIVED BY/STORED IN LD. Wall	DATE/TIME APR 06 2015 1320	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRVL-15-057	
RELINQUISHED BY/REMOVED FROM LD. Wall	DATE/TIME APR 06 2015 1400	RECEIVED BY/STORED IN CHPRC	DATE/TIME 4-7-15 0935	(1) 6020_METALS_ICPMS: COMMON {Aluminum, Chromium, Cobalt, Copper, Molybdenum, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Manganese, Nickel, Uranium, Zinc}; 6010_METALS_ICP: COMMON {Calcium, Iron, Magnesium, Potassium, Sodium}; 6010_METALS_ICP: COMMON (Add-on) {Boron};	
RELINQUISHED BY/REMOVED FROM FED EX	DATE/TIME	RECEIVED BY/STORED IN Crumble	DATE/TIME	TRVL-15-057	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

CH2M Hill Plateau Remediation Company

COLLECTOR: D.L. Floyd/CHPRC

SAMPLING LOCATION: 289-T, 299-W11-96, Valve V05-YE08

ICE CHEST NO.: 605-103

SHIPPED TO: ALS Environmental Ft. Collins

COMPANY CONTACT: EVANS, RT

TELEPHONE NO.: 373-7924

PROJECT COORDINATOR: EVANS, RT

SAF NO.: F13-002

PRICE CODE: 7C

AIR QUALITY:

METHOD OF SHIPMENT: FEDERAL EXPRESS

FIELD LOGBOOK NO.: HNF-NL 581-9/28

ACTUAL SAMPLE DEPTH: N/A

COA: 303111

BILL OF LADING/AIR BILL NO.: 773302614796

OFFSITE PROPERTY NO.: 5545

DATE: APR 06 2015

PAGE 1 OF 1

DATA TURNAROUND: 15 Days / 15 Days

ORIGINAL

SAFETY HAZARD / REMARKS	PRESERVATION	HOLDING TIME	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS
<p>POSSIBLE SAMPLE HAZARDS / REMARKS</p> <p>*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.</p>	HNO3 to pH <2	6 Months	G/P	1	500ml	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B31103	WATER	APR 06 2015	1015

CHAIN OF POSSESSION

RELINQUISHED BY / REMOVED FROM: D.L. Floyd/CHPRC

DATE/TIME: APR 06 2015 1100

RECEIVED BY / STORED IN: LD. WALL (D. WALL)

DATE/TIME: APR 06 2015 1100

RELINQUISHED BY / REMOVED FROM: CHPRC

DATE/TIME: APR 06 2015 1400

RECEIVED BY / STORED IN: FEDEX

DATE/TIME: APR 06 2015 1400

RELINQUISHED BY / REMOVED FROM: FED EX

DATE/TIME: APR 06 2015 1400

RECEIVED BY / STORED IN: TRIMBLE

DATE/TIME: APR 06 2015 1400

SPECIAL INSTRUCTIONS: ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRVL-15-057 (1) 6020_METALS_ICPMS: COMMON {Aluminum, Chromium, Cobalt, Copper, Molybdenum, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Manganese, Nickel, Uranium, Zinc}; 6010_METALS_ICP: COMMON {Calcium, Iron, Magnesium, Potassium, Sodium}; 6010_METALS_ICP: COMMON (Add-on) {Boron};

TRVL-15-057

LABORATORY SECTION: 605

RECEIVED BY: [Signature]

DATE/TIME: [Blank]

DISPOSAL METHOD: [Blank]

DISPOSED BY: [Blank]

DATE/TIME: [Blank]

PRINTED ON: 3/23/2015

A-6003-618 (REV 2)

April 21, 2015

ALS1504125



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC

Workorder No: 1504125

Project Manager: JE

Initials: CDT Date: 4-7-15

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 Amount of sediment: ___ dusting ___ moderate ___ heavy	N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: <input checked="" type="radio"/> #2 #4 RAD ONLY		<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>4.2</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.

