



23-Jul-2018

Jake Janicek
Caerus Oil and Gas LLC
143 Diamond Ave.
Parachute, CO 81635

Re: **Riley 1**

Work Order: **1807891**

Dear Jake,

ALS Environmental received 7 samples on 17-Jul-2018 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 18.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 998501

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Caerus Oil and Gas LLC
Project: Riley 1
Work Order: 1807891

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1807891-01	20180716-Riley 1-SW Bottom (30')	Soil		7/16/2018 13:00	7/17/2018 09:00	<input type="checkbox"/>
1807891-02	20180716-Riley 1-W Wall (N) (28')	Soil		7/16/2018 13:10	7/17/2018 09:00	<input type="checkbox"/>
1807891-03	20180716-Riley 1-N Wall (28')	Soil		7/16/2018 13:20	7/17/2018 09:00	<input type="checkbox"/>
1807891-04	20180716-Riley 1-S Bottom (30')	Soil		7/16/2018 13:30	7/17/2018 09:00	<input type="checkbox"/>
1807891-05	20180716-Riley 1-S Wall (8')	Soil		7/16/2018 13:40	7/17/2018 09:00	<input type="checkbox"/>
1807891-06	20180716-Riley 1-W Wall Brown Steak (20')	Soil		7/16/2018 14:00	7/17/2018 09:00	<input type="checkbox"/>
1807891-07	20180716-Riley 1-Spoil	Soil		7/16/2018 14:10	7/17/2018 09:00	<input type="checkbox"/>

Client: Caerus Oil and Gas LLC**Project:** Riley 1**Work Order:** 1807891**Case Narrative**

Batch 121423, Method VOC_8260_S, Samples 1807891-04A, -05A, and -07A: VOC surrogate recoveries high due to matrix interference.

Batch 121424, Method GRO_8015_S, Samples 1807891-03A, -05A, and -06A: GRO surrogate recoveries high due to matrix interference.

Client: Caerus Oil and Gas LLC
Project: Riley 1
WorkOrder: 1807891

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

ALS Group, USA

Date: 23-Jul-18

Client: Caerus Oil and Gas LLC
Project: Riley 1
Sample ID: 20180716-Riley 1-SW Bottom (30')
Collection Date: 7/16/2018 01:00 PM

Work Order: 1807891
Lab ID: 1807891-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C		Prep: SW3546 / 7/17/18		Analyst: RP
DRO (C10-C28)	U		3.6	6.2	mg/Kg-dry	1	7/20/2018 09:43
Surr: 4-Terphenyl-d14	85.6			34-130	%REC	1	7/20/2018 09:43
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/17/18		Analyst: RP
GRO (C6-C10)	U		3.2	7.7	mg/Kg-dry	1	7/17/2018 12:46
Surr: Toluene-d8	119			71-123	%REC	1	7/17/2018 12:46
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C		Prep: SW5035 / 7/17/18		Analyst: EMR
Benzene	U		0.0051	0.030	mg/Kg-dry	1	7/17/2018 12:30
Ethylbenzene	U		0.0063	0.030	mg/Kg-dry	1	7/17/2018 12:30
m,p-Xylene	U		0.014	0.060	mg/Kg-dry	1	7/17/2018 12:30
o-Xylene	U		0.012	0.030	mg/Kg-dry	1	7/17/2018 12:30
Toluene	U		0.0082	0.030	mg/Kg-dry	1	7/17/2018 12:30
Xylenes, Total	U		0.026	0.090	mg/Kg-dry	1	7/17/2018 12:30
Surr: 1,2-Dichloroethane-d4	104			70-130	%REC	1	7/17/2018 12:30
Surr: 4-Bromofluorobenzene	100			70-130	%REC	1	7/17/2018 12:30
Surr: Dibromofluoromethane	95.8			70-130	%REC	1	7/17/2018 12:30
Surr: Toluene-d8	101			70-130	%REC	1	7/17/2018 12:30
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	21		0.025	0.050	% of sample	1	7/17/2018 13:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 23-Jul-18

Client: Caerus Oil and Gas LLC

Project: Riley 1

Sample ID: 20180716-Riley 1-W Wall (N) (28')

