



May 19, 2015

ALS1504559

Ft. Collins, Colorado

LIMS Version: 6.761

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Tuesday, May 19, 2015

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

Re: ALS Workorder: 1504559  
Project Name: RCRA, APRIL 2015  
Project Number: W15-004

Dear Ms. Waters-Husted:

Four water samples were received from CH2M HILL Plateau Remediation Company, on 4/29/2015. The samples were 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,

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
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New Jersey (NJ)	CO003
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

<b>SIR NUM</b>	SDR15-297
<b>REV NUM</b>	0
<b>DATE INITIATED</b>	5/5/2015

**SAMPLE EVENT INFORMATION**

<b>SAF NUM(S)</b>	W15-004, S15-004
<b>OPERABLE UNIT(S)</b>	NONE
<b>PROJECT(S)</b>	SURV15, RCRA15
<b>SAMPLE EVENT TITLE(S)</b>	SURV15, RCRA15
<b>LABORATORY</b>	ALS Environmental Ft. Collins

**SAMPLING INFORMATION**

<b>NUMBER OF SAMPLES</b>	5
<b>SAMPLE NUMBERS</b>	B313X7, B313X8, B313X9, B313Y0, B313Y7
<b>SAMPLE MATRIX</b>	WATER
<b>COLLECTION DATE</b>	4/24/2015; 4/23/2015
<b>SDG NUM</b>	ALS1504558; ALS1504559

**ISSUE BACKGROUND**

<b>CLASS</b>	Commercial Shipping Issue
<b>TYPE</b>	Other Shipping Issue (Specify)
<b>DESCRIPTION</b>	SAMPLES WERE RECEIVED AT 10.2 DEGREES CELSIUS. SAMPLES WERE SHIPPED ON 4/27/2015 BUT WERE NOT RECEIVED UNTIL 4/29/2015.

**DISPOSITION**

<b>DESCRIPTION</b>	Proposed Disposition: Perform analysis and document the temperature excursion in the narative.
<b>JUSTIFICATION</b>	Final Disposition: Accept proposed disposition.
	SUBMITTED BY: Julie Ellingson DATE: 05/01/2015
	ACCEPTED BY: Karen Waters-Husted DATE: 05/05/2015

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1504559

**Client Name:** CH2M HILL Plateau Remediation Company

**Client Project Name:** RCRA, APRIL 2015

**Client Project Number:** W15-004

**Client PO Number:** BOA 54854

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B313Y0	1504559-1		WATER	23-Apr-15	10:45
B313X9	1504559-2		WATER	23-Apr-15	10:45
B313X7	1504559-3		WATER	23-Apr-15	10:45
B313X8	1504559-4		WATER	23-Apr-15	10:45

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

C.O.C. #

**W15-004-169**

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ALS1504559

**Collector:** J.C. Fulton  
**SAF No.:** W15-004  
**Project Title:** RCRA, APRIL 2015  
**Shipped To (Lab):** ALS Environmental Ft. Collins  
**Protocol:** RCRA

**Contact/Requester:** Karen Waters-Husted  
**Sampling Origin:** Hanford Site  
**Logbook No.:** HNF-N-506 67/92  
**Method of Shipment:** Commercial Carrier  
**Priority:** 30 Days **PRIORITY**

**Telephone No.:** 509-376-4650  
**Purchase Order/Charge Code:** 300071  
**Ice Chest No.:** GWS-032  
**Bill of Lading/Air Bill No.:** 7734 6037 0635  
**Offsite Property No.:** 5593

**Total Activity Exemption:** Yes  No   
**SPECIAL INSTRUCTIONS:**

**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
B313Y0 ①	N	4-23-15	1045	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B313X9 ②	N	/	/	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B313X7 ③	N	/	/	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B313X8 ④	N	4-23-15	1045	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By J.C. Fulton CHPRC	Signature 	Date/Time APR 23 2015 1140	Print SSU#1	Sign	Received By S.S.U.#1	Date/Time APR 23 2015 1140	Matrix *
Relinquished By S.S.U.#1	Signature 	Date/Time APR 27 2015 0830	Print B.E. Briggf	Sign	Received By B.E. Briggf CHPRC	Date/Time APR 27 2015 0830	Matrix *
Relinquished By B.E. Briggf CHPRC	Signature 	Date/Time APR 27 2015 1430	Print FEDEX	Sign	Received By FEDEX	Date/Time APR 27 2015 1430	Matrix *
Relinquished By 4 5	Signature 	Date/Time 4/29/15 0935	Print Einfeth	Sign	Received By Einfeth	Date/Time 4/29/15 0935	Matrix *

**FINAL SAMPLE DISPOSITION:** 4  
**Disposal Method (e.g., Return to customer, per lab procedure, used in process):** 4  
**Disposed By:** Einfeth  
**Date/Time:** 4/29/15 0935



ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC

Workorder No: 1504559

Project Manager: JME

Initials: ECP Date: 4/29/15

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 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	YES	<input checked="" type="radio"/> NO
	Cooler #: <u>1</u>			
	Temperature (°C): <u>10.2°</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: cell email Date/Time: 4/29/15

Project Manager Signature / Date: [Signature] 5/1/15

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ALS1504559

12  
-2

From: (509) 373-7409  
Barbara Briggs  
CH2M  
6267 Latah St  
Richland, WA 99354

Origin ID: PSCA



Ship Date: 27APR15  
ActWgt: 12.0 LB  
CAD: 107066851/NET3810

1504559

Delivery Address Bar Code



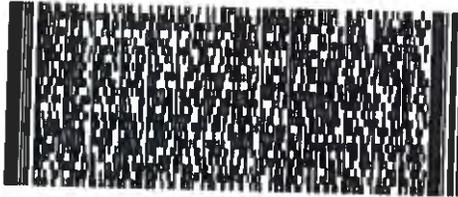
SHIP TO: (970) 498-1511  
Julie Ellingson  
ALS Global  
225 Commerce Drive  
FORT COLLINS, CO 80524

BILL THIRD PARTY

Ref # GWS-032 (5593)  
Invoice #  
PO #  
Dept #

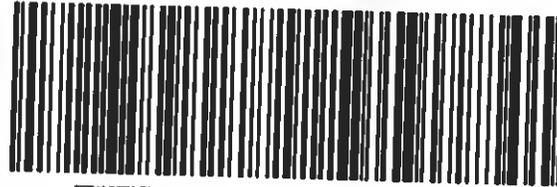
TUE - 28 APR 10:30A  
PRIORITY OVERNIGHT  
DSR  
80524  
CO-US  
DEN

TRK# 7734 8037 0635  
0281



XH FTCA

10.2<sup>0</sup>



537J125E2/EE4B

**After printing this label:**

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 charge your FedEx account number

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## Organic Carbon Case Narrative

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### CH2M HILL Plateau Remediation Company

RCRA, APRIL 2015 -- W15-004

Work Order Number: 1504559

1. This report consists of four water samples.
2. The samples were received intact at 10.2° Celsius by ALS on 04/29/15.
3. The samples had been correctly preserved for the requested analysis.
4. The samples were prepared for analysis based on SW-846, 3<sup>rd</sup> Edition procedures.
5. The samples were analyzed following SW-846, 3<sup>rd</sup> 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 samples were 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.

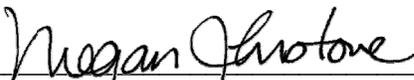
Sample 1504558-1 was designated as the quality control sample for this analysis. Results for the shared quality control samples are included at the client's request.

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.

- 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.

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

5/11/15  
Date

  
\_\_\_\_\_  
Audie Ellinger  
Organics Final Data Reviewer

5/13/15  
Date



### Data Reporting Qualifiers

The following qualifiers are used by the laboratory when reporting results of inorganic analyses.

- Concentration qualifier -- If the analyte was analyzed for but not detected a "U" is entered.
- QC qualifier -- Specified entries and their meanings are as follows:
  - N - Spiked sample recovery not within control limits.
  - \* - Duplicate analysis (relative percent difference) not within control limits.
  - 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).