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

Project Manager Signature / Date: Gway 4/7/15

April 21, 2015

ALS1504125

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

Origin ID: PSCA



Ship Date: 06APR15
ActWgt: 47.0 LB
CAD: 107066051/NET3610

1504125 = 2/1

Delivery Address Bar Code



SHIP TO: (970) 490-1511

BILL THIRD PARTY

Julie Ellingson
ALS Global
225 Commerce Drive

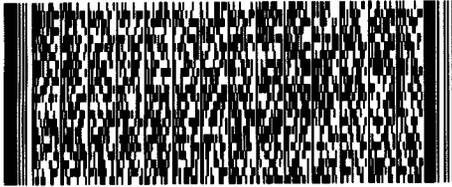
Ref # ptr# 5545
Invoice #
PO #
Dept #

4.2°

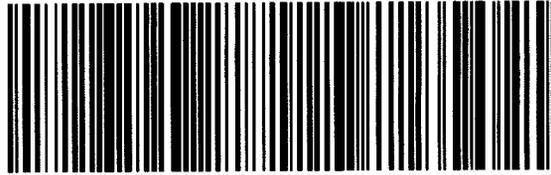
FORT COLLINS, CO 80524

TUE - 07 APR 10:30A
PRIORITY OVERNIGHT
DSR
80524
CO-US
DEN

TRK# 7733 0261 4796
0201



XH FTCA



537.028F05JEE4B

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Metals

Case Narrative

CH2M HILL Plateau Remediation Company

200W Pump & Treat – Extraction Well Water Sampling – F13-002

Work Order Number: 1504125

1. This report consists of 3 water samples.
2. The samples were received cool and intact by ALS on 04/07/15.
3. The samples had a pH less than 2 upon receipt.
4. The samples were prepared and analyzed based on SW-846, 3rd 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. Boron, magnesium, and selenium have results above the MDL. 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 1504125-1 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

4/21/15
 Date



 Aprilia Ellze
 Inorganics Final Data Reviewer

4/21/15
 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.

April 21, 2015

ALS1504125

Total Recoverable ICP Metals

Method SW6010B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1504125

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Extraction Well Water Sampling F13-002

Field ID: B310Y8	Sample Matrix: WATER	Prep Batch: IP150409-3	Analyst: Steve Workman
Lab ID: 1504125-1	% Moisture: N/A	QCBatchID: IP150409-3-6	Sample Aliquot: 50 ml
	Date Collected: 06-Apr-15	Run ID: IT150410-1A4	Final Volume: 50 ml
	Date Extracted: 09-Apr-15	Cleanup: NONE	Result Units: UG/L
Analysis ReqCode: B	Date Analyzed: 10-Apr-15	Basis: As Received	Clean DF: 1
	Prep Method: SW3005 Rev A	File Name: 150410A.	

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	8.2	30	6.8	B	
7440-70-2	CALCIUM	1	72000	1000	18		
7439-89-6	IRON	1	16	50	16	U	
7439-95-4	MAGNESIUM	1	25000	750	22		
7440-09-7	POTASSIUM	1	5500	1000	190		
7440-23-5	SODIUM	1	14000	500	49		

Data Package ID: IT1504125-1

April 21, 2015

ALS1504125

Total Recoverable ICP Metals

Method SW6010B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1504125

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Extraction Well Water Sampling F13-002

Field ID:	B31108
Lab ID:	1504125-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 06-Apr-15

Date Extracted: 09-Apr-15

Date Analyzed: 10-Apr-15

Prep Method: SW3005 Rev A

Prep Batch: IP150409-3

QCBatchID: IP150409-3-6

Run ID: IT150410-1A4

Cleanup: NONE

Basis: As Received

File Name: 150410A.

Analyst: Steve Workman

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: B

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	9.5	30	6.8	B	
7440-70-2	CALCIUM	1	110000	1000	18		
7439-89-6	IRON	1	37	50	16	B	
7439-95-4	MAGNESIUM	1	39000	750	22		
7440-09-7	POTASSIUM	1	7000	1000	190		
7440-23-5	SODIUM	1	19000	500	49		

Data Package ID: IT1504125-1

April 21, 2015

ALS1504125

Total Recoverable ICP Metals

Method SW6010B

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1504125

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Extraction Well Water Sampling F13-002

Field ID:	B31103
Lab ID:	1504125-3

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 06-Apr-15

Date Extracted: 09-Apr-15

Date Analyzed: 10-Apr-15

Prep Method: SW3005 Rev A

Prep Batch: IP150409-3

QCBatchID: IP150409-3-6

Run ID: IT150410-1A4

Cleanup: NONE

Basis: As Received

File Name: 150410A.

