Ft. Collins, Colorado

LIMS Version: 6.880

Friday, October 12, 2018

Karen Waters-Husted
CH2M HILL Plateau Remediation Company
825 Jadwin Avenue
Richland, WA 99352

Re: ALS Workorder: 1809267
Project Name: RCRA, SEPTEMBER 2018
Project Number: W18-009

Dear Ms. Waters-Husted:

Four water samples were received from CH2M HILL Plateau Remediation Company, on 9/14/2018. 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
Katie M. OBrien
Project Manager

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager (or designee) and the laboratory's client services representative as verified by their signatures on this report.

ADDRESS 225 Commerce Drive, Fort Collins, Colorado, USA 80524 | PHONE +1 970 490 1511 | FAX +1 970 490 1522
ALS GROUP USA, CORP. Part of the ALS Laboratory Group An ALS Limited Company

Environmental
www.alsglobal.com
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ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 1809267
Client Name: CH2M HILL Plateau Remediation Company
Client Project Name: RCRA, SEPTEMBER 2018
Client Project Number: W18-009
Client PO Number: BOA 54854

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B3K9V0	1809267-1		WATER	12-Sep-18	7:00
B3K9V7	1809267-2		WATER	12-Sep-18	7:00
B3K9V1	1809267-3		WATER	12-Sep-18	9:08
B3K9V8	1809267-4		WATER	12-Sep-18	9:08

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 1809267	C.O.C. # W18-009-025 Page 1 of 2

Collector:	Larry Rosane /CHPRC	**Contact/Requester:**	Karen Waters-Husted	**Telephone No.:**	509-376-4650
SAF No.:	W18-009	**Sampling Origin:**	Hanford Site	**Purchase Order/Charge Code:**	300071
Project Title:	RCRA, SEPTEMBER 2018	**Logbook No.:**	HNF-N-506 1012/30	**Ice Chest No.:**	CWS 1067
Shipped To (Lab):	ALS Environmental Ft. Collins	**Method of Shipment:**	Commercial Carrier	**Bill of Lading/Air Bill No.:**	773208172408
Protocol:	RCRA	**Priority:**	30 Days	**Offsite Property No.:**	9942

POSSIBLE SAMPLE HAZARDS/REMARK
** ** 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
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3K9V0	N	WS	SEP 12 2018	0700	1x500-mL G/P	6010_METALS_ICP: COMMON	6 Months	HNO3 to pH <2
B3K9V7	Y	SE	SEP 12 2018	0700	1x500-mL G/P	6010_METALS_ICP: COMMON	6 Months	HNO3 to pH <2

COC 9-14-18

Relinquished By:	Received By:
Larry Rosane /CHPRC — Print First and Last Name; Larry Rosane — Signature; SEP 12 2018 1025 — Date/Time	Tim Callaway /CHPRC — Print First and Last Name; T. Callaway — Signature; SEP 12 2018 1025 — Date/Time
Tim Callaway /CHPRC — Print First and Last Name; T. Callaway — Signature; SEP 12 2018 1145 — Date/Time	SSU-1 — Print First and Last Name; Signature; SEP 12 2018 1145 — Date/Time
SSU-1 — Print First and Last Name; Signature; SEP 13 2018 0700 — Date/Time	Janelle Zunker CHPRC — Print First and Last Name; Signature; SEP 13 2018 0700 — Date/Time
Janelle Zunker CHPRC — Print First and Last Name; Signature; SEP 13 2018 1400 — Date/Time	Print First and Last Name; FEDEX Signature; Date/Time

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquids
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

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REV 0

1809267

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST (continued)

C.O.C. No. W18-009-025

Page 2 of 2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
FED EX				C Trimble	C Trimble	9-14-18	1040
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time

A-6003-962 (03/05)

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10/12/18

REV 0

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 1809267	C.O.C. # W18-009-026 Page 1 of 3 @ 9/12/18

Collector:	Larry Rosane /CHPRC	**Contact/Requester:**	Karen Waters-Husted	**Telephone No.:**	509-376-4650
SAF No.:	W18-009	**Sampling Origin:**	Hanford Site	**Purchase Order/Charge Code:**	300071
Project Title:	RCRA, SEPTEMBER 2018	**Logbook No.:**	HNF-N-506 101/30	**Ice Chest No.:**	GWS 1667
Shipped To (Lab):	ALS Environmental Ft. Collins	**Method of Shipment:**	Commercial Carrier	**Bill of Lading/Air Bill No.:**	773208172908
Protocol:	RCRA	**Priority:**	30 Days	**Offsite Property No.:**	9942