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# Organic Carbon

Method SW9060

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1504559

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: RCRA, APRIL 2015 W15-004

Lab ID: MO150506-2MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06-May-15

Date Analyzed: 06-May-15

Prep Method: NONE

Prep Batch: MO150506-2

QCBatchID: MO150506-2-1

Run ID: MO150506-1A1

Cleanup: NONE

Basis: N/A

File Name: 05061017

Sample Aliquot: 40 ml

Final Volume: 40 ml

Result Units: MG/L

Clean DF: 1

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

Data Package ID: mo1504559-1

# TOTAL ORGANIC CARBON

Method SW9060

## Sample Results

**Lab Name:** ALS Environmental -- FC  
**Client Name:** CH2M HILL Plateau Remediation Company  
**Client Project ID:** RCRA, APRIL 2015 W15-004  
**Work Order Number:** 1504559      **Final Volume:** 40 ml  
**Reporting Basis:** As Received      **Matrix:** WATER  
**Prep Method:** NONE      **Result Units:** MG/L  
**Analyst:** Steven D. White

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/ LOQ/LOD	Flag	Sample Aliquot
B313Y0	1504559-1	04/23/2015	05/06/2015	05/06/2015	N/A	1	1	1	U	40 ml
B313X9	1504559-2	04/23/2015	05/06/2015	05/06/2015	N/A	1	1	1	U	40 ml
B313X7	1504559-3	04/23/2015	05/06/2015	05/06/2015	N/A	1	1	1	U	40 ml
B313X8	1504559-4	04/23/2015	05/06/2015	05/06/2015	N/A	1	1	1	U	40 ml

**Comments:**

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

**Data Package ID:** mo1504559-1

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ALS1504559

# Organic Carbon

Method SW9060

## Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1504559

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: RCRA, APRIL 2015 W15-004

Lab ID: MO150506-2LCS	Sample Matrix: WATER	Prep Batch: MO150506-2	Sample Aliquot: 40 ml
	% Moisture: N/A	QCBatchID: MO150506-2-1	Final Volume: 40 ml
	Date Collected: N/A	Run ID: MO150506-1A1	Result Units: MG/L
	Date Extracted: 05/06/2015	Cleanup: NONE	Clean DF: 1
	Date Analyzed: 05/06/2015	Basis: N/A	
	Prep Method: NONE	File Name: 05061017	

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
10-35-5	TOTAL ORGANIC CARBON	15	15.5	1		103	85 - 115%

Lab ID: MO150506-2LCSD	Sample Matrix: WATER	Prep Batch: MO150506-2	Sample Aliquot: 40 ml
	% Moisture: N/A	QCBatchID: MO150506-2-1	Final Volume: 40 ml
	Date Collected: N/A	Run ID: MO150506-1A1	Result Units: MG/L
	Date Extracted: 05/06/2015	Cleanup: NONE	Clean DF: 1
	Date Analyzed: 05/06/2015	Basis: N/A	
	Prep Method: NONE	File Name: 05061017	

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
10-35-5	TOTAL ORGANIC CARBON	15	15.5	1		103	20	0

Data Package ID: mo1504559-1

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ALS1504559

# Organic Carbon

Method SW9060

## Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1504559

Client Name: CH2M HILL Plateau Remediation Company

ClientProject ID: RCRA, APRIL 2015 W15-004

Field ID: SHARED QC	Sample Matrix: WATER	Prep Batch: MO150506-2	Sample Aliquot: 40 ml
LabID: 1504558-1MS	% Moisture: N/A	QCBatchID: MO150506-2-1	Final Volume: 40 ml
	Date Collected: 24-Apr-15	Run ID: MO150506-1A1	Result Units: MG/L
	Date Extracted: 06-May-15	Cleanup: NONE	File Name: 05061017
	Date Analyzed: 06-May-15	Basis: As Received	
	Prep Method: NONE		

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	1.5		11.6		1	10	100	80 - 120%

Field ID: SHARED QC	Sample Matrix: WATER	Prep Batch: MO150506-2	Sample Aliquot: 40 ml
LabID: 1504558-1MSD	% Moisture: N/A	QCBatchID: MO150506-2-1	Final Volume: 40 ml
	Date Collected: 24-Apr-15	Run ID: MO150506-1A1	Result Units: MG/L
	Date Extracted: 06-May-15	Cleanup: NONE	File Name: 05061017
	Date Analyzed: 06-May-15	Basis: As Received	
	Prep Method: NONE		

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
10-35-5	TOTAL ORGANIC CARBON	11.5		10	99	1	20	1

Data Package ID: mo1504559-1