Collection Date: 7/16/2018 01:10 PM

Work Order: 1807891

Lab ID: 1807891-02

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C		Prep: SW3546 / 7/17/18		Analyst: RP
DRO (C10-C28)	4.5	J	3.5	6.1	mg/Kg-dry	1	7/20/2018 10:12
Surr: 4-Terphenyl-d14	83.1			34-130	%REC	1	7/20/2018 10:12
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/17/18		Analyst: RP
GRO (C6-C10)	U		3.1	7.5	mg/Kg-dry	1	7/17/2018 13:12
Surr: Toluene-d8	122			71-123	%REC	1	7/17/2018 13:12
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C		Prep: SW5035 / 7/17/18		Analyst: EMR
Benzene	U		0.0051	0.030	mg/Kg-dry	1	7/17/2018 12:46
Ethylbenzene	U		0.0063	0.030	mg/Kg-dry	1	7/17/2018 12:46
m,p-Xylene	U		0.014	0.060	mg/Kg-dry	1	7/17/2018 12:46
o-Xylene	U		0.012	0.030	mg/Kg-dry	1	7/17/2018 12:46
Toluene	U		0.0082	0.030	mg/Kg-dry	1	7/17/2018 12:46
Xylenes, Total	U		0.026	0.090	mg/Kg-dry	1	7/17/2018 12:46
Surr: 1,2-Dichloroethane-d4	103			70-130	%REC	1	7/17/2018 12:46
Surr: 4-Bromofluorobenzene	97.2			70-130	%REC	1	7/17/2018 12:46
Surr: Dibromofluoromethane	101			70-130	%REC	1	7/17/2018 12:46
Surr: Toluene-d8	97.2			70-130	%REC	1	7/17/2018 12:46
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	20		0.025	0.050	% of sample	1	7/17/2018 13:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 23-Jul-18

Client: Caerus Oil and Gas LLC
Project: Riley 1
Sample ID: 20180716-Riley 1-N Wall (28')
Collection Date: 7/16/2018 01:20 PM

Work Order: 1807891
Lab ID: 1807891-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C		Prep: SW3546 / 7/17/18		Analyst: RP
DRO (C10-C28)	53		3.7	6.4	mg/Kg-dry	1	7/20/2018 10:42
Surr: 4-Terphenyl-d14	90.1			34-130	%REC	1	7/20/2018 10:42
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/17/18		Analyst: RP
GRO (C6-C10)	84		3.4	8.2	mg/Kg-dry	1	7/17/2018 13:39
Surr: Toluene-d8	143	S		71-123	%REC	1	7/17/2018 13:39
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C		Prep: SW5035 / 7/17/18		Analyst: EMR
Benzene	U		0.0051	0.030	mg/Kg-dry	1	7/17/2018 13:02
Ethylbenzene	0.078		0.0063	0.030	mg/Kg-dry	1	7/17/2018 13:02
m,p-Xylene	0.11		0.014	0.060	mg/Kg-dry	1	7/17/2018 13:02
o-Xylene	U		0.012	0.030	mg/Kg-dry	1	7/17/2018 13:02
Toluene	U		0.0082	0.030	mg/Kg-dry	1	7/17/2018 13:02
Xylenes, Total	0.11		0.026	0.090	mg/Kg-dry	1	7/17/2018 13:02
Surr: 1,2-Dichloroethane-d4	104			70-130	%REC	1	7/17/2018 13:02
Surr: 4-Bromofluorobenzene	104			70-130	%REC	1	7/17/2018 13:02
Surr: Dibromofluoromethane	101			70-130	%REC	1	7/17/2018 13:02
Surr: Toluene-d8	105			70-130	%REC	1	7/17/2018 13:02
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	24		0.025	0.050	% of sample	1	7/17/2018 13:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 23-Jul-18

Client: Caerus Oil and Gas LLC

Project: Riley 1

Sample ID: 20180716-Riley 1-S Bottom (30')

