

Organic Carbon Case Narrative

Colorado Oil & Gas Conservation Commission Box Elder Creek

Work Order Number: 1508348

1. This report consists of 2 water samples.
2. The samples were received cool and intact by ALS on 08/21/15.
3. The samples had been correctly preserved for the requested analysis.
4. The samples were prepared for analysis based on Methods for the Chemical Analysis of Waters and Wastes (MCAWW), May 1994 procedures.
5. The samples were analyzed following MCAWW procedures for the current revision of the following SOP and method:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
TOC (Total Organic Carbon)	415.1	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.

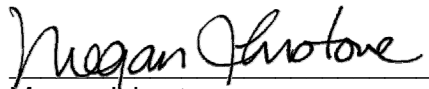
Samples 1508348-1 and -2 were designated as the quality control samples for this analysis.

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 Matrix spikes (MS) and matrix spike duplicates (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.

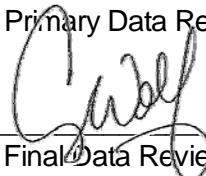
The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.



Megan Johnstone
Organics Primary Data Reviewer

8/25/15

Date



Organics Final Data Reviewer

8/31/15

Date



Data Reporting Qualifiers

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

- Concentration qualifier -- A “J” is entered if the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to ALS’s Method Detection Limit. 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.
 - B - The method blank for the analysis contained the analyte of interest above the reporting limit.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1508348

Client Name: Colorado Oil & Gas Conservation Commission

Client Project Name: Box Elder Creek

Client Project Number:

Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Box Elder Down	1508348-1		WATER	20-Aug-15	11:48
Box Elder Up	1508348-2		WATER	20-Aug-15	14:05
Trip Blank	1508348-3		WATER	20-Aug-15	7:00



225 Commerce Drive, Fort Collins, Colorado 80524
 TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

Time Zone (Circle):	EST	CST	MST	PST	Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

For metals or anions, please detail analytes below.					
Comments:	<p>fifty different metals on receipt = dissolved 7607-1666-11, Bz-2007-1666 7608-1666-16, Bz-2007-1666 Alloys = Pb, Cl, F, Ag, Cu, Ni, Zn, Cd</p>				
	QC PACKAGE (check below)				
	LEVEL II (Standard QC) <input checked="" type="checkbox"/>				
	LEVEL III (Std QC + forms)				
	LEVEL IV (Std QC + forms + raw data)				
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-NaHSO ₄ 7-Other 8-4 degrees C 9-50/35					

Preservative Key:

1-HCl	2-HNO ₃	3-H ₂ SO ₄	4-NaOH	5-NaHSO ₄	7-Other	8.4 degrees C	9-5035
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ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC

Workorder No: 1508348

Project Manager: AW

Initials: CDT Date: 8-21-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<u>NO</u>
2. Are custody seals on shipping containers intact?	NONE	<u>YES</u>	NO
3. Are Custody seals on sample containers intact?	<u>NONE</u>	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<u>YES</u>	NO
5. Are the COC and bottle labels complete and legible?		<u>YES</u>	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<u>YES</u>	NO
7. Were airbills / shipping documents present and/or removable?	<u>DROP OFF</u>	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<u>YES</u>	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<u>YES</u>	NO
10. Is there sufficient sample for the requested analyses?		<u>YES</u>	NO
11. Were all samples placed in the proper containers for the requested analyses?		<u>YES</u>	NO
12. Are all samples within holding times for the requested analyses?		<u>YES</u>	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<u>YES</u>	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	YES	<u>NO</u>
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A	YES	<u>NO</u>
16. Were the samples shipped on ice?		<u>YES</u>	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 <u>#4</u>	RAD ONLY	<u>YES</u>	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>1.6</u>			
No. of custody seals on cooler: <u>1</u>			
External µR/hr reading: <u>NA</u>			
Background µR/hr reading: <u>NA</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / <u>NA</u> (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: Gary Date/Time: 8/21/15

Project Manager Signature / Date: Gary 8/21/15

Organic Carbon

Method EPA415.1

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1508348

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Box Elder Creek

Lab ID: MO150824-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 24-Aug-15

Date Analyzed: 24-Aug-15

Prep Batch: MO150824-3

QCBatchID: MO150824-3-1

Run ID: MO150824-3A1

Cleanup: NONE

Basis: N/A

File Name: 08241130

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	1	1	0.3	U	

Data Package ID: MO1508348-1

Date Printed: Tuesday, August 25, 2015

ALS Environmental -- FC

Page 1 of 1

LIMS Version: 6.780

TOTAL ORGANIC CARBON

Method EPA415.1

Sample Results

Lab Name: ALS Environmental -- FC

Client Name: Colorado Oil & Gas Conservation Commission

Client Project ID: Box Elder Creek

Work Order Number: 1508348

Final Volume: 40 ml

Reporting Basis: As Received

Matrix: WATER

Analyst: Steven D. White

Result Units: MG/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
Box Elder Down	1508348-1	8/20/2015	8/24/2015	08/24/2015	N/A	1	9.1	1	0.3		40 ml
Box Elder Up	1508348-2	8/20/2015	8/24/2015	08/24/2015	N/A	1	9.1	1	0.3		40 ml

Comments:

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

Data Package ID: *MO1508348-1*

Date Printed: Tuesday, August 25, 2015

ALS Environmental -- FC

LIMS Version: 6.780

Page 1 of 1

Organic Carbon

Method EPA415.1

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1508348

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Box Elder Creek

Lab ID: MO150824-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 08/24/2015

Date Analyzed: 08/24/2015

Prep Method: NONE

Prep Batch: MO150824-3

QCBatchID: MO150824-3-1

Run ID: MO150824-3A1

Cleanup: NONE

Basis: N/A

File Name: 08241130

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	15.9	1		106	85 - 115%

Lab ID: MO150824-1LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 08/24/2015

Date Analyzed: 08/24/2015

Prep Method: NONE

Prep Batch: MO150824-3

QCBatchID: MO150824-3-1

Run ID: MO150824-3A1

Cleanup: NONE

Basis: N/A

File Name: 08241130

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	15.9	1		106	20	0

Data Package ID: MO1508348-1

Date Printed: Tuesday, August 25, 2015

ALS Environmental -- FC

LIMS Version: 6.780

Page 1 of 1

Organic Carbon

Method EPA415.1

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1508348

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Box Elder Creek

Field ID: Box Elder Down

LabID: 1508348-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Aug-15

Date Extracted: 24-Aug-15

Date Analyzed: 24-Aug-15

Prep Method: NONE

Prep Batch: MO150824-3

QCBatchID: MO150824-3-1

Run ID: MO150824-3A1

Cleanup: NONE

Basis: As Received

Sample Aliquot: 40 ml

Final Volume: 40 ml

Result Units: MG/L

File Name: 08241130

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	9.1		19.2		1	10	100	80 - 120%

Field ID: Box Elder Down

LabID: 1508348-1MSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Aug-15

Date Extracted: 24-Aug-15

Date Analyzed: 24-Aug-15

Prep Method: NONE

Prep Batch: MO150824-3

QCBatchID: MO150824-3-1

Run ID: MO150824-3A1

Cleanup: NONE

Basis: As Received

Sample Aliquot: 40 ml

Final Volume: 40 ml

Result Units: MG/L

File Name: 08241130

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
10-35-5	TOTAL ORGANIC CARBON	19.2		10	100	1	20	0

Data Package ID: MO1508348-1

Date Printed: Tuesday, August 25, 2015

ALS Environmental -- FC

Page 1 of 2

LIMS Version: 6.780

Organic Carbon

Method EPA415.1

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1508348

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Box Elder Creek

Field ID: Box Elder Up

LabID: 1508348-2MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Aug-15

Date Extracted: 24-Aug-15

Date Analyzed: 24-Aug-15

Prep Method: NONE

Prep Batch: MO150824-3

QCBatchID: MO150824-3-1

Run ID: MO150824-3A1

Cleanup: NONE

Basis: As Received

Sample Aliquot: 40 ml

Final Volume: 40 ml

Result Units: MG/L

File Name: 08241130

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	9.1		19.4		1	10	103	80 - 120%

Field ID: Box Elder Up

LabID: 1508348-2MSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 20-Aug-15

Date Extracted: 24-Aug-15

Date Analyzed: 24-Aug-15

Prep Method: NONE

Prep Batch: MO150824-3

QCBatchID: MO150824-3-1

Run ID: MO150824-3A1

Cleanup: NONE

Basis: As Received

Sample Aliquot: 40 ml

Final Volume: 40 ml

Result Units: MG/L

File Name: 08241130

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
10-35-5	TOTAL ORGANIC CARBON	19.5		10	104	1	20	0

Data Package ID: MO1508348-1

Date Printed: Tuesday, August 25, 2015

ALS Environmental -- FC

Page 2 of 2

LIMS Version: 6.780