POSSIBLE SAMPLE HAZARDS/REMARK
** ** 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
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
3 B3K9V1	N	W	SEP 12 2018	0908	1x500-mL G/P	6010_METALS_ICP: COMMON	6 Months	HNO3 to pH <2
4 B3K9V8	Y	W	SEP 12 2018	0908	1x500-mL G/P	6010_METALS_ICP: COMMON	6 Months	HNO3 to pH <2

CW 9-14-18

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ALS1809267 10/12/18

Relinquished By:	Received By:
Larry Rosane /CHPRC — Print First and Last Name; Larry Rosane — Signature; SEP 12 2018 — Date/Time	Tim Callaway /CHPRC — Print First and Last Name; T Callaway — Signature; SEP 12 2018 1025 — Date/Time
Tim Callaway /CHPRC — Print First and Last Name; T Callaway — Signature; SEP 12 2018 1145 — Date/Time	SSU-1 — Print First and Last Name; Signature; SEP 12 2018 1145 — Date/Time
SSU-1 — Print First and Last Name; Signature; SEP 13 2018 0700 — Date/Time	Janelle Zunker CHPRC — Print First and Last Name; Signature; SEP 13 2018 0700 — Date/Time
Janelle Zunker CHPRC — Print First and Last Name; Signature; SEP 13 2018 1400 — Date/Time	FEDEX — Print First and Last Name; Signature; Date/Time

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquids
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

REV 0

1809267

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST (continued)

C.O.C. No. W18-009-026

Page 2 of 2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	FED EX				CTrimble	C Trimble	9-14-18 1040
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time

A-6003-962 (03/05)

ALS1809267
10/12/18

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ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC Workorder No: 1809267
Project Manager: KO Initials: CDT Date: 9-14-18

1.	Are airbills / shipping documents present and/or removable?	DROP OFF	YES	NO
2.	Are custody seals on **shipping** containers intact?	NONE	YES	NO
3.	Are custody seals on **sample** containers intact?	NONE	YES	NO
4.	Is there a COC (chain-of-custody) present?		YES	NO
5.	Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		YES	NO
6.	Are short-hold samples present?		YES	NO
7.	Are all samples within holding times for the requested analyses?		YES	NO
8.	Were all sample containers received intact? (not broken or leaking)		YES	NO
9.	Is there sufficient sample for the requested analyses?		YES	NO
10.	Are all samples in the proper containers for the requested analyses?		YES	NO
11.	Are all aqueous samples preserved correctly, if required? (excluding volatiles)	N/A	YES	NO
12.	Are all aqueous non-preserved samples pH 4-9?	N/A	YES	NO
13.	Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) free of bubbles > 6 mm (1/4 inch) diameter? (i.e. size of green pea)	N/A	YES	NO
14.	Were the samples shipped on ice?		YES	NO
15.	Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #1 #3 #4	RAD ONLY YES	NO

Cooler #:	1							
Temperature (°C):	Amb							
No. of custody seals on cooler:	2							
DOT Survey/ Acceptance Information — External µR/hr reading:	10							
Background µR/hr reading:	10							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES NO / NA (If no, see Form 008.)

Additional Information: **Please provide details here for any NO responses to gray-shaded boxes above, or any other issues noted:**

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

Project Manager Signature / Date: [signature] 9/17/18

Form 201r26.xls
(06/29/2018)

*IR Gun #1, VWR SN 170560549
*IR Gun #3, VWR SN 170647571
*IR Gun #4, Oakton, SN 2372220101-0002

ORIGIN ID:PSCA (509) 373-3580
JANELLE ZUNKER
CH2M
6269 LATAH ST.
RICHLAND, WA 99354
UNITED STATES US

SHIP DATE: 13SEP18
ACTWGT: 33.00 LB
CAD: 107066051/INET4040

BILL THIRD PARTY

TO JULIE ELLINGSON
ALS GLOBAL
225 COMMERCE DRIVE

10-2

FORT COLLINS CO 80524
(970) 490-1511 REF: 9945
INV:
PO: DEPT:

552J1/F78C/DCA5

FedEx Express

J182118061501uv

TRK# 0201 7732 1404 1213

Amb

FRI - 14 SEP 10:30A
PRIORITY OVERNIGHT
DSR
80524
CO-US DEN

XH FTCA

1809267

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Metals

Case Narrative

CH2M HILL Plateau Remediation Company

RCRA, SEPTEMBER 2018 -- W18-009

Work Order Number: 1809267

1. The samples were prepared and analyzed based on SW-846, 3rd Edition procedures.

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

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

3. All standards and solutions are NIST traceable and were used within their recommended shelf life.

4. The samples were prepared and analyzed within the established hold time.

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

5. 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 and are flagged as appropriate. Sodium was detected above the MDL.
   - 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 read-backs associated with Method 6010B were within acceptance criteria.

6. Matrix specific quality control procedures.

   Sample 1809203-1 was designated as the quality control sample for this analysis. Results for the shared quality control samples from the batch are included at the client's request.

   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 this batch. All acceptance criteria for accuracy were met.
   - A matrix spike duplicate was digested and analyzed with this batch. All acceptance criteria for precision were met.
   - A serial dilution was analyzed with this ICP batch. All acceptance criteria were met with the following exception:

Analyte	Sample ID
Vanadium	1809203-1L

   The native sample result is flagged for serial dilution failure.

7. Sample dilutions were not required for the requested analysis.

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.

Megan Johnstone — 10/5/18
Megan Johnstone — Date
Inorganics Primary Data Reviewer

Inorganics Final Data Reviewer — 10/12/18
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 <=20X 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 SW6010D

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1809267
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA, SEPTEMBER 2018 W18-009

Field ID: B3K9V0
Lab ID: 1809267-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-Sep-18
Date Extracted: 29-Sep-18
Date Analyzed: 02-Oct-18
Prep Method: SW3005 Rev A

Prep Batch: IP180929-3
QCBatchID: IP180929-3-1
Run ID: IT181002-1A5
Cleanup: NONE
Basis: As Received
File Name: 181002A.

Analyst: Steve Workman
Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
7440-36-0	ANTIMONY	1	0.75	U	20	0.75
7440-38-2	ARSENIC	1	3.9	B	10	0.46
7440-39-3	BARIUM	1	2.6	U	20	2.6
7440-43-9	CADMIUM	1	0.11	U	5	0.11
7440-70-2	CALCIUM	1	210	U	1000	210
7440-47-3	CHROMIUM	1	2.4	U	10	2.4
7440-48-4	COBALT	1	0.19	U	10	0.19
7440-50-8	COPPER	1	0.51	U	8	0.51
7439-89-6	IRON	1	30	U	50	30
7439-95-4	MAGNESIUM	1	89	U	750	89
7439-96-5	MANGANESE	1	0.49	U	5	0.49
7440-02-0	NICKEL	1	1.1	U	20	1.1
7440-09-7	POTASSIUM	1	130	U	1000	130
7440-22-4	SILVER	1	0.73	U	10	0.73
7440-23-5	SODIUM	1	100	BC	500	38
7440-62-2	VANADIUM	1	0.43	U	10	0.43
7440-66-6	ZINC	1	0.62	U	20	0.62

Data Package ID: *IT1809267-1*

Dissolved ICP Metals

Method SW6010D

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1809267
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA, SEPTEMBER 2018 W18-009

Field ID: B3K9V7
Lab ID: 1809267-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-Sep-18
Date Extracted: 29-Sep-18
Date Analyzed: 02-Oct-18
Prep Method: SW3005 Rev A

Prep Batch: IP180929-3
QCBatchID: IP180929-3-1
Run ID: IT181002-1A5
Cleanup: NONE
Basis: As Received
File Name: 181002A.

Analyst: Steve Workman
Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
7440-36-0	ANTIMONY	1	0.75	U	20	0.75
7440-38-2	ARSENIC	1	2.6	B	10	0.46
7440-39-3	BARIUM	1	2.6	U	20	2.6
7440-43-9	CADMIUM	1	0.11	U	5	0.11
7440-70-2	CALCIUM	1	210	U	1000	210
7440-47-3	CHROMIUM	1	2.4	U	10	2.4
7440-48-4	COBALT	1	0.19	U	10	0.19
7440-50-8	COPPER	1	0.51	U	8	0.51
7439-89-6	IRON	1	30	U	50	30
7439-95-4	MAGNESIUM	1	89	U	750	89
7439-96-5	MANGANESE	1	0.49	U	5	0.49
7440-02-0	NICKEL	1	1.1	U	20	1.1
7440-09-7	POTASSIUM	1	130	U	1000	130
7440-22-4	SILVER	1	0.73	U	10	0.73
7440-23-5	SODIUM	1	99	BC	500	38
7440-62-2	VANADIUM	1	0.43	U	10	0.43
7440-66-6	ZINC	1	0.62	U	20	0.62

Data Package ID: *IT1809267-1*

Total Recoverable ICP Metals

Method SW6010D

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1809267
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA, SEPTEMBER 2018 W18-009

Field ID: B3K9V1
Lab ID: 1809267-3

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-Sep-18
Date Extracted: 29-Sep-18
Date Analyzed: 02-Oct-18
Prep Method: SW3005 Rev A

Prep Batch: IP180929-3
QCBatchID: IP180929-3-1
Run ID: IT181002-1A5
Cleanup: NONE
Basis: As Received
File Name: 181002A.

Analyst: Steve Workman
Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
7440-36-0	ANTIMONY	1	0.94	B	20	0.75
7440-38-2	ARSENIC	1	3.9	B	10	0.46
7440-39-3	BARIUM	1	23		20	2.6
7440-43-9	CADMIUM	1	0.11	U	5	0.11
7440-70-2	CALCIUM	1	25000		1000	210
7440-47-3	CHROMIUM	1	2.4	U	10	2.4
7440-48-4	COBALT	1	0.19	U	10	0.19
7440-50-8	COPPER	1	0.51	U	8	0.51
7439-89-6	IRON	1	30	U	50	30
7439-95-4	MAGNESIUM	1	8300		750	89
7439-96-5	MANGANESE	1	0.6	B	5	0.49
7440-02-0	NICKEL	1	1.1	U	20	1.1
7440-09-7	POTASSIUM	1	2800		1000	130
7440-22-4	SILVER	1	0.73	U	10	0.73
7440-23-5	SODIUM	1	15000		500	38
7440-62-2	VANADIUM	1	28		10	0.43
7440-66-6	ZINC	1	0.62	U	20	0.62

Data Package ID: *IT1809267-1*

Dissolved ICP Metals

Method SW6010D

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1809267
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA, SEPTEMBER 2018 W18-009

Field ID: B3K9V8
Lab ID: 1809267-4

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 12-Sep-18
Date Extracted: 29-Sep-18
Date Analyzed: 02-Oct-18
Prep Method: SW3005 Rev A

Prep Batch: IP180929-3
QCBatchID: IP180929-3-1
Run ID: IT181002-1A5
Cleanup: NONE
Basis: As Received
File Name: 181002A.

Analyst: Steve Workman
Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
7440-36-0	ANTIMONY	1	0.75	U	20	0.75
7440-38-2	ARSENIC	1	2.2	B	10	0.46
7440-39-3	BARIUM	1	23		20	2.6
7440-43-9	CADMIUM	1	0.11	U	5	0.11
7440-70-2	CALCIUM	1	24000		1000	210
7440-47-3	CHROMIUM	1	2.4	U	10	2.4
7440-48-4	COBALT	1	0.19	U	10	0.19
7440-50-8	COPPER	1	0.51	U	8	0.51
7439-89-6	IRON	1	30	U	50	30
7439-95-4	MAGNESIUM	1	8200		750	89
7439-96-5	MANGANESE	1	0.49	U	5	0.49
7440-02-0	NICKEL	1	1.1	U	20	1.1
7440-09-7	POTASSIUM	1	2800		1000	130
7440-22-4	SILVER	1	0.73	U	10	0.73
7440-23-5	SODIUM	1	16000		500	38
7440-62-2	VANADIUM	1	27		10	0.43
7440-66-6	ZINC	1	0.62	U	20	0.62

Data Package ID: *IT1809267-1*

ICP Metals

Method SW6010D

Method Blank

Lab Name: ALS -- Fort Collins
Work Order Number: 1809267
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA, SEPTEMBER 2018 W18-009

Lab ID: IP180929-3MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 29-Sep-18
Date Analyzed: 02-Oct-18

Prep Batch: IP180929-3
QCBatchID: IP180929-3-1
Run ID: IT181002-1A5
Cleanup: NONE
Basis: N/A
File Name: 181002A.

Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	DF	Result	Result Qualifier	Reporting Limit	MDL
7440-36-0	ANTIMONY	1	0.75	U	20	0.75
7440-38-2	ARSENIC	1	0.46	U	10	0.46
7440-39-3	BARIUM	1	2.6	U	20	2.6
7440-43-9	CADMIUM	1	0.11	U	5	0.11
7440-70-2	CALCIUM	1	210	U	1000	210
7440-47-3	CHROMIUM	1	2.4	U	10	2.4
7440-48-4	COBALT	1	0.19	U	10	0.19
7440-50-8	COPPER	1	0.51	U	8	0.51
7439-89-6	IRON	1	30	U	50	30
7439-95-4	MAGNESIUM	1	89	U	750	89
7439-96-5	MANGANESE	1	0.49	U	5	0.49
7440-02-0	NICKEL	1	1.1	U	20	1.1
7440-09-7	POTASSIUM	1	130	U	1000	130
7440-22-4	SILVER	1	0.73	U	10	0.73
7440-23-5	SODIUM	1	94	B	500	38
7440-62-2	VANADIUM	1	0.43	U	10	0.43
7440-66-6	ZINC	1	0.62	U	20	0.62

Data Package ID: *IT1809267-1*

ICP Metals

Method SW6010D

Laboratory Control Sample

Lab Name: ALS -- Fort Collins
Work Order Number: 1809267
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA, SEPTEMBER 2018 W18-009

Lab ID: IP180929-3LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 09/29/2018
Date Analyzed: 10/02/2018
Prep Method: SW3005A

Prep Batch: IP180929-3
QCBatchID: IP180929-3-1
Run ID: IT181002-1A5
Cleanup: NONE
Basis: N/A
File Name: 181002A.

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	473	20		95	80 - 120%
7440-38-2	ARSENIC	1000	878	10		88	80 - 120%
7440-39-3	BARIUM	1000	936	20		94	80 - 120%
7440-43-9	CADMIUM	50	43.6	5		87	80 - 120%
7440-70-2	CALCIUM	40000	37100	1000		93	80 - 120%
7440-47-3	CHROMIUM	200	185	10		93	80 - 120%
7440-48-4	COBALT	500	471	10		94	80 - 120%
7440-50-8	COPPER	250	240	8		96	80 - 120%
7439-89-6	IRON	1000	880	50		88	80 - 120%
7439-95-4	MAGNESIUM	40000	37800	750		94	80 - 120%
7439-96-5	MANGANESE	500	483	5		97	80 - 120%
7440-02-0	NICKEL	500	460	20		92	80 - 120%
7440-09-7	POTASSIUM	40000	37200	1000		93	80 - 120%
7440-22-4	SILVER	100	90.3	10		90	80 - 120%
7440-23-5	SODIUM	40000	36500	500		91	80 - 120%
7440-62-2	VANADIUM	500	460	10		92	80 - 120%
7440-66-6	ZINC	500	463	20		93	80 - 120%

Data Package ID: *IT1809267-1*

ICP Metals

Method SW6010D

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1809267
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA, SEPTEMBER 2018 W18-009

Field ID: SHARED QC
LabID: 1809203-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 10-Sep-18
Date Extracted: 29-Sep-18
Date Analyzed: 02-Oct-18
Prep Method: SW3005 Rev A

Prep Batch: IP180929-3
QCBatchID: IP180929-3-1
Run ID: IT181002-1A5
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
File Name: 181002A.

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-36-0	ANTIMONY	0.75	U	469		20	500	94	80 - 120%
7440-38-2	ARSENIC	5.8	B	888		10	1000	88	80 - 120%
7440-39-3	BARIUM	22		972		20	1000	95	80 - 120%
7440-43-9	CADMIUM	0.11	U	43.9		5	50	88	80 - 120%
7440-70-2	CALCIUM	24000		60900		1000	40000	93	80 - 120%
7440-47-3	CHROMIUM	3.7	B	191		10	200	93	80 - 120%
7440-48-4	COBALT	0.19	U	470		10	500	94	80 - 120%
7440-50-8	COPPER	0.51	U	244		8	250	98	80 - 120%
7439-89-6	IRON	30	U	901		50	1000	90	80 - 120%
7439-95-4	MAGNESIUM	8100		45900		750	40000	94	80 - 120%
7439-96-5	MANGANESE	1.2	B	485		5	500	97	80 - 120%
7440-02-0	NICKEL	2.8	B	458		20	500	91	80 - 120%
7440-09-7	POTASSIUM	2900		42500		1000	40000	99	80 - 120%
7440-22-4	SILVER	0.73	U	89.3		10	100	89	80 - 120%
7440-23-5	SODIUM	17000		56100		500	40000	97	80 - 120%
7440-62-2	VANADIUM	26		489		10	500	93	80 - 120%
7440-66-6	ZINC	0.62	U	461		20	500	92	80 - 120%

Data Package ID: *IT1809267-1*

ICP Metals

Method SW6010D

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1809267
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA, SEPTEMBER 2018 W18-009

Field ID: SHARED QC
LabID: 1809203-1MSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 10-Sep-18
Date Extracted: 29-Sep-18
Date Analyzed: 02-Oct-18
Prep Method: SW3005 Rev A

Prep Batch: IP180929-3
QCBatchID: IP180929-3-1
Run ID: IT181002-1A5
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
File Name: 181002A.

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-36-0	ANTIMONY	470		500	94	20	20	0
7440-38-2	ARSENIC	881		1000	88	10	20	1
7440-39-3	BARIUM	967		1000	95	20	20	1
7440-43-9	CADMIUM	43.7		50	87	5	20	1
7440-70-2	CALCIUM	61100		40000	93	1000	20	0
7440-47-3	CHROMIUM	190		200	93	10	20	0
7440-48-4	COBALT	470		500	94	10	20	0
7440-50-8	COPPER	243		250	97	8	20	1
7439-89-6	IRON	897		1000	90	50	20	0
7439-95-4	MAGNESIUM	46100		40000	95	750	20	0
7439-96-5	MANGANESE	483		500	96	5	20	0
7440-02-0	NICKEL	458		500	91	20	20	0
7440-09-7	POTASSIUM	42600		40000	99	1000	20	0
7440-22-4	SILVER	93		100	93	10	20	4
7440-23-5	SODIUM	56200		40000	97	500	20	0
7440-62-2	VANADIUM	486		500	92	10	20	1
7440-66-6	ZINC	460		500	92	20	20	0

Data Package ID: *IT1809267-1*

Prep Batch ID: IP180929-3

Start Date: 09/29/18
Start Time: 9:54
Prep Analyst: Jill M. Latelle

End Date: 09/29/18
End Time: 18:00

Concentration Method: NONE
Extract Method: SW3005A
Initial Volume Units: ml
Final Volume Units: ml

Batch Created By: jml
Date Created: 09/29/18
Time Created: 9:54
Validated By: jml
Date Validated: 09/29/18
Time Validated: 10:34

Comments:

QC Batch ID: IP180929-3-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
IP180929-3	MB	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1809203
IP180929-3	LCS	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1809203
1809203-1	MS	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1809203
1809203-1	MSD	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1809203
1809203-1	SMP	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1809203
1809203-2	SMP	XXXXXX	WATER	XXXXXX	50	50	NONE	1	1809203
1809267-1	SMP	B3K9V0	WATER	9/12/2018	50	50	NONE	1	1809267
1809267-2	SMP	B3K9V7	WATER	9/12/2018	50	50	NONE	1	1809267
1809267-3	SMP	B3K9V1	WATER	9/12/2018	50	50	NONE	1	1809267
1809267-4	SMP	B3K9V8	WATER	9/12/2018	50	50	NONE	1	1809267

QC Types

CAR	Carrier reference sample	DUP	Laboratory Duplicate
LCS	Laboratory Control Sample	LCSD	Laboratory Control Sample Duplicat
MB	Method Blank	MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate	REP	Sample replicate
RVS	Reporting Level Verification Standar	SMP	Field Sample
SYS	Sample Yield Spike		