Collection Date: 7/16/2018 01:30 PM

Work Order: 1807891

Lab ID: 1807891-04

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C		Prep: SW3546 / 7/17/18		Analyst: RP
DRO (C10-C28)	36		3.3	5.7	mg/Kg-dry	1	7/20/2018 11:11
Surr: 4-Terphenyl-d14	93.1			34-130	%REC	1	7/20/2018 11:11
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/17/18		Analyst: RP
GRO (C6-C10)	430		2.8	6.6	mg/Kg-dry	1	7/17/2018 14:05
Surr: Toluene-d8	83.1			71-123	%REC	1	7/17/2018 14:05
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C		Prep: SW5035 / 7/17/18		Analyst: EMR
Benzene	U		0.0051	0.030	mg/Kg-dry	1	7/17/2018 13:18
Ethylbenzene	0.62		0.0063	0.030	mg/Kg-dry	1	7/17/2018 13:18
m,p-Xylene	6.7		0.014	0.060	mg/Kg-dry	1	7/17/2018 13:18
o-Xylene	0.36		0.012	0.030	mg/Kg-dry	1	7/17/2018 13:18
Toluene	U		0.0082	0.030	mg/Kg-dry	1	7/17/2018 13:18
Xylenes, Total	7.1		0.026	0.090	mg/Kg-dry	1	7/17/2018 13:18
Surr: 1,2-Dichloroethane-d4	105			70-130	%REC	1	7/17/2018 13:18
Surr: 4-Bromofluorobenzene	121			70-130	%REC	1	7/17/2018 13:18
Surr: Dibromofluoromethane	100			70-130	%REC	1	7/17/2018 13:18
Surr: Toluene-d8	160	S		70-130	%REC	1	7/17/2018 13:18
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	14		0.025	0.050	% of sample	1	7/17/2018 13:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 23-Jul-18

Client: Caerus Oil and Gas LLC
Project: Riley 1
Sample ID: 20180716-Riley 1-S Wall (8')
Collection Date: 7/16/2018 01:40 PM

Work Order: 1807891
Lab ID: 1807891-05
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C		Prep: SW3546 / 7/17/18		Analyst: RP
DRO (C10-C28)	120		3.5	6.0	mg/Kg-dry	1	7/20/2018 12:10
Surr: 4-Terphenyl-d14	93.1			34-130	%REC	1	7/20/2018 12:10
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/17/18		Analyst: RP
GRO (C6-C10)	2,000		3.1	7.3	mg/Kg-dry	1	7/17/2018 14:31
Surr: Toluene-d8	237	S		71-123	%REC	1	7/17/2018 14:31
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C		Prep: SW5035 / 7/17/18		Analyst: EMR
Benzene	0.54		0.0051	0.030	mg/Kg-dry	1	7/17/2018 13:34
Ethylbenzene	3.9		0.0063	0.030	mg/Kg-dry	1	7/17/2018 13:34
m,p-Xylene	76		0.29	1.2	mg/Kg-dry	20	7/17/2018 14:44
o-Xylene	11		0.23	0.60	mg/Kg-dry	20	7/17/2018 14:44
Toluene	U		0.0082	0.030	mg/Kg-dry	1	7/17/2018 13:34
Xylenes, Total	86		0.52	1.8	mg/Kg-dry	20	7/17/2018 14:44
Surr: 1,2-Dichloroethane-d4	102			70-130	%REC	1	7/17/2018 13:34
Surr: 1,2-Dichloroethane-d4	92.7			70-130	%REC	20	7/17/2018 14:44
Surr: 4-Bromofluorobenzene	174	S		70-130	%REC	1	7/17/2018 13:34
Surr: 4-Bromofluorobenzene	101			70-130	%REC	20	7/17/2018 14:44
Surr: Dibromofluoromethane	97.2			70-130	%REC	1	7/17/2018 13:34
Surr: Dibromofluoromethane	98.5			70-130	%REC	20	7/17/2018 14:44
Surr: Toluene-d8	235	S		70-130	%REC	1	7/17/2018 13:34
Surr: Toluene-d8	104			70-130	%REC	20	7/17/2018 14:44
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	19		0.025	0.050	% of sample	1	7/17/2018 13:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 23-Jul-18

Client: Caerus Oil and Gas LLC

Project: Riley 1

Sample ID: 20180716-Riley 1-W Wall Brown Steak (20')

