

Colorado Oil & Gas Conservation

Sample Delivery Group: L785788
Samples Received: 08/28/2015
Project Number: REM #73
Description: 1120 Lincoln St. Ste. 801

Report To: Jim Hughes
707 Wapiti Court, Ste 204
Rifle, CO 81650

Entire Report Reviewed By:



Daphne Richards
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



¹Cp: Cover Page	1	¹Cp
²Tc: Table of Contents	2	²Tc
³Ss: Sample Summary	3	³Ss
⁴Cn: Case Narrative	4	⁴Cn
⁵Sr: Sample Results	5	⁵Sr
201508261425 L785788-01	5	
⁶Qc: Quality Control Summary	6	⁶Qc
Volatile Organic Compounds (GC) by Method 8015/8021	6	
Semi-Volatile Organic Compounds (GC) by Method 8015	8	
⁷Gl: Glossary of Terms	9	⁷Gl
⁸Al: Accreditations & Locations	10	⁸Al
⁹Sc: Chain of Custody	11	⁹Sc

SAMPLE SUMMARY



201508261425 L785788-01 Solid

Collected by
Jim Hughes

Collected date/time
08/26/15 14:25

Received date/time
08/28/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Semi-Volatile Organic Compounds (GC) by Method 8015	WG813349	1	09/03/15 09:45	09/03/15 20:12	CLG
Volatile Organic Compounds (GC) by Method 8015/8021	WG812745	5	09/01/15 09:21	09/01/15 15:35	KLO

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne Richards
Technical Service Representative

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.00250	5	09/01/2015 15:35	WG812745
Toluene	ND	J6	0.0250	5	09/01/2015 15:35	WG812745
Ethylbenzene	ND	J6	0.00250	5	09/01/2015 15:35	WG812745
Total Xylene	ND	J6	0.00750	5	09/01/2015 15:35	WG812745
TPH (GC/FID) Low Fraction	ND		0.500	5	09/01/2015 15:35	WG812745
(S) a,a,a-Trifluorotoluene(FID)	98.9		59.0-128		09/01/2015 15:35	WG812745
(S) a,a,a-Trifluorotoluene(PID)	101		54.0-144		09/01/2015 15:35	WG812745

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	ND		4.00	1	09/03/2015 20:12	WG813349
C28-C40 Oil Range	ND		4.00	1	09/03/2015 20:12	WG813349
(S) o-Terphenyl	87.6		50.0-150		09/03/2015 20:12	WG813349

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) 09/01/15 12:38

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Benzene	ND		0.000500
Toluene	ND		0.00500
Ethylbenzene	ND		0.000500
Total Xylene	ND		0.00150
TPH (GC/FID) Low Fraction	ND		0.100
(S) a,a,a-Trifluorotoluene(FID)	100		59.0-128
(S) a,a,a-Trifluorotoluene(PID)	102		54.0-144

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/01/15 10:53 • (LCSD) 09/01/15 11:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0414	0.0423	82.7	84.7	70.0-130			2.32	20
Toluene	0.0500	0.0454	0.0462	90.9	92.4	70.0-130			1.63	20
Ethylbenzene	0.0500	0.0461	0.0469	92.2	93.8	70.0-130			1.71	20
Total Xylene	0.150	0.144	0.146	95.8	97.3	70.0-130			1.56	20
(S) a,a,a-Trifluorotoluene(FID)				99.4	99.0	59.0-128				
(S) a,a,a-Trifluorotoluene(PID)				102	102	54.0-144				

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 09/01/15 11:35 • (LCSD) 09/01/15 11:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.91	5.85	107	106	63.5-137			0.980	20
(S) a,a,a-Trifluorotoluene(FID)				101	101	59.0-128				
(S) a,a,a-Trifluorotoluene(PID)				106	106	54.0-144				

L785788-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/01/15 15:35 • (MS) 09/01/15 16:59 • (MSD) 09/01/15 17:20

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.000557	0.137	0.135	54.6	53.7	5	49.7-127			1.71	23.5



L785788-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/01/15 15:35 • (MS) 09/01/15 16:59 • (MSD) 09/01/15 17:20

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Toluene	0.0500	0.00249	0.117	0.121	45.9	47.4	5	49.8-132	<u>J6</u>	<u>J6</u>	3.18	23.5
Ethylbenzene	0.0500	0.000451	0.0939	0.105	37.4	41.8	5	40.8-141	<u>J6</u>		11.2	23.8
Total Xylene	0.150	0.00346	0.275	0.310	36.2	40.9	5	41.2-140	<u>J6</u>	<u>J6</u>	12.0	23.7
<i>(S) a,a,a-Trifluorotoluene(PID)</i>					101	102		54.0-144				

L785788-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 09/01/15 15:35 • (MS) 09/01/15 17:41 • (MSD) 09/01/15 18:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	ND	14.3	15.6	51.9	56.8	5	28.5-138			9.10	23.6
<i>(S) a,a,a-Trifluorotoluene(FID)</i>					96.3	96.2		59.0-128				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) 09/03/15 17:42

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
C10-C28 Diesel Range	ND		4.00
C28-C40 Oil Range	ND		4.00
(S) o-Terphenyl	108		50.0-150

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.



State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ^{n/a} Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA–Crypto	TN00003	USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