Analyst: Steve Workman

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: B

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7440-42-8	BORON	1	6.8	30	6.8	U	
7440-70-2	CALCIUM	1	95000	1000	18		
7439-89-6	IRON	1	16	50	16	U	
7439-95-4	MAGNESIUM	1	33000	750	22		
7440-09-7	POTASSIUM	1	6500	1000	190		
7440-23-5	SODIUM	1	17000	500	49		

Data Package ID: IT1504125-1

April 21, 2015

ALS1504125

Total Recoverable ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1504125

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Extraction Well Water Sampling F13-002

Field ID:	B310Y8
Lab ID:	1504125-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 06-Apr-15

Date Extracted: 09-Apr-15

Date Analyzed: 17-Apr-15

Prep Method: SW3005 Rev A

Prep Batch: IP150409-3

QCBatchID: IP150409-3-2

Run ID: IM150417-10A6

Cleanup: NONE

Basis: As Received

File Name: 038SMPL_

Analyst: Brent A. Stanfield

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: AI

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	19	50	19	U	
7440-47-3	CHROMIUM	10	21	10	0.74		
7440-48-4	COBALT	10	0.21	1	0.21	U	
7440-50-8	COPPER	10	2	8	2	U	
7439-96-5	MANGANESE	10	0.74	5	0.74	U	
7439-98-7	MOLYBDENUM	10	2.4	1	0.44		
7440-02-0	NICKEL	10	2.3	5	2.3	U	
7782-49-2	SELENIUM	10	3.5	1	0.42		
7440-61-1	URANIUM	10	1.2	0.1	0.046		
7440-66-6	ZINC	10	7.1	20	7.1	U	

Data Package ID: IM1504125-1

April 21, 2015

ALS1504125

Total Recoverable ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1504125

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Extraction Well Water Sampling F13-002

Field ID: B31108	Sample Matrix: WATER	Prep Batch: IP150409-3	Analyst: Brent A. Stanfield
Lab ID: 1504125-2	% Moisture: N/A	QCBatchID: IP150409-3-2	Sample Aliquot: 50 ml
	Date Collected: 06-Apr-15	Run ID: IM150417-10A6	Final Volume: 50 ml
	Date Extracted: 09-Apr-15	Cleanup: NONE	Result Units: UG/L
Analysis ReqCode: AI	Date Analyzed: 17-Apr-15	Basis: As Received	Clean DF: 1
	Prep Method: SW3005 Rev A	File Name: 043SMPL_	

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	19	50	19	U	
7440-47-3	CHROMIUM	10	110	10	0.74		
7440-48-4	COBALT	10	0.21	1	0.21	U	
7440-50-8	COPPER	10	2	8	2	U	
7439-96-5	MANGANESE	10	0.74	5	0.74	U	
7439-98-7	MOLYBDENUM	10	1.6	1	0.44		
7440-02-0	NICKEL	10	2.3	5	2.3	U	
7782-49-2	SELENIUM	10	5.7	1	0.42		
7440-61-1	URANIUM	10	1.6	0.1	0.046		
7440-66-6	ZINC	10	7.1	20	7.1	U	

Data Package ID: IM1504125-1

April 21, 2015

ALS1504125

Total Recoverable ICPMS Metals

Method SW6020A

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1504125

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Extraction Well Water Sampling F13-002

Field ID:	B31103
Lab ID:	1504125-3

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 06-Apr-15

Date Extracted: 09-Apr-15

Date Analyzed: 17-Apr-15

Prep Method: SW3005 Rev A

Prep Batch: IP150409-3

QCBatchID: IP150409-3-2

Run ID: IM150417-10A6

Cleanup: NONE

Basis: As Received

File Name: 044SMPL_

Analyst: Brent A. Stanfield

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: AI

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
7429-90-5	ALUMINUM	10	19	50	19	U	
7440-47-3	CHROMIUM	10	60	10	0.74		
7440-48-4	COBALT	10	0.21	1	0.21	U	
7440-50-8	COPPER	10	2	8	2	U	
7439-96-5	MANGANESE	10	0.74	5	0.74	U	
7439-98-7	MOLYBDENUM	10	1.7	1	0.44		
7440-02-0	NICKEL	10	2.3	5	2.3	U	
7782-49-2	SELENIUM	10	2.1	1	0.42		
7440-61-1	URANIUM	10	1.5	0.1	0.046		
7440-66-6	ZINC	10	7.1	20	7.1	U	

Data Package ID: IM1504125-1

April 21, 2015

ALS1504125

ICP Metals

Method SW6010B

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1504125

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Extraction Well Water Sampling F13-002

Lab ID: FP150409-3MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 09-Apr-15

Date Analyzed: 10-Apr-15

Prep Batch: IP150409-3

QCBatchID: IP150409-3-6

Run ID: IT150410-1A4

Cleanup: NONE

Basis: N/A

File Name: 150410A.