Collection Date: 7/16/2018 02:00 PM

Work Order: 1807891

Lab ID: 1807891-06

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C			Prep: SW3546 / 7/17/18	Analyst: RP
DRO (C10-C28)	15		3.8	6.5	mg/Kg-dry	1	7/20/2018 12:39
Surr: 4-Terphenyl-d14	85.1			34-130	%REC	1	7/20/2018 12:39
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D			Prep: SW5035 / 7/17/18	Analyst: RP
GRO (C6-C10)	16		3.4	8.2	mg/Kg-dry	1	7/17/2018 14:58
Surr: Toluene-d8	124	S		71-123	%REC	1	7/17/2018 14:58
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C			Prep: SW5035 / 7/17/18	Analyst: WH
Benzene	U		0.0084	0.049	mg/Kg-dry	1	7/18/2018 15:21
Ethylbenzene	U		0.010	0.049	mg/Kg-dry	1	7/18/2018 15:21
m,p-Xylene	U		0.023	0.098	mg/Kg-dry	1	7/18/2018 15:21
o-Xylene	U		0.019	0.049	mg/Kg-dry	1	7/18/2018 15:21
Toluene	U		0.013	0.049	mg/Kg-dry	1	7/18/2018 15:21
Xylenes, Total	U		0.042	0.15	mg/Kg-dry	1	7/18/2018 15:21
Surr: 1,2-Dichloroethane-d4	99.8			70-130	%REC	1	7/18/2018 15:21
Surr: 4-Bromofluorobenzene	97.0			70-130	%REC	1	7/18/2018 15:21
Surr: Dibromofluoromethane	88.7			70-130	%REC	1	7/18/2018 15:21
Surr: Toluene-d8	99.0			70-130	%REC	1	7/18/2018 15:21
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	24		0.025	0.050	% of sample	1	7/17/2018 13:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 23-Jul-18

Client: Caerus Oil and Gas LLC
Project: Riley 1
Sample ID: 20180716-Riley 1-Spoil
Collection Date: 7/16/2018 02:10 PM

Work Order: 1807891
Lab ID: 1807891-07
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C		Prep: SW3546 / 7/17/18		Analyst: RP
DRO (C10-C28)	29		3.6	6.2	mg/Kg-dry	1	7/20/2018 15:04
Surr: 4-Terphenyl-d14	95.6			34-130	%REC	1	7/20/2018 15:04
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 7/17/18		Analyst: RP
GRO (C6-C10)	830		3.1	7.3	mg/Kg-dry	1	7/17/2018 15:24
Surr: Toluene-d8	88.2			71-123	%REC	1	7/17/2018 15:24
VOLATILE ORGANIC COMPOUNDS							
			Method: SW8260C		Prep: SW5035 / 7/17/18		Analyst: EMR
Benzene	U		0.0051	0.030	mg/Kg-dry	1	7/17/2018 14:06
Ethylbenzene	1.1		0.0063	0.030	mg/Kg-dry	1	7/17/2018 14:06
m,p-Xylene	33		0.14	0.60	mg/Kg-dry	10	7/17/2018 15:16
o-Xylene	2.4		0.012	0.030	mg/Kg-dry	1	7/17/2018 14:06
Toluene	U		0.0082	0.030	mg/Kg-dry	1	7/17/2018 14:06
Xylenes, Total	37		0.26	0.90	mg/Kg-dry	10	7/17/2018 15:16
Surr: 1,2-Dichloroethane-d4	98.2			70-130	%REC	1	7/17/2018 14:06
Surr: 1,2-Dichloroethane-d4	97.6			70-130	%REC	10	7/17/2018 15:16
Surr: 4-Bromofluorobenzene	124			70-130	%REC	1	7/17/2018 14:06
Surr: 4-Bromofluorobenzene	99.8			70-130	%REC	10	7/17/2018 15:16
Surr: Dibromofluoromethane	96.0			70-130	%REC	1	7/17/2018 14:06
Surr: Dibromofluoromethane	98.7			70-130	%REC	10	7/17/2018 15:16
Surr: Toluene-d8	167	S		70-130	%REC	1	7/17/2018 14:06
Surr: Toluene-d8	107			70-130	%REC	10	7/17/2018 15:16
MOISTURE							
			Method: SW3550C				Analyst: SBR
Moisture	19		0.025	0.050	% of sample	1	7/17/2018 13:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Caerus Oil and Gas LLC
Work Order: 1807891
Project: Riley 1

