



Ft. Collins, Colorado

LIMS Version: 6.780

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Thursday, August 27, 2015

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

Re: ALS Workorder: 1508034
Project Name: 100-BC-5 RI, JUNE 2015
Project Number: X15-033

Dear Ms. Waters-Husted:

One water sample was received from CH2M HILL Plateau Remediation Company, on 8/5/2015. The sample was scheduled for the following analysis:

Total Organic Carbon

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,

A handwritten signature in black ink, appearing to read 'Julie Ellingson', written over a horizontal line.

ALS Environmental
Julie Ellingson
Project Manager

ALS Environmental – Fort Collins 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 Environmental – Fort Collins	
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
Louisiana (LA)	05057
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

SAMPLE ISSUE RESOLUTION	SIR NUM	SIR16-040
	REV NUM	0
	DATE INITIATED	10/19/2015

SAMPLE EVENT INFORMATION

SAF NUM(S) X15-033
OPERABLE UNIT(S) 100-BC-5
PROJECT(S) CERC15
SAMPLE EVENT TITLE(S) CERC15
LABORATORY ALS Environmental Ft. Collins

SAMPLING INFORMATION

NUMBER OF SAMPLES 1
SAMPLE NUMBERS B31902
SAMPLE MATRIX WATER
COLLECTION DATE 7/30/2015 - 7/30/2015
SDG NUM ALS1508034

ISSUE BACKGROUND

CLASS Laboratory Issue
TYPE Chain of Custody Issue
DESCRIPTION •COC #X15-033-008 (p 4) – final relinquished by/received by line does not contain the same date/time stamp. Also, final received by line is signed by both lab and FEDEX.

DISPOSITION

DESCRIPTION DOCUMENT AND CLOSE.
JUSTIFICATION DOCUMENT AND CLOSE.

SUBMITTED BY: Jessa Szecsody DATE: 09/22/2015
ACCEPTED BY: Scot Fitzgerald DATE: 10/19/2015

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1508034

Client Name: CH2M HILL Plateau Remediation Company

Client Project Name: 100-BC-5 RI, JUNE 2015

Client Project Number: X15-033

Client PO Number: BOA 54854

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B31902	1508034-1		WATER	30-Jul-15	10:41

CH2MHill Plateau Remediation Company

10 16) 1508034

C.O.C.# X15-033-008
Page 1 of 2

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: J.C. Fulton/CHPRC
Contact/Requester: Karen Waters-Husted
Telephone No.: 509-376-4650

SAF No.: X15-033
Sampling Origin: Hanford Site
Purchase Order/Charge Code: 303271

Project Title: 100-BC-5 RI, JUNE 2015
Logbook No.: HNF-N-506-77/21
Ice Chest No.: GWS-248

Shipped To (Lab): ALS Environmental Ft. Collins
Method of Shipment: Commercial Carrier
Bill of Lading/Air Bill No.:

Protocol: CERCLA
Priority: 30 Days
Offsite Property No.:

PRIORITY

SPECIAL INSTRUCTIONS: N/A
Hold Time: 28 Days
Total Activity Exemption: Yes No

Sample No.: B31902
Filter: N
Date: 7-30-15
Time: 1041
No/Type Container: 1x250-mL aG
Sample Analysis: 9060_TOC; COMMON
Holding Time: 28 Days
Preservative: HCl or H2SO4 to pH <2/COOL <=6C

Received By	Date/Time	Received By	Date/Time	Sign	Date/Time	Matrix *
J.C. Fulton/CHPRC	JUL 30 2015 1111	C.M. Aguilar/CHPRC	JUL 30 2015 1111	[Signature]	1111	Soil
C.M. Aguilar/CHPRC	JUL 30 2015 1115	SSU #1	JUL 30 2015 1115	[Signature]	1115	Sediment
SSU-1	AUG 04 2015 0830	E.L. Kauer	AUG 04 2015 0830	[Signature]	0830	Solid
E.L. Kauer	AUG 04 2015 1400	C. Trimble/CHPRC	AUG 04 2015 1400	[Signature]	1400	Sludge
CHPRC		FEDEX				Water
FINAL SAMPLE DISPOSITION		Disposed By				Oil
						Air
						Drum Solids
						Drum Liquids
						Tissue
						Wipe
						Liquid
						Vegetation
						Other