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
7440-42-8	BORON	1	-8.5	30	6.8	B	
7440-70-2	CALCIUM	1	18	1000	18	U	
7439-89-6	IRON	1	16	50	16	U	
7439-95-4	MAGNESIUM	1	92	750	22	B	
7440-09-7	POTASSIUM	1	190	1000	190	U	
7440-23-5	SODIUM	1	49	500	49	U	

Data Package ID: IT1504125-1

April 21, 2015

ALS1504125

ICP Metals

Method SW6010B

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1504125

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Extraction Well Water Sampling F13-002

Lab ID: FP150409-3LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04/09/2015

Date Analyzed: 04/10/2015

Prep Method: SW3005A

Prep Batch: IP150409-3

QC Batch ID: IP150409-3-6

Run ID: IT150410-1A4

Cleanup: NONE

Basis: N/A

File Name: 150410A.

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
7440-42-8	BORON	1000	1070	30		107	80 - 120%
7440-70-2	CALCIUM	40000	40100	1000		100	80 - 120%
7439-89-6	IRON	1000	963	50		96	80 - 120%
7439-95-4	MAGNESIUM	40000	40600	750		101	80 - 120%
7440-09-7	POTASSIUM	40000	41400	1000		104	80 - 120%
7440-23-5	SODIUM	40000	41300	500		103	80 - 120%

Data Package ID: IT1504125-1

Date Printed: Monday, April 20, 2015

ALS Environmental -- FC

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ALS1504125

ICP Metals

Method SW6010B

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1504125

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Extraction Well Water Sampling F13-0

Field ID: B310Y8	Sample Matrix: WATER	Prep Batch: IP150409-3	Sample Aliquot: 50 ml
LabID: 1504125-1MS	% Moisture: N/A	QCBatchID: IP150409-3-6	Final Volume: 50 ml
	Date Collected: 06-Apr-15	Run ID: IT150410-1A4	Result Units: UG/L
	Date Extracted: 09-Apr-15	Cleanup: NONE	File Name: 150410A.
	Date Analyzed: 10-Apr-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
7440-42-8	BORON	8.2	B	1080		30	1000	107	80 - 120%
7440-70-2	CALCIUM	72000		114000		1000	40000	105	80 - 120%
7439-89-6	IRON	16	U	943		50	1000	94	80 - 120%
7439-95-4	MAGNESIUM	25000		65400		750	40000	101	80 - 120%
7440-09-7	POTASSIUM	5500		49700		1000	40000	111	80 - 120%
7440-23-5	SODIUM	14000		59000		500	40000	111	80 - 120%

Field ID: B310Y8	Sample Matrix: WATER	Prep Batch: IP150409-3	Sample Aliquot: 50 ml
LabID: 1504125-1MSD	% Moisture: N/A	QCBatchID: IP150409-3-6	Final Volume: 50 ml
	Date Collected: 06-Apr-15	Run ID: IT150410-1A4	Result Units: UG/L
	Date Extracted: 09-Apr-15	Cleanup: NONE	File Name: 150410A.
	Date Analyzed: 10-Apr-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
7440-42-8	BORON	1100		1000	109	30	20	1
7440-70-2	CALCIUM	115000		40000	107	1000	20	1
7439-89-6	IRON	943		1000	94	50	20	0
7439-95-4	MAGNESIUM	66400		40000	104	750	20	2
7440-09-7	POTASSIUM	50200		40000	112	1000	20	1
7440-23-5	SODIUM	59900		40000	114	500	20	2

Data Package ID: IT1504125-1

April 21, 2015

ALS1504125
ICPMS Metals
Method SW6020A
Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1504125

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Extraction Well Water Sampling F13-002

Lab ID: FP150409-3MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 09-Apr-15

Date Analyzed: 17-Apr-15

Prep Batch: IP150409-3

QCBatchID: IP150409-3-2

Run ID: IM150417-10A6

Cleanup: NONE

Basis: N/A

File Name: 051SMPL_

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
7429-90-5	ALUMINUM	10	19	50	19	U	
7440-47-3	CHROMIUM	10	0.74	10	0.74	U	
7440-48-4	COBALT	10	0.21	1	0.21	U	
7440-50-8	COPPER	10	2	8	2	U	
7439-96-5	MANGANESE	10	0.74	5	0.74	U	
7439-98-7	MOLYBDENUM	10	0.44	1	0.44	U	
7440-02-0	NICKEL	10	2.3	5	2.3	U	
7782-49-2	SELENIUM	10	-0.57	1	0.42	B	
7440-61-1	URANIUM	10	0.046	0.1	0.046	U	
7440-66-6	ZINC	10	7.1	20	7.1	U	

Data Package ID: IM1504125-1

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ALS1504125
ICPMS Metals
Method SW6020A
Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1504125

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Extraction Well Water Sampling F13-002

Lab ID: FM150409-3LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04/09/2015

Date Analyzed: 04/17/2015

Prep Method: SW3005A

Prep Batch: IP150409-3

QCBatchID: IP150409-3-2

Run ID: IM150417-10A6

Cleanup: NONE

Basis: N/A

File Name: 037SMPL_

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
7429-90-5	ALUMINUM	5000	4780	50		96	80 - 120%
7440-47-3	CHROMIUM	500	498	10		100	80 - 120%
7440-48-4	COBALT	100	103	1		103	80 - 120%
7440-50-8	COPPER	1000	1070	8		107	80 - 120%
7439-96-5	MANGANESE	100	102	5		102	80 - 120%
7439-98-7	MOLYBDENUM	100	103	1		103	80 - 120%
7440-02-0	NICKEL	500	521	5		104	80 - 120%
7782-49-2	SELENIUM	100	108	1		108	80 - 120%
7440-61-1	URANIUM	10	10.2	0.1		102	80 - 120%
7440-66-6	ZINC	2000	2070	20		103	80 - 120%

Data Package ID: IM1504125-1

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ALS1504125

ICPMS Metals

Method SW6020A

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1504125

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Extraction Well Water Sampling F13-0

Field ID: B310Y8

LabID: 1504125-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 06-Apr-15

Date Extracted: 09-Apr-15

Date Analyzed: 17-Apr-15

Prep Method: SW3005 Rev A

Prep Batch: IP150409-3

QCBatchID: IP150409-3-2

Run ID: IM150417-10A6

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 ml

Final Volume: 50 ml

Result Units: UG/L

File Name: 041SMPL_

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7429-90-5	ALUMINUM	19	U	5000		50	5000	100	75 - 125%
7440-47-3	CHROMIUM	21		513		10	500	98	75 - 125%
7440-48-4	COBALT	0.21	U	103		1	100	103	75 - 125%
7440-50-8	COPPER	2	U	1040		8	1000	104	75 - 125%
7439-96-5	MANGANESE	0.74	U	104		5	100	104	75 - 125%
7439-98-7	MOLYBDENUM	2.4		105		1	100	102	75 - 125%
7440-02-0	NICKEL	2.3	U	512		5	500	102	75 - 125%
7782-49-2	SELENIUM	3.5		104		1	100	100	75 - 125%
7440-61-1	URANIUM	1.2		11.8		0.1	10	105	75 - 125%
7440-66-6	ZINC	7.1	U	2050		20	2000	103	75 - 125%

Data Package ID: IM1504125-1

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ALS1504125

ICPMS Metals

Method SW6020A

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1504125

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 200W Pump & Treat - Extraction Well Water Sampling F13-0

Field ID: B310Y8
LabID: 1504125-1MSD

Sample Matrix: WATER
% Moisture: N/A

Date Collected: 06-Apr-15
Date Extracted: 09-Apr-15
Date Analyzed: 17-Apr-15
Prep Method: SW3005 Rev A

Prep Batch: IP150409-3
QCBatchID: IP150409-3-2
Run ID: IM150417-10A6
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
File Name: 042SMPL_

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7429-90-5	ALUMNUM	4820		5000	96	50	20	4
7440-47-3	CHROMIUM	518		500	99	10	20	1
7440-48-4	COBALT	102		100	102	1	20	1
7440-50-8	COPPER	1030		1000	103	8	20	1
7439-96-5	MANGANESE	99.7		100	100	5	20	4
7439-98-7	MOLYBDENUM	104		100	102	1	20	1
7440-02-0	NICKEL	511		500	102	5	20	0
7782-49-2	SELENIUM	111		100	107	1	20	7
7440-61-1	URANIUM	11.6		10	103	0.1	20	1
7440-66-6	ZINC	2020		2000	101	20	20	2

Data Package ID: *IM1504125-1*