QC BATCH REPORT

Batch ID: **121421** Instrument ID **GC8** Method: **SW8015C**

MBLK		Sample ID: DBLKS1-121421-121421				Units: mg/Kg		Analysis Date: 7/20/2018 07:16 AM		
Client ID:		Run ID: GC8_180719A				SeqNo: 5158513		Prep Date: 7/17/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	U	5.0								
Surr: 4-Terphenyl-d14	2.967	0	3.33	0	89.1	34-130	0			

LCS		Sample ID: DLCSS1-121421-121421				Units: mg/Kg		Analysis Date: 7/20/2018 07:45 AM		
Client ID:		Run ID: GC8_180719A				SeqNo: 5158514		Prep Date: 7/17/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	358.2	5.0	333	0	108	65-122	0			
Surr: 4-Terphenyl-d14	3.167	0	3.33	0	95.1	34-130	0			

MS		Sample ID: 1807843-07B MS				Units: mg/Kg		Analysis Date: 7/20/2018 08:15 AM		
Client ID:		Run ID: GC8_180719A				SeqNo: 5158515		Prep Date: 7/17/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	377	5.0	330.4	9.548	111	65-122	0			
Surr: 4-Terphenyl-d14	3.158	0	3.304	0	95.6	34-130	0			

MSD		Sample ID: 1807843-07B MSD				Units: mg/Kg		Analysis Date: 7/20/2018 08:44 AM		
Client ID:		Run ID: GC8_180719A				SeqNo: 5158516		Prep Date: 7/17/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	376.5	4.9	326	9.548	113	65-122	377	0.133	30	
Surr: 4-Terphenyl-d14	3.263	0	3.26	0	100	34-130	3.158	3.26	30	

The following samples were analyzed in this batch:

1807891-01A	1807891-02A	1807891-03A
1807891-04A	1807891-05A	1807891-06A
1807891-07A		

Client: Caerus Oil and Gas LLC
 Work Order: 1807891
 Project: Riley 1

QC BATCH REPORT

Batch ID: 121424 Instrument ID GC10 Method: SW8015D

MBLK		Sample ID: MBLK-121424-121424				Units: µg/Kg-dry		Analysis Date: 7/17/2018 12:19 PM		
Client ID:		Run ID: GC10_180716A				SeqNo: 5150522		Prep Date: 7/17/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10) U 5,000
 Surr: Toluene-d8 5800 0 5000 0 116 71-123 0

LCS		Sample ID: LCS-121424-121424				Units: µg/Kg-dry		Analysis Date: 7/17/2018 11:27 AM		
Client ID:		Run ID: GC10_180716A				SeqNo: 5150520		Prep Date: 7/17/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10) 466000 5,000 500000 0 93.2 71-123 0
 Surr: Toluene-d8 5435 0 5000 0 109 71-123 0

MS		Sample ID: 1807891-02A MS				Units: µg/Kg-dry		Analysis Date: 7/17/2018 03:50 PM		
Client ID: 20180716-Riley 1-W Wall (N) (28')		Run ID: GC10_180716A				SeqNo: 5151681		Prep Date: 7/17/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10) 644800 7,500 750000 0 86 71-123 0
 Surr: Toluene-d8 8634 0 7500 0 115 71-123 0

MSD		Sample ID: 1807891-02A MSD				Units: µg/Kg-dry		Analysis Date: 7/17/2018 04:43 PM		
Client ID: 20180716-Riley 1-W Wall (N) (28')		Run ID: GC10_180716A				SeqNo: 5151685		Prep Date: 7/17/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10) 711300 7,500 750000 0 94.8 71-123 644800 9.8 30
 Surr: Toluene-d8 8633 0 7500 0 115 71-123 8634 0.00869 30

The following samples were analyzed in this batch:

1807891-01A	1807891-02A	1807891-03A
1807891-04A	1807891-05A	1807891-06A
1807891-07A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Caerus Oil and Gas LLC
 Work Order: 1807891
 Project: Riley 1

QC BATCH REPORT

Batch ID: 121423 Instrument ID VMS8 Method: SW8260C

MBLK Sample ID: MBLK-121423-121423				Units: µg/Kg-dry			Analysis Date: 7/17/2018 12:14 PM			
Client ID:		Run ID: VMS8_180717A		SeqNo: 5150473		Prep Date: 7/17/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	30								
Ethylbenzene	U	30								
m,p-Xylene	U	60								
o-Xylene	U	30								
Toluene	U	30								
Xylenes, Total	U	90								
Surr: 1,2-Dichloroethane-d4	1039	0	1000	0	104	70-130	0			
Surr: 4-Bromofluorobenzene	982.5	0	1000	0	98.2	70-130	0			
Surr: Dibromofluoromethane	979.5	0	1000	0	98	70-130	0			
Surr: Toluene-d8	983.5	0	1000	0	98.4	70-130	0			

LCS Sample ID: LCS-121423-121423				Units: µg/Kg-dry			Analysis Date: 7/17/2018 11:26 AM			
Client ID:		Run ID: VMS8_180717A		SeqNo: 5150471		Prep Date: 7/17/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	995.5	30	1000	0	99.6	75-125	0			
Ethylbenzene	989.5	30	1000	0	99	75-125	0			
m,p-Xylene	1966	60	2000	0	98.3	80-125	0			
o-Xylene	998	30	1000	0	99.8	75-125	0			
Toluene	997	30	1000	0	99.7	70-125	0			
Xylenes, Total	2964	90	3000	0	98.8	75-125	0			
Surr: 1,2-Dichloroethane-d4	1068	0	1000	0	107	70-130	0			
Surr: 4-Bromofluorobenzene	1019	0	1000	0	102	70-130	0			
Surr: Dibromofluoromethane	1052	0	1000	0	105	70-130	0			
Surr: Toluene-d8	945	0	1000	0	94.5	70-130	0			

MS Sample ID: 1807891-02A MS				Units: µg/Kg-dry			Analysis Date: 7/17/2018 06:17 PM			
Client ID: 20180716-Riley 1-W Wall (N) (28')		Run ID: VMS8_180717A		SeqNo: 5151513		Prep Date: 7/17/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	962.5	30	1000	0	96.2	75-125	0			
Ethylbenzene	939.5	30	1000	0	94	75-125	0			
m,p-Xylene	1886	60	2000	0	94.3	80-125	0			
o-Xylene	958.5	30	1000	0	95.8	75-125	0			
Toluene	962.5	30	1000	0	96.2	70-125	0			
Xylenes, Total	2844	90	3000	0	94.8	75-125	0			
Surr: 1,2-Dichloroethane-d4	962.5	0	1000	0	96.2	70-130	0			
Surr: 4-Bromofluorobenzene	993	0	1000	0	99.3	70-130	0			
Surr: Dibromofluoromethane	988	0	1000	0	98.8	70-130	0			
Surr: Toluene-d8	1002	0	1000	0	100	70-130	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Caerus Oil and Gas LLC
Work Order: 1807891
Project: Riley 1

QC BATCH REPORT

Batch ID: **121423** Instrument ID **VMS8** Method: **SW8260C**

MSD				Sample ID: 1807891-02A MSD			Units: µg/Kg-dry		Analysis Date: 7/17/2018 06:34 PM		
Client ID: 20180716-Riley 1-W Wall (N) (28')				Run ID: VMS8_180717A			SeqNo: 5151515		Prep Date: 7/17/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1030	30	1000	0	103	75-125	962.5	6.73	30		
Ethylbenzene	1033	30	1000	0	103	75-125	939.5	9.48	30		
m,p-Xylene	2046	60	2000	0	102	80-125	1886	8.14	30		
o-Xylene	1036	30	1000	0	104	75-125	958.5	7.82	30		
Toluene	1044	30	1000	0	104	70-125	962.5	8.17	30		
Xylenes, Total	3082	90	3000	0	103	75-125	2844	8.03	30		
Surr: 1,2-Dichloroethane-d4	934.5	0	1000	0	93.4	70-130	962.5	2.95	30		
Surr: 4-Bromofluorobenzene	1013	0	1000	0	101	70-130	993	1.99	30		
Surr: Dibromofluoromethane	975.5	0	1000	0	97.6	70-130	988	1.27	30		
Surr: Toluene-d8	1004	0	1000	0	100	70-130	1002	0.0997	30		