PRINTED ON 7/28/2015

FSR ID = FSR2277

A-6004-842 (REV 2)



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC

Workorder No: 1508034

Project Manager: JE

Initials: CDT Date: 8-5-15

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>2.8</u>			
No. of custody seals on cooler: <u>1</u>			
External µR/hr reading: <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: [Signature] 8/5/15

ORIGIN ID: PSCA (509) 373-3547
 CHRIS FULTON
 CH2M
 8267 LATAH ST
 RICHLAND, WA 99354
 UNITED STATES US

SHIP DATE: 08AUG15
 ACTWGT: 10.00 LB
 CAD: 10706605 INMET.3670

1508034

BILL THIRD PARTY

TO JULIE ELLINGSON
 225 COMMERCE DRIVE
 FORT COLLINS CO 80524
 (970) 490-1511
 REF: PTH8919
 DEPT

539J1FECAG1D0




TRK# 7742 0342 6257
 0201

WED - 05 AUG 10:30A
 PRIORITY OVERNIGHT
 DSR
 80524
 CO-US DEN

XH FTCA



After printing this label:

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Organic Carbon Case Narrative

CH2M HILL Plateau Remediation Company

100-BC-5 RI, JUNE 2015 -- X15-033

Work Order Number: 1508034

1. This report consists of 1 water sample.
2. The sample was received cool and intact by ALS on 08/05/15.
3. The sample had been correctly preserved for the requested analysis.
4. The sample was prepared for analysis based on SW-846, 3rd Edition procedures.
5. The sample was analyzed following SW-846, 3rd Edition procedures for the current revision of the following SOP and method:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
TOC (Total Organic Carbon)	9060	670

6. All standards and solutions were used within their recommended shelf life.
7. The sample was prepared and analyzed within the established hold time for TOC analysis.

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

8. General quality control procedures.
 - n A preparation (method) blank, laboratory control sample (LCS), and laboratory control sample duplicate (LCSD) were prepared and analyzed with the samples in this preparation batch.
 - n The method blank associated with this batch was below the reporting limit for the requested analyte.
 - n All laboratory control sample criteria were met.



- n All initial and continuing calibration verifications were within the acceptance criteria for the requested analyte.

9. Matrix specific quality control procedures.

Sample 1508034-1 was designated as the quality control sample for this 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.

- n A matrix spike (MS) and matrix spike duplicate (MSD) were prepared and analyzed with this batch. All guidance criteria for precision and accuracy were met with the following exception:

<u>Analyte</u>	<u>Sample ID</u>
TOC	1508034-1MS

The native sample result is flagged for TOC. The laboratory control samples indicate that the procedure was in control.

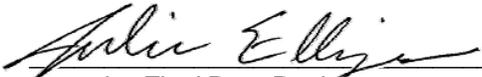
10. Sample dilutions were not required for the requested analysis.

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
Organics Primary Data Reviewer

8/19/15
Date



Julie Elliza
Organics Final Data Reviewer

8/27/15
Date



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.
 - 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.
 - 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.

Organic Carbon

Method SW9060

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1508034

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-BC-5 RI, JUNE 2015 X15-033

Lab ID: MO150812-1MB

Sample Matrix: WATER
 % Moisture: N/A
 Date Collected: N/A
 Date Extracted: 12-Aug-15
 Date Analyzed: 12-Aug-15

Prep Batch: MO150812-1
 QCBatchID: MO150812-1-1
 Run ID: MO150812-1A1
 Cleanup: NONE
 Basis: N/A
 File Name: 08121023

Sample Aliquot: 40 ml
 Final Volume: 40 ml
 Result Units: MG/L
 Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
10-35-5	TOTAL ORGANIC CARBON	1	0.3	1	0.3	U	

Data Package ID: MO1508034-1

Organic Carbon

Method SW9060

Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1508034

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-BC-5 RI, JUNE 2015 X15-033

Field ID:	B31902
Lab ID:	1508034-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 30-Jul-15

Date Extracted: 12-Aug-15

Date Analyzed: 12-Aug-15

Prep Method: NONE

Prep Batch: MO150812-1

QCBatchID: MO150812-1-1

Run ID: MO150812-1A1

Cleanup: NONE

Basis: As Received

File Name: 08121023

Analyst: Steven D. White

Sample Aliquot: 40 ml

Final Volume: 40 ml

Result Units: MG/L

Clean DF: 1

Analysis ReqCode: 9060_TOC:COM

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
10-35-5	TOTAL ORGANIC CARBON	1	0.36	1	0.3	J	N

Data Package ID: MO1508034-1

Organic Carbon

Method SW9060

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1508034

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-BC-5 RI, JUNE 2015 X15-033

Lab ID: MO150812-1LCS

Sample Matrix: WATER
 % Moisture: N/A
 Date Collected: N/A
 Date Extracted: 08/12/2015
 Date Analyzed: 08/12/2015
 Prep Method: NONE

Prep Batch: MO150812-1
 QCBatchID: MO150812-1-1
 Run ID: MO150812-1A1
 Cleanup: NONE
 Basis: N/A
 File Name: 08121023

Sample Aliquot: 40 ml
 Final Volume: 40 ml
 Result Units: MG/L
 Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
10-35-5	TOTAL ORGANIC CARBON	15	16.7	1		111	85 - 115%

Lab ID: MO150812-1LCSD

Sample Matrix: WATER
 % Moisture: N/A
 Date Collected: N/A
 Date Extracted: 08/12/2015
 Date Analyzed: 08/12/2015
 Prep Method: NONE

Prep Batch: MO150812-1
 QCBatchID: MO150812-1-1
 Run ID: MO150812-1A1
 Cleanup: NONE
 Basis: N/A
 File Name: 08121023

Sample Aliquot: 40 ml
 Final Volume: 40 ml
 Result Units: MG/L
 Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
10-35-5	TOTAL ORGANIC CARBON	15	16.7	1		111	20	0

Data Package ID: MO1508034-1

Organic Carbon

Method SW9060

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1508034

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: 100-BC-5 RI, JUNE 2015 X15-033

Field ID:	B31902
LabID:	1508034-1MS

Sample Matrix: WATER
 % Moisture: N/A
 Date Collected: 30-Jul-15
 Date Extracted: 12-Aug-15
 Date Analyzed: 12-Aug-15
 Prep Method: NONE

Prep Batch: MO150812-1
 QCBatchID: MO150812-1-1
 Run ID: MO150812-1A1
 Cleanup: NONE
 Basis: As Received

Sample Aliquot: 40 ml
 Final Volume: 40 ml
 Result Units: MG/L
 File Name: 08121023

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
10-35-5	TOTAL ORGANIC CARBON	0.36	J	12.2	N	1	10	122	80 - 120%

Field ID:	B31902
LabID:	1508034-1MSD

Sample Matrix: WATER
 % Moisture: N/A
 Date Collected: 30-Jul-15
 Date Extracted: 12-Aug-15
 Date Analyzed: 12-Aug-15
 Prep Method: NONE

Prep Batch: MO150812-1
 QCBatchID: MO150812-1-1
 Run ID: MO150812-1A1
 Cleanup: NONE
 Basis: As Received

Sample Aliquot: 40 ml
 Final Volume: 40 ml
 Result Units: MG/L
 File Name: 08121023

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
10-35-5	TOTAL ORGANIC CARBON	11.9		10	118	1	20	3

Data Package ID: MO1508034-1