

Saturday, June 25, 2016

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

Re: ALS Workorder: 1606303
Project Name: SURV, JUNE 2016
Project Number: S16-006

Dear Ms. Waters-Husted:

One water sample was received from CH2M HILL Plateau Remediation Company, on 6/16/2016. The sample was scheduled for the following analysis:

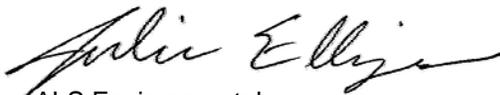
Metals

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

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1606303

Client Name: CH2M HILL Plateau Remediation Company

Client Project Name: SURV, JUNE 2016

Client Project Number: S16-006

Client PO Number: BOA 54854

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B35D61	1606303-1		WATER	14-Jun-16	10:23

CH2MHill Plateau Remediation Company
C.O.C. # **S16-006-048**
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1606303

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: **Juan Aguilar** *CHPEL*
 Telephone No. 509-376-4650
 SAF No. S16-006
 Purchase Order/Charge Code 300071
 Project Title: SURV, JUNE 2016
 Ice Chest No. **CWS-268**
 Shipped To (Lab): ALS Environmental Ft. Collins
 Bill of Lading/Air Bill No. **1776536771981**
 Protocol: SURV
 Offsite Property No. **6729**
 Priority: **15 Days**
 Hold Time
 SPECIAL INSTRUCTIONS: **PRIORITY**
 N/A
 Total Activity Exemption: Yes No

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

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B35D61	N	JUN 14 2016	1023	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2

Relinquished By: Juan Aguilar <i>CHPEL</i>	Print	Sign	Date/Time	Received By: SSU#1	Print	Sign	Date/Time	Matrix *
Relinquished By: SSU#1			JUN 14 2016 1120	Received By: Jessy Wall			JUN 14 2016 1120	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
Relinquished By: Jessy Wall			JUN 15 2016 0840	Received By: FEDEX			JUN 15 2016 0840	
Relinquished By: FEDEX			JUN 15 2016 1400	Received By: Rebecca Merola			JUN 15 2016 1015	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Date/Time	



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC

Workorder No: 1606303

Project Manager: SE

Initials: RM Date: 6/16/16

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*: #2 <input checked="" type="radio"/> #4		<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>1.8°C</u>			
No. of custody seals on cooler: <u>2</u>			
External µR/hr reading: <u>12</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: [Signature] 6/16/16

1606303

ORIGIN ID: PSCA (509) 528-9426
LESLY WALL
CZM
6267 LATAH ST.
6269 LATAH ST.
RICHLAND, WA 99354
UNITED STATES US

SHIP DATE: 15 JUN 16
ACT WGT: 10.00 LB
CAD: 10706605/INNET3730

BILL THIRD PARTY

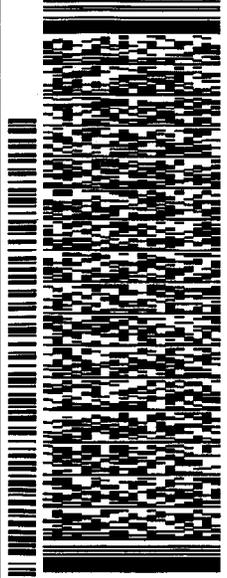
TO JULIE ELLINGSON
ALS GLOBAL
225 COMMERCE DRIVE

12
-2

FORT COLLINS CO 80524
REF: PTR#6729

(970) 490-1511
INV#

PC DEPT:



THU - 16 JUN 10:30A
PRIORITY OVERNIGHT

TRK# 7765 2677 1981

DSR
80524
CO-US DEN

XH FTCA



- 1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
- 2. Fold the printed page along the horizontal line.
- 3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number. Use of this system constitutes your agreement to 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

SURV, JUNE 2016 – S16-006

Work Order Number: 1606303

1. This report consists of 1 water sample.
2. The sample was received cool and intact by ALS on 06/16/16.
3. The sample had a pH less than 2 upon receipt.
4. The sample was prepared and analyzed based on SW-846, 3rd Edition procedures.

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

5. 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 sample was prepared and analyzed within the established hold time.

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 sample in this digestion batch.
 - The preparation (method) blank associated with this digestion batch was below the reporting limit for the requested analyte. 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 analyte.
- All initial and continuing calibration verifications were within the acceptance criteria for the requested analyte.
- The interference check samples associated with Method 6020A were analyzed.

9. Matrix specific quality control procedures.

Sample 1606351-3 was designated as the quality control sample for this analysis. Due to conflicting analyte lists, matrix QC results were included for uranium only. Results for the shared quality control samples 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 serial dilution was analyzed with this ICP batch. Acceptance criteria was not met.

<u>Analyte</u>	<u>Sample ID</u>
Uranium	1606351-3L

The native sample result is flagged for serial dilution failure.

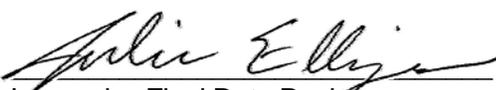
10. It is a standard practice that samples for ICP-MS are analyzed at a dilution. The 10X factor can be considered an artifact of the prep and does not indicate a secondary dilution and is therefore not flagged as a dilution.

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

6/25/16
Date



Julie Elliza
Inorganics Final Data Reviewer

6/25/16
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 $\leq 20X$ 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 URANIUM

Method SW6020A

Sample Results

Lab Name: ALS Environmental -- FC
Client Name: CH2M HILL Plateau Remediation Company
Client Project ID: SURV, JUNE 2016 S16-006
Work Order Number: 1606303 **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
B35D61	1606303-1	6/14/2016	6/20/2016	06/20/2016	N/A	10	15	0.1	0.027		50 ml

Comments:

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

Data Package ID: *IM1606303-1*

6/25/2016
ALS1606303

ICPMS Metals

Method SW6020A

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1606303

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: SURV, JUNE 2016 S16-006

Lab ID: IP160620-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 20-Jun-16

Date Analyzed: 20-Jun-16

Prep Batch: IP160620-1

QCBatchID: IP160620-1-2

Run ID: IM160620-11A3

Cleanup: NONE

Basis: N/A

File Name: 109SMPL_

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
7440-61-1	URANIUM	10	0.027	0.1	0.027	U	

Data Package ID: IM1606303-1

Date Printed: Saturday, June 25, 2016

ALS Environmental -- FC

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6/25/2016
ALS1606303

ICPMS Metals

Method SW6020A

Laboratory Control Sample

Lab Name: ALS Environmental -- FC

Work Order Number: 1606303

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: SURV, JUNE 2016 S16-006

Lab ID: IM160620-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06/20/2016

Date Analyzed: 06/20/2016

Prep Method: SW3005A

Prep Batch: IP160620-1

QCBatchID: IP160620-1-2

Run ID: IM160620-11A3

Cleanup: NONE

Basis: N/A

File Name: 110SMPL_

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
7440-61-1	URANIUM	10	10.4	0.1		104	80 - 120%

Data Package ID: IM1606303-1

Date Printed: Saturday, June 25, 2016

ALS Environmental -- FC

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6/25/2016
ALS1606303

ICPMS Metals

Method SW6020A

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1606303

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: SURV, JUNE 2016 S16-006

Field ID: SHARED QC
LabID: 1606351-3MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 17-Jun-16
Date Extracted: 20-Jun-16
Date Analyzed: 20-Jun-16
Prep Method: SW3005 Rev A

Prep Batch: IP160620-1
QCBatchID: IP160620-1-2
Run ID: IM160620-11A3
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
File Name: 133SMPL_

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-61-1	URANIUM	11		21.3		0.1	10	100	75 - 125%

Field ID: SHARED QC
LabID: 1606351-3MSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 17-Jun-16
Date Extracted: 20-Jun-16
Date Analyzed: 20-Jun-16
Prep Method: SW3005 Rev A

Prep Batch: IP160620-1
QCBatchID: IP160620-1-2
Run ID: IM160620-11A3
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
File Name: 134SMPL_

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-61-1	URANIUM	20.8		10	95	0.1	20	3

Data Package ID: IM1606303-1