The following samples were analyzed in this batch:

1807891-01A	1807891-02A	1807891-03A
1807891-04A	1807891-05A	1807891-06A
1807891-07A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Caerus Oil and Gas LLC
Work Order: 1807891
Project: Riley 1

QC BATCH REPORT

Batch ID: **R240377** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R240377				Units: % of sample		Analysis Date: 7/17/2018 01:25 PM		
Client ID:		Run ID: MOIST_180717B		SeqNo: 5151953		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture U 0.050

LCS		Sample ID: LCS-R240377				Units: % of sample		Analysis Date: 7/17/2018 01:25 PM		
Client ID:		Run ID: MOIST_180717B		SeqNo: 5151951		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP		Sample ID: 1807632-07A DUP				Units: % of sample		Analysis Date: 7/17/2018 01:25 PM		
Client ID:		Run ID: MOIST_180717B		SeqNo: 5151915		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 2.26 0.050 0 0 0 0-0 2.36 4.33 10

The following samples were analyzed in this batch:

1807891-01A	1807891-02A	1807891-03A
1807891-04A	1807891-05A	1807891-06A
1807891-07A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



ALS Laboratory Group

Chain-of-Custody

Form 2828

WORKORDER

1807891

PROJECT NAME	Riley 1	SAMPLER	Blair K Rollins	DATE	7/16/18	PAGE	1 of 1
PROJECT No.		SITE ID	Riley 1	TURNAROUND	SAME DAY	DISPOSAL	By Lab or Return to Client
COMPANY NAME	Caerus Piceance, LLC	EDD FORMAT					
SEND REPORT TO	Jake Janicek	PURCHASE ORDER					
ADDRESS	143 Diamond Ave	BILL TO COMPANY	Caerus Piceance, LLC				
CITY/STATE/ZIP	Parachute Co 81635	INVOICE ATTN TO	Jake Janicek				
PHONE	970-285-9608	ADDRESS	143 Diamond Ave				
FAX		CITY/STATE/ZIP	Parachute CO 81635				
E-MAIL	jjanicek@caerusoilandgas.com	PHONE	970-285-9608				
		FAX					
		E-MAIL	jjanicek@caerusoilandgas.com				
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
1	20180716-Riley 1-SW bottom(30')		7/16/18	1300	2		
2	20180716-Riley 1-W well(N)(28')			1310	2		
3	20180716-Riley 1-N well(28')			1320	2		
4	20180716-Riley 1-S bottom(30')			1330	2		
5	20180716-Riley 1-S well(8')			1340	2		
6	20180716-Riley 1-w well brown streak(20')			1400	2		
7	20180716-Riley 1-Spoil			1410	2		

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

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)
SPR 4.2°C	<input checked="" type="checkbox"/> LEVEL II (Standard QC)
	<input type="checkbox"/> LEVEL III (Std QC + forms)
	<input type="checkbox"/> LEVEL IV (Std QC + forms + raw data)
	<input type="checkbox"/>
Preservative Key:	1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

SIGNATURE	PRINTED NAME	DATE	TIME
Blair K Rollins	Blair K Rollins	7/16/18	1500
W. Martinez	W. Martinez	7-16-18	1500
W. Martinez	W. Martinez	7-16-18	1830
Kerry Wierenga	Kerry Wierenga	7/17/18	0900

Sample Receipt Checklist

Client Name: **CAERUS**

Date/Time Received: **17-Jul-18 09:00**

Work Order: **1807891**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

17-Jul-18
Date

Reviewed by: Chad Whelton
eSignature

18-Jul-18
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2/4.2 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>7/17/2018 10:52:00 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: