



Wednesday, August 17, 2016

Dave Todak
CH2M HILL Plateau Remediation Company
2420 Stevens Center
Richland, WA 99352

Re: ALS Workorder: 1608082
Project Name: FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis-Wa
Project Number: F16-007

Dear Mr. Todak:

Two water samples were received from CH2M HILL Plateau Remediation Company, on 8/4/2016. The samples were scheduled for the following analyses:

Metals
GC/MS Volatiles

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

SAMPLE ISSUE RESOLUTION

SIR NUM SIR16-564
REV NUM 0
DATE INITIATED 8/10/2016

SAMPLE EVENT INFORMATION

SAF NUM(S) F16-007
OPERABLE UNIT(S) 200-UP-1
PROJECT(S) 200 AREA SGRP
SAMPLE EVENT TITLE(S) 200-UP-1 Remedial Action Wells
LABORATORY ALS Environmental Ft. Collins

SAMPLING INFORMATION

NUMBER OF SAMPLES 2
SAMPLE NUMBERS B34T79, B34T80
SAMPLE MATRIX WATER
COLLECTION DATE 8/3/2016 - 8/3/2016
SDG NUM ALS1608082

ISSUE BACKGROUND

CLASS Sample Management Issues
TYPE Turnaround Time and Due Date Modification
DESCRIPTION On August 9, 2016 SMR requested that the turnaround time (TAT) for ALS1608082 be updated to a 7 day prelim/7 day final TAT. SDG ALS1608082 was received on 8/4/16.

DISPOSITION

DESCRIPTION Please change the TAT from 30 days to 3/15 days. ALS may start the new TAT from August 9, 2016. Include a copy of the SIR as a reference in the reporting files.

JUSTIFICATION Final Disposition:

SUBMITTED BY: Heather Medley DATE: 08/10/2016
ACCEPTED BY: Julie Ellingson DATE: 08/12/16

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 1608082

Client Name: CH2M HILL Plateau Remediation Company

Client Project Name: FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis-

Client Project Number: F16-007

Client PO Number: BOA 54854

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B34T79	1608082-1		WATER	03-Aug-16	10:49
B34T80	1608082-2		WATER	03-Aug-16	10:49

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST **1608082** PAGE 1 OF 1

COLLECTOR *Kenneth Patterson* F16-007-201 PRICE CODE 7H DATA TURNAROUND 30 Days / 30 Days

SAMPLING LOCATION C9411, I-008 TELEPHONE NO. 376-6427 PROJECT COORDINATOR TODAY, D

ICE CHEST NO. **GWS-441** HNF-N-645 **5-260.5** SAF NO. F16-007 AIR QUALITY METHOD OF SHIPMENT FEDERAL EXPRESS **ORIGINAL**

SHIPPED TO ALS Environmental Ft. Collins OFFSITE PROPERTY NO. **6899** COA 300192 BILL OF LADING/AIR BILL NO. **47709 1233 4513**

MATRIX*	PRESERVATION	HINO3 to pH
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	6 Months G/P	<2
*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. NA		
SPECIAL HANDLING AND/OR STORAGE	NO. OF CONTAINER(S)	VOLUME
	1	500ml
		SEE ITEM (1) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	SAMPLE DATE	SAMPLE TIME
B34T79 (1)	AUG 03 2016	1049

FILTER

SPECIAL INSTRUCTIONS
(1) 6020_METALS_ICPMS: COMMON (Add-on) {Manganese, Uranium};

FILTER

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM <i>Janelle Zupke</i>	<i>SSU#1</i>	RECEIVED BY/STORED IN <i>SSU#1</i>	AUG 03 2016 1120
RELINQUISHED BY/REMOVED FROM <i>Janelle Zupke</i>	<i>SSU#1</i>	RECEIVED BY/STORED IN <i>Janelle Zupke</i>	AUG 03 2016 1200
RELINQUISHED BY/REMOVED FROM <i>Janelle Zupke</i>	<i>SSU#1</i>	RECEIVED BY/STORED IN <i>CHPRC</i>	AUG 03 2016 1400
RELINQUISHED BY/REMOVED FROM <i>FED</i>	<i>FED</i>	RECEIVED BY/STORED IN <i>CHPRC</i>	AUG 03 2016 1400
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN <i>CHPRC</i>	AUG 03 2016 1400
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN <i>CHPRC</i>	AUG 03 2016 1400
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN <i>CHPRC</i>	AUG 03 2016 1400
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN <i>CHPRC</i>	AUG 03 2016 1400
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN <i>CHPRC</i>	AUG 03 2016 1400
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN <i>CHPRC</i>	AUG 03 2016 1400
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN <i>CHPRC</i>	AUG 03 2016 1400
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD		



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC

Workorder No: 1608082

Project Manager: JR

Initials: CDJ Date: 8-4-16

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	N/A	<input checked="" type="radio"/> 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?		<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	RAD ONLY	<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u> <u>2</u>			
Temperature (°C): <u>3.6</u> <u>4.2</u>			
No. of custody seals on cooler: <u>3</u> <u>2</u>			
DOT Survey/ Acceptance Information	External µR/hr reading: <u>11</u> <u>11</u>		
	Background µR/hr reading: <u>12</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: JR 8/4/16

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

ORIGIN ID: PSCA
JANELLE ZUNKER
CH 2M
6269 LATAH ST.
RICHLAND, WA 99354
UNITED STATES US

SHIP DATE: 03AUG16
ACTWGT: 21.00 LB
CAD: 10706605 UNET3790

BILL THIRD PARTY

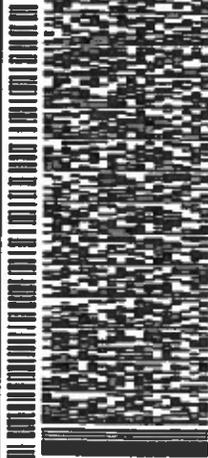
TO JULIE ELLINGSON
ALS GLOBAL
225 COMMERCE DRIVE

11-2

FORT COLLINS CO 80524
REF: 6666

54JMN370M4BB

DEPT



FedEx
Express



#1628108140

4.20

TRK# 0201 7769 1233 4513

THU - 04 AUG 10:30A

PRIORITY OVERNIGHT

DSR

80524

CO-US DEN

XH FTCA



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- 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.

1608082



Metals

Case Narrative

CH2M HILL Plateau Remediation Company

FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis - Water – F16-007

Work Order Number: 1608082

1. This report consists of 1 water sample.
2. The sample was received cool and intact by ALS on 08/04/16.
3. The sample was analyzed for dissolved metals. The sample had been filtered prior to receipt, and 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 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 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 associated with Method 6020A were analyzed.

9. Matrix specific quality control procedures.

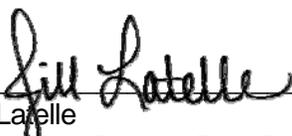
Sample 1608019-1 was designated as the quality control sample for this analysis. Results for the shared quality control samples are included at the client's request.

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. 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

8/16/16
Date



Arlic E. Ellinger
Inorganics Final Data Reviewer

8/17/16
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.

Dissolved MANGANESE

Method SW6020A

Sample Results

Lab Name: ALS -- Fort Collins
Client Name: CH2M HILL Plateau Remediation Company
Client Project ID: FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis-Water
Work Order Number: 1608082 **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
B34T79	1608082-1	8/3/2016	8/5/2016	08/08/2016	N/A	10	71	5	0.3		50 ml

Comments:

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

Data Package ID: *im1608082-1*

Dissolved URANIUM

Method SW6020A

Sample Results

Lab Name: ALS -- Fort Collins
Client Name: CH2M HILL Plateau Remediation Company
Client Project ID: FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis-Water
Work Order Number: 1608082 **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
B34T79	1608082-1	8/3/2016	8/5/2016	08/08/2016	N/A	10	4.4	0.1	0.027		50 ml

Comments:

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

Data Package ID: *im1608082-1*

8/17/2016
ALS1608082

ICPMS Metals

Method SW6020A

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1608082

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis

Lab ID: IP160805-11MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 05-Aug-16

Date Analyzed: 08-Aug-16

Prep Batch: IP160805-11

QCBatchID: IP160805-11-4

Run ID: IM160808-10A8

Cleanup: NONE

Basis: N/A

File Name: 095SMPL_

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
7439-96-5	MANGANESE	10	0.3	5	0.3	U	
7440-61-1	URANIUM	10	0.027	0.1	0.027	U	

Data Package ID: *im1608082-1*

Date Printed: Tuesday, August 16, 2016

ALS -- Fort Collins

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LIMS Version: 6.823

8/17/2016
ALS1608082

ICPMS Metals

Method SW6020A

Laboratory Control Sample

Lab Name: ALS -- Fort Collins

Work Order Number: 1608082

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis

Lab ID: IM160805-11LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 08/05/2016

Date Analyzed: 08/08/2016

Prep Method: SW3005A

Prep Batch: IP160805-11

QCBatchID: IP160805-11-4

Run ID: IM160808-10A8

Cleanup: NONE

Basis: N/A

File Name: 096SMPL_

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
7439-96-5	MANGANESE	100	98.3	5		98	80 - 120%
7440-61-1	URANIUM	10	10.2	0.1		102	80 - 120%

Data Package ID: *im1608082-1*

Date Printed: Tuesday, August 16, 2016

ALS -- Fort Collins

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LIMS Version: 6.823

ICPMS Metals

Method SW6020A

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS -- Fort Collins

Work Order Number: 1608082

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: FY2016 200-UP-1 Remedial Action Wells Sampling and Anal

Field ID: SHARED QC
LabID: 1608019-1MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jul-16
Date Extracted: 05-Aug-16
Date Analyzed: 08-Aug-16
Prep Method: SW3005 Rev A

Prep Batch: IP160805-11
QCBatchID: IP160805-11-4
Run ID: IM160808-10A8
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
File Name: 101SMPL_

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7439-96-5	MANGANESE	10		107		5	100	97	75 - 125%
7440-61-1	URANIUM	16		26.2		0.1	10	104	75 - 125%

Field ID: SHARED QC
LabID: 1608019-1MSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 29-Jul-16
Date Extracted: 05-Aug-16
Date Analyzed: 08-Aug-16
Prep Method: SW3005 Rev A

Prep Batch: IP160805-11
QCBatchID: IP160805-11-4
Run ID: IM160808-10A8
Cleanup: NONE
Basis: As Received

Sample Aliquot: 50 ml
Final Volume: 50 ml
Result Units: UG/L
File Name: 102SMPL_

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7439-96-5	MANGANESE	106		100	96	5	20	1
7440-61-1	URANIUM	25.8		10	100	0.1	20	2

Data Package ID: *im1608082-1*



GC/MS Volatiles Case Narrative

CH2M HILL Plateau Remediation Company FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis-water -- F16-007

Work Order Number: 1608082

1. This report consists of 1 water sample. The sample was received cool and intact by ALS on 08/04/16.

The sample was free of headspace prior to analysis and had a pH < 2 at the time of analysis.

2. The sample was prepared according to SW-846, 3rd Edition procedures. Specifically, the water sample was prepared using purge and trap procedures based on Method 5030C.
3. The sample was analyzed using GC/MS with an RTX-624, RTX-VMS, or equivalent capillary column according to the current revision of SOP 525 based on SW-846 Method 8260. All positive results were quantitated against the initial calibration standards using the internal standard technique. The identification of positive results was achieved by a comparison of the retention time and mass spectrum of the sample versus the daily calibration standard.
4. All initial calibration criteria were met.
5. All initial calibrations are verified by comparing a second source standard calibration verification (ICV) against the calibration curve. All criteria for initial calibration verification were met.
6. All compounds in the daily (continuing) calibration verification were within 20%D.
7. Methylene chloride, acetone and 2-butanone are common laboratory contaminants. In order to minimize the levels of these compounds detected in the gc/ms analysis, ALS has designated its volatile laboratory as a restricted access area. In addition, the laboratory has been equipped with a dedicated, air intake and exhaust system that operates under positive pressure in order to minimize cross contamination of these compounds. Due to fluctuations in ambient laboratory conditions, reported sample values for common laboratory contaminants may be due to lab contamination even if the compound in question is not detected in the associated method blank.



All method blank criteria were met.

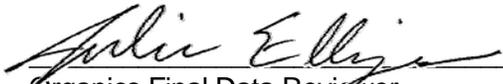
8. All laboratory control sample and laboratory control sample duplicate recoveries and RPDs were within the acceptance criteria.
9. A matrix spike and matrix spike duplicate were not performed. A laboratory control sample and laboratory control sample duplicate were performed instead.
10. The sample was analyzed within the established holding time.
11. All surrogate recoveries were within acceptance criteria.
12. All internal standard recoveries were within acceptance criteria.
13. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in the current revision of SOP 939.

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.



Emily Knodel
Organics Primary Data Reviewer

8/17/16
Date



Julie Elliza
Organics Final Data Reviewer

8/17/16
Date

ALS
Data Qualifier Flags
Organics

- U or ND:** This flag indicates that the compound was analyzed for but not detected.
- J:** This flag indicates an estimated value. This flag is used as follows : (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); (3) when the retention time data indicate the presence of a compound that meets the GC identification criteria, and the result is less than the RL but greater than the MDL; and (4) the reported value is estimated.
- B:** This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.
- E:** This flag identifies compounds whose concentration exceeds the upper level of the calibration range.
- A:** This flag indicates that a tentatively identified compound is a suspected aldol-condensation product.
- X:** This flag indicates that the analyte was diluted below an accurate quantitation level.
- *:** This flag indicates that a spike recovery is equal to or outside the control criteria used.
- +:** This flag indicates that the relative percent difference (RPD) equals or exceeds the control criteria.

8/17/2016
ALS1608082

GC/MS Volatiles

Method SW8260_25C

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1608082

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis-

Lab ID: VL160804-3MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04-Aug-16

Date Analyzed: 04-Aug-16

Prep Batch: VL160804-3

QCBatchID: VL160804-3-1

Run ID: VL160804-3A

Cleanup: NONE

Basis: N/A

File Name: C70869

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
56-23-5	CARBON TETRACHLORIDE	1	0.3	1	0.3	U	
79-01-6	TRICHLOROETHENE	1	0.3	1	0.3	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	26.4		25	106	85 - 115
1868-53-7	DIBROMOFLUOROMETHANE	23.9		25	96	84 - 118
2037-26-5	TOLUENE-D8	23.8		25	95	85 - 115

Data Package ID: VL1608082-1

Date Printed: Wednesday, August 17, 2016

ALS -- Fort Collins

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LIMS Version: 6.824

8/17/2016
ALS1608082

GC/MS Volatiles

Method SW8260_25C

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1608082

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis-

Field ID:	B34T80
Lab ID:	1608082-2

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 03-Aug-16

Date Extracted: 04-Aug-16

Date Analyzed: 04-Aug-16

Prep Method: SW5030 Rev C

Prep Batch: VL160804-3

QC Batch ID: VL160804-3-1

Run ID: VL160804-3A

Cleanup: NONE

Basis: As Received

File Name: C70889

Analyst: Joe Kostelnik

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

Analysis ReqCode: 8260_VOA_GCM

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
56-23-5	CARBON TETRACHLORIDE	1	0.3	1	0.3	U	
79-01-6	TRICHLOROETHENE	1	0.3	1	0.3	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	24.9		25	100	85 - 115
1868-53-7	DIBROMOFLUOROMETHANE	23.7		25	95	84 - 118
2037-26-5	TOLUENE-D8	23.8		25	95	85 - 115

Data Package ID: VL1608082-1

Date Printed: Wednesday, August 17, 2016

ALS -- Fort Collins

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LIMS Version: 6.824

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins

Work Order Number: 1608082

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis-

Lab ID: VL160804-3LCS	Sample Matrix: WATER % Moisture: N/A Date Collected: N/A Date Extracted: 08/04/2016 Date Analyzed: 08/04/2016 Prep Method: SW5030C	Prep Batch: VL160804-3 QCBatchID: VL160804-3-1 Run ID: VL160804-3A Cleanup: NONE Basis: N/A File Name: C70866	Sample Aliquot: 10 ml Final Volume: 10 ml Result Units: UG/L Clean DF: 1
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CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
56-23-5	CARBON TETRACHLORIDE	10	9.84	1		98	77 - 122%
79-01-6	TRICHLOROETHENE	10	10.1	1		101	83 - 117%

Lab ID: VL160804-3LCSD	Sample Matrix: WATER % Moisture: N/A Date Collected: N/A Date Extracted: 08/04/2016 Date Analyzed: 08/04/2016 Prep Method: SW5030C	Prep Batch: VL160804-3 QCBatchID: VL160804-3-1 Run ID: VL160804-3A Cleanup: NONE Basis: N/A File Name: C70867	Sample Aliquot: 10 ml Final Volume: 10 ml Result Units: UG/L Clean DF: 1
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CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
56-23-5	CARBON TETRACHLORIDE	10	9.66	1		97	20	2
79-01-6	TRICHLOROETHENE	10	9.91	1		99	20	2

Surrogate Recovery LCS/LCSD

CASNO	Target Analyte	Spike Added	LCS % Rec.	LCS Flag	LCSD % Rec.	LCSD Flag	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	25	106		105		85 - 115
1868-53-7	DIBROMOFLUOROMETHANE	25	100		102		84 - 118
2037-26-5	TOLUENE-D8	25	97		98		85 - 115

Data Package ID: VL1608082-1