



01-Jun-2020

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

Re: **E34-496 Frac Tank Release**

Work Order: **20051848**

Dear Jake,

ALS Environmental received 5 samples on 23-May-2020 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 31.

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", is written over a faint, larger version of the same signature.

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

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Client: Caerus Oil and Gas LLC
Project: E34-496 Frac Tank Release
Work Order: 20051848

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>
20051848-01	20200520-E34-496 (SS01) @ 6-9"	Soil		5/20/2020 11:30	5/23/2020 09:00	<input type="checkbox"/>
20051848-02	20200520-E34-496 (SS02) @ 6-9"	Soil		5/20/2020 11:40	5/23/2020 09:00	<input type="checkbox"/>
20051848-03	20200520-E34-496 (SS03) @ 6-9"	Soil		5/20/2020 11:50	5/23/2020 09:00	<input type="checkbox"/>
20051848-04	20200520-E34-496 (SS04) @ 6-9"	Soil		5/20/2020 12:00	5/23/2020 09:00	<input type="checkbox"/>
20051848-05	20200520-E34-496 (POR) @ 6-9"	Soil		5/20/2020 12:10	5/23/2020 09:00	<input type="checkbox"/>

Client: Caerus Oil and Gas LLC
Project: E34-496 Frac Tank Release
Work Order: 20051848

Case Narrative

Batch 156611, Method ICP_6020_S, Sample 20051848-05A MS/MSD: The MS/MSD recoveries were outside of the control limits for Barium and Zinc; however, the results in the parent sample are greater than 4x the spike amount. No qualification is required.

Batch 156611, Method ICP_6020_S, Sample 20051848-05A MS: The MS recovery was outside of the control limit for Copper. However, the MSD recovery and the RPD between the MS and MSD was in control. No qualification is required.

Batch 156611, Method ICP_6020_S, Sample 20051848-05A MSD: The MSD recoveries were outside of the control limits for Arsenic and Nickel. However, the MS recoveries and the RPDs between the MS and MSD were in control. No qualification is required.

<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
°C	Degrees Celcius
mg/Kg	Milligrams per Kilogram
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	

s.u. Standard Units

ALS Group, USA

Date: 01-Jun-20

Client: Caerus Oil and Gas LLC
Project: E34-496 Frac Tank Release
Sample ID: 20200520-E34-496 (SS01) @ 6-9"
Collection Date: 5/20/2020 11:30 AM

Work Order: 20051848
Lab ID: 20051848-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW3550 / 5/27/20		Analyst: JZB
DRO (C10-C28)	68		17	58	mg/Kg-dry	5	5/29/2020 11:28
Surr: 4-Terphenyl-d14	59.2			33-111	%REC	5	5/29/2020 11:28
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 5/27/20		Analyst: JZB
GRO (C6-C10)	U		3.1	7.3	mg/Kg	1	5/30/2020 03:49
Surr: Toluene-d8	96.2			71-123	%REC	1	5/30/2020 03:49
MERCURY BY CVAA							
			Method: SW7471B		Prep: SW7471 / 5/28/20		Analyst: MAC
Mercury	0.087		0.015	0.022	mg/Kg-dry	1	5/28/2020 14:16
METALS BY ICP-MS							
			Method: SW6020B		Prep: SW3050B / 5/28/20		Analyst: STP
Arsenic	4.8		0.052	0.44	mg/Kg-dry	1	5/28/2020 19:52
Barium	4,600		40	44	mg/Kg-dry	100	5/29/2020 12:45
Cadmium	0.17		0.026	0.17	mg/Kg-dry	1	5/28/2020 19:52
Chromium	10		0.19	0.44	mg/Kg-dry	1	5/28/2020 19:52
Copper	10		0.44	0.44	mg/Kg-dry	1	5/28/2020 19:52
Lead	11		0.21	0.44	mg/Kg-dry	1	5/28/2020 19:52
Nickel	8.5		0.23	0.44	mg/Kg-dry	1	5/28/2020 19:52
Selenium	U		0.40	0.44	mg/Kg-dry	1	5/28/2020 19:52
Silver	U		0.058	0.44	mg/Kg-dry	1	5/28/2020 19:52
Zinc	31		0.86	0.87	mg/Kg-dry	1	5/28/2020 19:52
SOLUBLE CATIONS FOR SAR							
			Method: SW6020B		Prep: USDA Method 20B / 5/29/20		Analyst: STP
Calcium	19		2.5	5.0	mg/L	10	5/29/2020 13:22
Magnesium	2.3		0.50	2.0	mg/L	10	5/29/2020 13:22
Sodium	500		0.45	2.0	mg/L	10	5/29/2020 13:22
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/29/20		Analyst: STP
Sodium Adsorption Ratio	29		0.010	0.010	none	1	5/29/2020
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)							
			Method: SW8270E		Prep: SW3546 / 5/27/20		Analyst: EEW
Acenaphthene	U		0.00099	0.0051	mg/Kg-dry	1	5/27/2020 22:37
Anthracene	U		0.0017	0.0051	mg/Kg-dry	1	5/27/2020 22:37
Benzo(a)anthracene	U		0.0021	0.0051	mg/Kg-dry	1	5/27/2020 22:37
Benzo(a)pyrene	U		0.0014	0.0051	mg/Kg-dry	1	5/27/2020 22:37
Benzo(b)fluoranthene	U		0.0012	0.0051	mg/Kg-dry	1	5/27/2020 22:37
Benzo(k)fluoranthene	U		0.0015	0.0051	mg/Kg-dry	1	5/27/2020 22:37
Chrysene	U		0.0010	0.0051	mg/Kg-dry	1	5/27/2020 22:37
Dibenzo(a,h)anthracene	U		0.0012	0.0051	mg/Kg-dry	1	5/27/2020 22:37
Fluoranthene	U		0.00094	0.0051	mg/Kg-dry	1	5/27/2020 22:37

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

ALS Group, USA

Date: 01-Jun-20

Client: Caerus Oil and Gas LLC
Project: E34-496 Frac Tank Release
Sample ID: 20200520-E34-496 (SS01) @ 6-9"
Collection Date: 5/20/2020 11:30 AM

Work Order: 20051848
Lab ID: 20051848-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene		U	0.0017	0.0051	mg/Kg-dry	1	5/27/2020 22:37
Indeno(1,2,3-cd)pyrene		U	0.0018	0.0051	mg/Kg-dry	1	5/27/2020 22:37
Naphthalene	0.0070		0.0022	0.0051	mg/Kg-dry	1	5/27/2020 22:37
Pyrene	0.0096		0.00084	0.0051	mg/Kg-dry	1	5/27/2020 22:37
Surr: 2-Fluorobiphenyl	117			20-140	%REC	1	5/27/2020 22:37
Surr: 4-Terphenyl-d14	96.0			22-172	%REC	1	5/27/2020 22:37
Surr: Nitrobenzene-d5	103			28-140	%REC	1	5/27/2020 22:37
VOLATILE ORGANIC COMPOUNDS			Method: SW8260C		Prep: SW5035 / 5/27/20		Analyst: SJB
Benzene		U	0.0075	0.044	mg/Kg-dry	1	5/28/2020 18:21
Ethylbenzene		U	0.0093	0.044	mg/Kg-dry	1	5/28/2020 18:21
m,p-Xylene		U	0.059	0.088	mg/Kg-dry	1	5/28/2020 18:21
o-Xylene		U	0.017	0.044	mg/Kg-dry	1	5/28/2020 18:21
Toluene	0.021	J	0.012	0.044	mg/Kg-dry	1	5/28/2020 18:21
Xylenes, Total		U	0.059	0.13	mg/Kg-dry	1	5/28/2020 18:21
Surr: 1,2-Dichloroethane-d4	98.8			70-130	%REC	1	5/28/2020 18:21
Surr: 4-Bromofluorobenzene	105			70-130	%REC	1	5/28/2020 18:21
Surr: Dibromofluoromethane	89.7			70-130	%REC	1	5/28/2020 18:21
Surr: Toluene-d8	89.7			70-130	%REC	1	5/28/2020 18:21
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/29/20		Analyst: QTN
Electrical Conductivity @ Saturation	2.6		0.011	0.10	mmhos/cm @25°	20	5/29/2020 15:47
CHROMIUM, TRIVALENT			Method: CALCULATION				Analyst: JB
Chromium, Trivalent	10		1.0	1.2	mg/Kg-dry	1	5/29/2020 12:40
CHROMIUM, HEXAVALENT			Method: SW7196A		Prep: SW3060A / 5/28/20		Analyst: KTP
Chromium, Hexavalent		U	1.0	1.2	mg/Kg-dry	1	5/29/2020 11:30
MOISTURE			Method: SW3550C				Analyst: KTP
Moisture	19		0.10	0.10	% of sample	1	5/27/2020 10:14
PH			Method: SW9045D		Prep: EXTRACT / 5/27/20		Analyst: QTN
pH	8.95		0.10	0.100	s.u.	1	5/28/2020 13:43
Temperature	20.8		0.10	0.100	°C	1	5/28/2020 13:43

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

ALS Group, USA

Date: 01-Jun-20

Client: Caerus Oil and Gas LLC
Project: E34-496 Frac Tank Release
Sample ID: 20200520-E34-496 (SS02) @ 6-9"
Collection Date: 5/20/2020 11:40 AM

Work Order: 20051848
Lab ID: 20051848-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
				Method: SW8015D		Prep: SW3550 / 5/29/20	Analyst: JZB
DRO (C10-C28)	23		3.1	11	mg/Kg-dry	1	5/31/2020 08:07
Surr: 4-Terphenyl-d14	93.0			33-111	%REC	1	5/31/2020 08:07
GASOLINE RANGE ORGANICS BY GC-FID							
				Method: SW8015D		Prep: SW5035 / 5/27/20	Analyst: JZB
GRO (C6-C10)	5.1	J	2.7	6.4	mg/Kg	1	5/30/2020 03:26
Surr: Toluene-d8	93.9			71-123	%REC	1	5/30/2020 03:26
MERCURY BY CVAA							
				Method: SW7471B		Prep: SW7471 / 5/28/20	Analyst: MAC
Mercury	0.047		0.012	0.018	mg/Kg-dry	1	5/28/2020 14:18
METALS BY ICP-MS							
				Method: SW6020B		Prep: SW3050B / 5/28/20	Analyst: STP
Arsenic	3.6		0.047	0.39	mg/Kg-dry	1	5/28/2020 19:54
Barium	1,200		36	39	mg/Kg-dry	100	5/29/2020 12:47
Cadmium	0.18		0.024	0.16	mg/Kg-dry	1	5/28/2020 19:54
Chromium	9.6		0.17	0.39	mg/Kg-dry	1	5/28/2020 19:54
Copper	8.6		0.39	0.39	mg/Kg-dry	1	5/28/2020 19:54
Lead	7.2		0.19	0.39	mg/Kg-dry	1	5/28/2020 19:54
Nickel	7.2		0.20	0.39	mg/Kg-dry	1	5/28/2020 19:54
Selenium	U		0.36	0.39	mg/Kg-dry	1	5/28/2020 19:54
Silver	U		0.052	0.39	mg/Kg-dry	1	5/28/2020 19:54
Zinc	26		0.77	0.79	mg/Kg-dry	1	5/28/2020 19:54
SOLUBLE CATIONS FOR SAR							
				Method: SW6020B		Prep: USDA Method 20B / 5/29/20	Analyst: STP
Calcium	34		2.5	5.0	mg/L	10	5/29/2020 13:24
Magnesium	3.3		0.50	2.0	mg/L	10	5/29/2020 13:24
Sodium	600		0.45	2.0	mg/L	10	5/29/2020 13:24
SODIUM ADSORPTION RATIO							
				Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/29/20	Analyst: STP
Sodium Adsorption Ratio	26		0.010	0.010	none	1	5/29/2020
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)							
				Method: SW8270E		Prep: SW3546 / 5/27/20	Analyst: EEW
Acenaphthene	U		0.00087	0.0045	mg/Kg-dry	1	5/27/2020 22:53
Anthracene	U		0.0015	0.0045	mg/Kg-dry	1	5/27/2020 22:53
Benzo(a)anthracene	U		0.0019	0.0045	mg/Kg-dry	1	5/27/2020 22:53
Benzo(a)pyrene	U		0.0012	0.0045	mg/Kg-dry	1	5/27/2020 22:53
Benzo(b)fluoranthene	U		0.0011	0.0045	mg/Kg-dry	1	5/27/2020 22:53
Benzo(k)fluoranthene	U		0.0013	0.0045	mg/Kg-dry	1	5/27/2020 22:53
Chrysene	U		0.00093	0.0045	mg/Kg-dry	1	5/27/2020 22:53
Dibenzo(a,h)anthracene	U		0.0011	0.0045	mg/Kg-dry	1	5/27/2020 22:53
Fluoranthene	U		0.00083	0.0045	mg/Kg-dry	1	5/27/2020 22:53

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

ALS Group, USA

Date: 01-Jun-20

Client: Caerus Oil and Gas LLC
Project: E34-496 Frac Tank Release
Sample ID: 20200520-E34-496 (SS02) @ 6-9"
Collection Date: 5/20/2020 11:40 AM

Work Order: 20051848
Lab ID: 20051848-02
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene		U	0.0015	0.0045	mg/Kg-dry	1	5/27/2020 22:53
Indeno(1,2,3-cd)pyrene		U	0.0016	0.0045	mg/Kg-dry	1	5/27/2020 22:53
Naphthalene		U	0.0020	0.0045	mg/Kg-dry	1	5/27/2020 22:53
Pyrene		U	0.00074	0.0045	mg/Kg-dry	1	5/27/2020 22:53
Surr: 2-Fluorobiphenyl	111			20-140	%REC	1	5/27/2020 22:53
Surr: 4-Terphenyl-d14	94.7			22-172	%REC	1	5/27/2020 22:53
Surr: Nitrobenzene-d5	101			28-140	%REC	1	5/27/2020 22:53
VOLATILE ORGANIC COMPOUNDS			Method: SW8260C		Prep: SW5035 / 5/27/20		Analyst: SJB
Benzene		U	0.0066	0.038	mg/Kg-dry	1	5/28/2020 18:39
Ethylbenzene		U	0.0081	0.038	mg/Kg-dry	1	5/28/2020 18:39
m,p-Xylene		U	0.051	0.077	mg/Kg-dry	1	5/28/2020 18:39
o-Xylene		U	0.015	0.038	mg/Kg-dry	1	5/28/2020 18:39
Toluene		U	0.010	0.038	mg/Kg-dry	1	5/28/2020 18:39
Xylenes, Total		U	0.051	0.12	mg/Kg-dry	1	5/28/2020 18:39
Surr: 1,2-Dichloroethane-d4	99.4			70-130	%REC	1	5/28/2020 18:39
Surr: 4-Bromofluorobenzene	102			70-130	%REC	1	5/28/2020 18:39
Surr: Dibromofluoromethane	90.2			70-130	%REC	1	5/28/2020 18:39
Surr: Toluene-d8	86.5			70-130	%REC	1	5/28/2020 18:39
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/29/20		Analyst: QTN
Electrical Conductivity @ Saturation	3.1		0.011	0.10	mmhos/cm @25°	20	5/29/2020 15:47
CHROMIUM, TRIVALENT			Method: CALCULATION				Analyst: JB
Chromium, Trivalent	9.6		0.94	1.1	mg/Kg-dry	1	5/29/2020 12:40
CHROMIUM, HEXAVALENT			Method: SW7196A		Prep: SW3060A / 5/28/20		Analyst: KTP
Chromium, Hexavalent		U	0.94	1.1	mg/Kg-dry	1	5/29/2020 11:30
MOISTURE			Method: SW3550C				Analyst: KTP
Moisture	9.8		0.10	0.10	% of sample	1	5/27/2020 10:14
PH			Method: SW9045D		Prep: EXTRACT / 5/27/20		Analyst: QTN
pH	8.38		0.10	0.100	s.u.	1	5/28/2020 13:43
Temperature	20.7		0.10	0.100	°C	1	5/28/2020 13:43

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

ALS Group, USA

Date: 01-Jun-20

Client: Caerus Oil and Gas LLC
Project: E34-496 Frac Tank Release
Sample ID: 20200520-E34-496 (SS03) @ 6-9"
Collection Date: 5/20/2020 11:50 AM

Work Order: 20051848
Lab ID: 20051848-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
				Method: SW8015D		Prep: SW3550 / 5/27/20	Analyst: JZB
DRO (C10-C28)	45		3.4	12	mg/Kg-dry	1	5/29/2020 08:51
Surr: 4-Terphenyl-d14	70.9			33-111	%REC	1	5/29/2020 08:51
GASOLINE RANGE ORGANICS BY GC-FID							
				Method: SW8015D		Prep: SW5035 / 5/27/20	Analyst: JZB
GRO (C6-C10)	3.5	J	3.0	7.2	mg/Kg	1	5/30/2020 03:04
Surr: Toluene-d8	92.4			71-123	%REC	1	5/30/2020 03:04
MERCURY BY CVAA							
				Method: SW7471B		Prep: SW7471 / 5/28/20	Analyst: MAC
Mercury	0.087		0.013	0.020	mg/Kg-dry	1	5/28/2020 14:20
METALS BY ICP-MS							
				Method: SW6020B		Prep: SW3050B / 5/28/20	Analyst: STP
Arsenic	7.5		0.048	0.40	mg/Kg-dry	1	5/28/2020 19:56
Barium	3,700		37	40	mg/Kg-dry	100	5/29/2020 12:48
Cadmium	0.18		0.024	0.16	mg/Kg-dry	1	5/28/2020 19:56
Chromium	17		0.18	0.40	mg/Kg-dry	1	5/28/2020 19:56
Copper	15		0.40	0.40	mg/Kg-dry	1	5/28/2020 19:56
Lead	15		0.19	0.40	mg/Kg-dry	1	5/28/2020 19:56
Nickel	9.5		0.21	0.40	mg/Kg-dry	1	5/28/2020 19:56
Selenium	U		0.37	0.40	mg/Kg-dry	1	5/28/2020 19:56
Silver	0.058	J	0.053	0.40	mg/Kg-dry	1	5/28/2020 19:56
Zinc	37		0.78	0.80	mg/Kg-dry	1	5/28/2020 19:56
SOLUBLE CATIONS FOR SAR							
				Method: SW6020B		Prep: USDA Method 20B / 5/29/20	Analyst: STP
Calcium	34		2.5	5.0	mg/L	10	5/29/2020 13:25
Magnesium	4.2		0.50	2.0	mg/L	10	5/29/2020 13:25
Sodium	370		0.45	2.0	mg/L	10	5/29/2020 13:25
SODIUM ADSORPTION RATIO							
				Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/29/20	Analyst: STP
Sodium Adsorption Ratio	16		0.010	0.010	none	1	5/29/2020
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)							
				Method: SW8270E		Prep: SW3546 / 5/27/20	Analyst: EEW
Acenaphthene	U		0.00096	0.0049	mg/Kg-dry	1	5/27/2020 23:08
Anthracene	U		0.0017	0.0049	mg/Kg-dry	1	5/27/2020 23:08
Benzo(a)anthracene	U		0.0020	0.0049	mg/Kg-dry	1	5/27/2020 23:08
Benzo(a)pyrene	U		0.0014	0.0049	mg/Kg-dry	1	5/27/2020 23:08
Benzo(b)fluoranthene	U		0.0012	0.0049	mg/Kg-dry	1	5/27/2020 23:08
Benzo(k)fluoranthene	U		0.0015	0.0049	mg/Kg-dry	1	5/27/2020 23:08
Chrysene	U		0.0010	0.0049	mg/Kg-dry	1	5/27/2020 23:08
Dibenzo(a,h)anthracene	U		0.0012	0.0049	mg/Kg-dry	1	5/27/2020 23:08
Fluoranthene	0.0031	J	0.00091	0.0049	mg/Kg-dry	1	5/27/2020 23:08

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

ALS Group, USA

Date: 01-Jun-20

Client: Caerus Oil and Gas LLC
Project: E34-496 Frac Tank Release
Sample ID: 20200520-E34-496 (SS03) @ 6-9"
Collection Date: 5/20/2020 11:50 AM

Work Order: 20051848
Lab ID: 20051848-03
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene		U	0.0016	0.0049	mg/Kg-dry	1	5/27/2020 23:08
Indeno(1,2,3-cd)pyrene		U	0.0018	0.0049	mg/Kg-dry	1	5/27/2020 23:08
Naphthalene	0.016		0.0022	0.0049	mg/Kg-dry	1	5/27/2020 23:08
Pyrene	0.014		0.00082	0.0049	mg/Kg-dry	1	5/27/2020 23:08
Surr: 2-Fluorobiphenyl	114			20-140	%REC	1	5/27/2020 23:08
Surr: 4-Terphenyl-d14	94.2			22-172	%REC	1	5/27/2020 23:08
Surr: Nitrobenzene-d5	102			28-140	%REC	1	5/27/2020 23:08
VOLATILE ORGANIC COMPOUNDS			Method: SW8260C		Prep: SW5035 / 5/27/20		Analyst: SJB
Benzene		U	0.0074	0.043	mg/Kg-dry	1	5/28/2020 18:56
Ethylbenzene		U	0.0091	0.043	mg/Kg-dry	1	5/28/2020 18:56
m,p-Xylene		U	0.058	0.086	mg/Kg-dry	1	5/28/2020 18:56
o-Xylene		U	0.017	0.043	mg/Kg-dry	1	5/28/2020 18:56
Toluene		U	0.012	0.043	mg/Kg-dry	1	5/28/2020 18:56
Xylenes, Total		U	0.058	0.13	mg/Kg-dry	1	5/28/2020 18:56
Surr: 1,2-Dichloroethane-d4	96.9			70-130	%REC	1	5/28/2020 18:56
Surr: 4-Bromofluorobenzene	102			70-130	%REC	1	5/28/2020 18:56
Surr: Dibromofluoromethane	87.6			70-130	%REC	1	5/28/2020 18:56
Surr: Toluene-d8	90.8			70-130	%REC	1	5/28/2020 18:56
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/29/20		Analyst: QTN
Electrical Conductivity @ Saturation	2.0		0.011	0.10	mmhos/cm @25°	20	5/29/2020 15:47
CHROMIUM, TRIVALENT			Method: CALCULATION				Analyst: JB
Chromium, Trivalent	17		1.0	1.2	mg/Kg-dry	1	5/29/2020 12:40
CHROMIUM, HEXAVALENT			Method: SW7196A		Prep: SW3060A / 5/28/20		Analyst: KTP
Chromium, Hexavalent		U	1.0	1.2	mg/Kg-dry	1	5/29/2020 11:30
MOISTURE			Method: SW3550C				Analyst: KTP
Moisture	17		0.10	0.10	% of sample	1	5/27/2020 10:14
PH			Method: SW9045D		Prep: EXTRACT / 5/27/20		Analyst: QTN
pH	8.10		0.10	0.100	s.u.	1	5/28/2020 13:43
Temperature	20.8		0.10	0.100	°C	1	5/28/2020 13:43

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

ALS Group, USA

Date: 01-Jun-20

Client: Caerus Oil and Gas LLC
Project: E34-496 Frac Tank Release
Sample ID: 20200520-E34-496 (SS04) @ 6-9"
Collection Date: 5/20/2020 12:00 PM

Work Order: 20051848
Lab ID: 20051848-04
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
				Method: SW8015D		Prep: SW3550 / 5/27/20	Analyst: JZB
DRO (C10-C28)	76		3.3	12	mg/Kg-dry	1	5/29/2020 09:30
Surr: 4-Terphenyl-d14	85.3			33-111	%REC	1	5/29/2020 09:30
GASOLINE RANGE ORGANICS BY GC-FID							
				Method: SW8015D		Prep: SW5035 / 5/27/20	Analyst: JZB
GRO (C6-C10)	U		2.8	6.7	mg/Kg	1	5/30/2020 02:42
Surr: Toluene-d8	94.1			71-123	%REC	1	5/30/2020 02:42
MERCURY BY CVAA							
				Method: SW7471B		Prep: SW7471 / 5/28/20	Analyst: MAC
Mercury	0.072		0.015	0.022	mg/Kg-dry	1	5/28/2020 14:22
METALS BY ICP-MS							
				Method: SW6020B		Prep: SW3050B / 5/28/20	Analyst: STP
Arsenic	5.2		0.051	0.43	mg/Kg-dry	1	5/28/2020 20:03
Barium	3,600		39	43	mg/Kg-dry	100	5/29/2020 12:53
Cadmium	0.18		0.026	0.17	mg/Kg-dry	1	5/28/2020 20:03
Chromium	14		0.19	0.43	mg/Kg-dry	1	5/28/2020 20:03
Copper	13		0.43	0.43	mg/Kg-dry	1	5/28/2020 20:03
Lead	15		0.20	0.43	mg/Kg-dry	1	5/28/2020 20:03
Nickel	8.1		0.22	0.43	mg/Kg-dry	1	5/28/2020 20:03
Selenium	U		0.39	0.43	mg/Kg-dry	1	5/28/2020 20:03
Silver	U		0.056	0.43	mg/Kg-dry	1	5/28/2020 20:03
Zinc	34		0.84	0.85	mg/Kg-dry	1	5/28/2020 20:03
SOLUBLE CATIONS FOR SAR							
				Method: SW6020B		Prep: USDA Method 20B / 5/29/20	Analyst: STP
Calcium	23		2.5	5.0	mg/L	10	5/29/2020 13:27
Magnesium	3.5		0.50	2.0	mg/L	10	5/29/2020 13:27
Sodium	300		0.45	2.0	mg/L	10	5/29/2020 13:27
SODIUM ADSORPTION RATIO							
				Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/29/20	Analyst: STP
Sodium Adsorption Ratio	16		0.010	0.010	none	1	5/29/2020
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)							
				Method: SW8270E		Prep: SW3546 / 5/27/20	Analyst: EEW
Acenaphthene	U		0.00094	0.0048	mg/Kg-dry	1	5/27/2020 23:23
Anthracene	U		0.0016	0.0048	mg/Kg-dry	1	5/27/2020 23:23
Benzo(a)anthracene	U		0.0020	0.0048	mg/Kg-dry	1	5/27/2020 23:23
Benzo(a)pyrene	U		0.0013	0.0048	mg/Kg-dry	1	5/27/2020 23:23
Benzo(b)fluoranthene	U		0.0012	0.0048	mg/Kg-dry	1	5/27/2020 23:23
Benzo(k)fluoranthene	U		0.0014	0.0048	mg/Kg-dry	1	5/27/2020 23:23
Chrysene	U		0.0010	0.0048	mg/Kg-dry	1	5/27/2020 23:23
Dibenzo(a,h)anthracene	U		0.0011	0.0048	mg/Kg-dry	1	5/27/2020 23:23
Fluoranthene	U		0.00089	0.0048	mg/Kg-dry	1	5/27/2020 23:23

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

ALS Group, USA

Date: 01-Jun-20

Client: Caerus Oil and Gas LLC
Project: E34-496 Frac Tank Release
Sample ID: 20200520-E34-496 (SS04) @ 6-9"
Collection Date: 5/20/2020 12:00 PM

Work Order: 20051848
Lab ID: 20051848-04
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene		U	0.0016	0.0048	mg/Kg-dry	1	5/27/2020 23:23
Indeno(1,2,3-cd)pyrene		U	0.0017	0.0048	mg/Kg-dry	1	5/27/2020 23:23
Naphthalene	0.0051		0.0021	0.0048	mg/Kg-dry	1	5/27/2020 23:23
Pyrene	0.0089		0.00080	0.0048	mg/Kg-dry	1	5/27/2020 23:23
Surr: 2-Fluorobiphenyl	111			20-140	%REC	1	5/27/2020 23:23
Surr: 4-Terphenyl-d14	96.3			22-172	%REC	1	5/27/2020 23:23
Surr: Nitrobenzene-d5	102			28-140	%REC	1	5/27/2020 23:23
VOLATILE ORGANIC COMPOUNDS			Method: SW8260C		Prep: SW5035 / 5/27/20		Analyst: SJB
Benzene		U	0.0069	0.040	mg/Kg-dry	1	5/28/2020 19:14
Ethylbenzene		U	0.0085	0.040	mg/Kg-dry	1	5/28/2020 19:14
m,p-Xylene		U	0.053	0.080	mg/Kg-dry	1	5/28/2020 19:14
o-Xylene		U	0.015	0.040	mg/Kg-dry	1	5/28/2020 19:14
Toluene		U	0.011	0.040	mg/Kg-dry	1	5/28/2020 19:14
Xylenes, Total		U	0.053	0.12	mg/Kg-dry	1	5/28/2020 19:14
Surr: 1,2-Dichloroethane-d4	94.4			70-130	%REC	1	5/28/2020 19:14
Surr: 4-Bromofluorobenzene	104			70-130	%REC	1	5/28/2020 19:14
Surr: Dibromofluoromethane	88.7			70-130	%REC	1	5/28/2020 19:14
Surr: Toluene-d8	90.1			70-130	%REC	1	5/28/2020 19:14
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/29/20		Analyst: QTN
Electrical Conductivity @ Saturation	1.6		0.011	0.10	mmhos/cm @25°	20	5/29/2020 15:47
CHROMIUM, TRIVALENT			Method: CALCULATION				Analyst: JB
Chromium, Trivalent	14		0.98	1.2	mg/Kg-dry	1	5/29/2020 12:40
CHROMIUM, HEXAVALENT			Method: SW7196A		Prep: SW3060A / 5/28/20		Analyst: KTP
Chromium, Hexavalent		U	0.96	1.1	mg/Kg-dry	1	5/29/2020 11:30
MOISTURE			Method: SW3550C				Analyst: KTP
Moisture	14		0.10	0.10	% of sample	1	5/27/2020 10:14
PH			Method: SW9045D		Prep: EXTRACT / 5/27/20		Analyst: QTN
pH	9.05		0.10	0.100	s.u.	1	5/28/2020 13:43
Temperature	20.8		0.10	0.100	°C	1	5/28/2020 13:43

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

ALS Group, USA

Date: 01-Jun-20

Client: Caerus Oil and Gas LLC
Project: E34-496 Frac Tank Release
Sample ID: 20200520-E34-496 (POR) @ 6-9"
Collection Date: 5/20/2020 12:10 PM

Work Order: 20051848
Lab ID: 20051848-05
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW3550 / 5/27/20		Analyst: JZB
DRO (C10-C28)	40		3.2	11	mg/Kg-dry	1	5/29/2020 10:09
Surr: 4-Terphenyl-d14	72.3			33-111	%REC	1	5/29/2020 10:09
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D		Prep: SW5035 / 5/27/20		Analyst: JZB
GRO (C6-C10)	U		2.7	6.3	mg/Kg	1	5/30/2020 02:20
Surr: Toluene-d8	95.5			71-123	%REC	1	5/30/2020 02:20
MERCURY BY CVAA							
			Method: SW7471B		Prep: SW7471 / 5/28/20		Analyst: MAC
Mercury	0.071		0.014	0.020	mg/Kg-dry	1	5/28/2020 14:24
METALS BY ICP-MS							
			Method: SW6020B		Prep: SW3050B / 5/28/20		Analyst: STP
Arsenic	4.7		0.045	0.38	mg/Kg-dry	1	5/28/2020 20:04
Barium	1,300		35	38	mg/Kg-dry	100	5/29/2020 12:55
Cadmium	0.21		0.023	0.15	mg/Kg-dry	1	5/28/2020 20:04
Chromium	13		0.17	0.38	mg/Kg-dry	1	5/28/2020 20:04
Copper	10		0.38	0.38	mg/Kg-dry	1	5/28/2020 20:04
Lead	7.6		0.18	0.38	mg/Kg-dry	1	5/28/2020 20:04
Nickel	10		0.20	0.38	mg/Kg-dry	1	5/28/2020 20:04
Selenium	0.37	J	0.35	0.38	mg/Kg-dry	1	5/28/2020 20:04
Silver	U		0.050	0.38	mg/Kg-dry	1	5/28/2020 20:04
Zinc	40		0.74	0.75	mg/Kg-dry	1	5/28/2020 20:04
SOLUBLE CATIONS FOR SAR							
			Method: SW6020B		Prep: USDA Method 20B / 5/29/20		Analyst: STP
Calcium	16		2.5	5.0	mg/L	10	5/29/2020 13:32
Magnesium	3.1		0.50	2.0	mg/L	10	5/29/2020 13:32
Sodium	200		0.45	2.0	mg/L	10	5/29/2020 13:32
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/29/20		Analyst: STP
Sodium Adsorption Ratio	12		0.010	0.010	none	1	5/29/2020
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)							
			Method: SW8270E		Prep: SW3546 / 5/27/20		Analyst: EEW
Acenaphthene	U		0.00092	0.0047	mg/Kg-dry	1	5/27/2020 23:39
Anthracene	U		0.0016	0.0047	mg/Kg-dry	1	5/27/2020 23:39
Benzo(a)anthracene	U		0.0020	0.0047	mg/Kg-dry	1	5/27/2020 23:39
Benzo(a)pyrene	U		0.0013	0.0047	mg/Kg-dry	1	5/27/2020 23:39
Benzo(b)fluoranthene	U		0.0011	0.0047	mg/Kg-dry	1	5/27/2020 23:39
Benzo(k)fluoranthene	U		0.0014	0.0047	mg/Kg-dry	1	5/27/2020 23:39
Chrysene	U		0.00098	0.0047	mg/Kg-dry	1	5/27/2020 23:39
Dibenzo(a,h)anthracene	U		0.0011	0.0047	mg/Kg-dry	1	5/27/2020 23:39
Fluoranthene	U		0.00087	0.0047	mg/Kg-dry	1	5/27/2020 23:39

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

ALS Group, USA

Date: 01-Jun-20

Client: Caerus Oil and Gas LLC
Project: E34-496 Frac Tank Release
Sample ID: 20200520-E34-496 (POR) @ 6-9"
Collection Date: 5/20/2020 12:10 PM

Work Order: 20051848
Lab ID: 20051848-05
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	U		0.0016	0.0047	mg/Kg-dry	1	5/27/2020 23:39
Indeno(1,2,3-cd)pyrene	U		0.0017	0.0047	mg/Kg-dry	1	5/27/2020 23:39
Naphthalene	U		0.0021	0.0047	mg/Kg-dry	1	5/27/2020 23:39
Pyrene	U		0.00078	0.0047	mg/Kg-dry	1	5/27/2020 23:39
Surr: 2-Fluorobiphenyl	112			20-140	%REC	1	5/27/2020 23:39
Surr: 4-Terphenyl-d14	95.9			22-172	%REC	1	5/27/2020 23:39
Surr: Nitrobenzene-d5	102			28-140	%REC	1	5/27/2020 23:39
VOLATILE ORGANIC COMPOUNDS			Method: SW8260C		Prep: SW5035 / 5/27/20		Analyst: SJB
Benzene	U		0.0065	0.038	mg/Kg-dry	1	5/28/2020 19:32
Ethylbenzene	U		0.0080	0.038	mg/Kg-dry	1	5/28/2020 19:32
m,p-Xylene	U		0.051	0.076	mg/Kg-dry	1	5/28/2020 19:32
o-Xylene	U		0.015	0.038	mg/Kg-dry	1	5/28/2020 19:32
Toluene	U		0.010	0.038	mg/Kg-dry	1	5/28/2020 19:32
Xylenes, Total	U		0.051	0.11	mg/Kg-dry	1	5/28/2020 19:32
Surr: 1,2-Dichloroethane-d4	98.8			70-130	%REC	1	5/28/2020 19:32
Surr: 4-Bromofluorobenzene	103			70-130	%REC	1	5/28/2020 19:32
Surr: Dibromofluoromethane	89.3			70-130	%REC	1	5/28/2020 19:32
Surr: Toluene-d8	89.5			70-130	%REC	1	5/28/2020 19:32
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 5/29/20		Analyst: QTN
Electrical Conductivity @ Saturation	0.99		0.011	0.10	mmhos/cm @25°	20	5/29/2020 15:47
CHROMIUM, TRIVALENT			Method: CALCULATION				Analyst: JB
Chromium, Trivalent	13		0.98	1.2	mg/Kg-dry	1	5/29/2020 12:40
CHROMIUM, HEXAVALENT			Method: SW7196A		Prep: SW3060A / 5/28/20		Analyst: KTP
Chromium, Hexavalent	U		0.94	1.1	mg/Kg-dry	1	5/29/2020 11:30
MOISTURE			Method: SW3550C				Analyst: KTP
Moisture	13		0.10	0.10	% of sample	1	5/27/2020 10:14
PH			Method: SW9045D		Prep: EXTRACT / 5/27/20		Analyst: QTN
pH	9.14		0.10	0.100	s.u.	1	5/28/2020 13:43
Temperature	20.8		0.10	0.100	°C	1	5/28/2020 13:43

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

Client: Caerus Oil and Gas LLC
Work Order: 20051848
Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: **156537** Instrument ID **GC8** Method: **SW8015D**

MBLK		Sample ID: DBLKS1-156537-156537				Units: mg/Kg		Analysis Date: 5/29/2020 02:21 AM		
Client ID:		Run ID: GC8_200528A		SeqNo: 6445445		Prep Date: 5/27/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	3.481	10								J
<i>Surr: 4-Terphenyl-d14</i>	2.42	0	3.33	0	72.7	33-111	0			

LCS		Sample ID: DLCSS1-156537-156537				Units: mg/Kg		Analysis Date: 5/29/2020 03:00 AM		
Client ID:		Run ID: GC8_200528A		SeqNo: 6445446		Prep Date: 5/27/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	304.3	10	333	0	91.4	80-121	0			
<i>Surr: 4-Terphenyl-d14</i>	2.528	0	3.33	0	75.9	33-111	0			

MS		Sample ID: 20051847-01A MS				Units: mg/Kg		Analysis Date: 5/29/2020 05:36 AM		
Client ID:		Run ID: GC8_200528A		SeqNo: 6446563		Prep Date: 5/27/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	374.6	9.9	329	70.57	92.4	80-121	0			
<i>Surr: 4-Terphenyl-d14</i>	6.441	0	3.29	0	196	33-111	0			S

MSD		Sample ID: 20051847-01A MSD				Units: mg/Kg		Analysis Date: 5/29/2020 06:15 AM		
Client ID:		Run ID: GC8_200528A		SeqNo: 6446564		Prep Date: 5/27/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	358.1	9.7	324.6	70.57	88.6	80-121	374.6	4.49	30	
<i>Surr: 4-Terphenyl-d14</i>	5.117	0	3.246	0	158	33-111	6.441	22.9	30	S

The following samples were analyzed in this batch:

20051848-01A	20051848-02A	20051848-03A
20051848-04A	20051848-05A	

Client: Caerus Oil and Gas LLC
 Work Order: 20051848
 Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: **156641** Instrument ID **GC8** Method: **SW8015D**

MBLK		Sample ID: DBLKS1-156641-156641				Units: mg/Kg		Analysis Date: 5/31/2020 11:21 AM			
Client ID:		Run ID: GC8_200530A				SeqNo: 6450381		Prep Date: 5/29/2020		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
DRO (C10-C28)	3.571	10								J	
<i>Surr: 4-Terphenyl-d14</i>	3.345	0	3.33	0	100	33-111	0				

LCS		Sample ID: DLCSS1-156641-156641				Units: mg/Kg		Analysis Date: 5/31/2020 12:00 PM			
Client ID:		Run ID: GC8_200530A				SeqNo: 6450382		Prep Date: 5/29/2020		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
DRO (C10-C28)	340.4	10	333	0	102	80-121	0				
<i>Surr: 4-Terphenyl-d14</i>	3.209	0	3.33	0	96.4	33-111	0				

MS		Sample ID: 20051811-16A MS				Units: mg/Kg		Analysis Date: 5/31/2020 12:39 PM			
Client ID:		Run ID: GC8_200530A				SeqNo: 6450383		Prep Date: 5/29/2020		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
DRO (C10-C28)	306.7	9.4	313.9	12.55	93.7	80-121	0				
<i>Surr: 4-Terphenyl-d14</i>	2.458	0	3.139	0	78.3	33-111	0				

MSD		Sample ID: 20051811-16A MSD				Units: mg/Kg		Analysis Date: 5/31/2020 01:18 PM			
Client ID:		Run ID: GC8_200530A				SeqNo: 6450384		Prep Date: 5/29/2020		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
DRO (C10-C28)	265.8	9.7	324.4	12.55	78.1	80-121	306.7	14.3	30	S	
<i>Surr: 4-Terphenyl-d14</i>	2.273	0	3.244	0	70	33-111	2.458	7.83	30		

The following samples were analyzed in this batch:

20051848-02A

Client: Caerus Oil and Gas LLC
Work Order: 20051848
Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: **156719** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-156719-156719				Units: µg/Kg-dry		Analysis Date: 5/30/2020 12:50 AM		
Client ID:		Run ID: GC9_200529B		SeqNo: 6448991		Prep Date: 5/27/2020		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								
<i>Surr: Toluene-d8</i>	<i>4736</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>94.7</i>	<i>71-123</i>	<i>0</i>			

LCS		Sample ID: LCS-156719-156719				Units: µg/Kg-dry		Analysis Date: 5/30/2020 04:55 AM		
Client ID:		Run ID: GC9_200529B		SeqNo: 6449002		Prep Date: 5/27/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	245900	5,000	250000	0	98.4	71-123	0			
<i>Surr: Toluene-d8</i>	<i>4318</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>86.4</i>	<i>71-123</i>	<i>0</i>			

The following samples were analyzed in this batch:

20051848-01A	20051848-02A	20051848-03A
20051848-04A	20051848-05A	

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

Client: Caerus Oil and Gas LLC
 Work Order: 20051848
 Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: **156596** Instrument ID **HG4** Method: **SW7471B**

MBLK	Sample ID: MBLK-156596-156596				Units: mg/Kg			Analysis Date: 5/28/2020 01:51 PM		
Client ID:	Run ID: HG4_200528A			SeqNo: 6443543		Prep Date: 5/28/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury U 0.020

LCS	Sample ID: LCS-156596-156596				Units: mg/Kg			Analysis Date: 5/28/2020 01:53 PM		
Client ID:	Run ID: HG4_200528A			SeqNo: 6443544		Prep Date: 5/28/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.18 0.020 0.1665 0 108 80-120 0

MS	Sample ID: 20051611-01CMS				Units: mg/Kg			Analysis Date: 5/28/2020 01:57 PM		
Client ID:	Run ID: HG4_200528A			SeqNo: 6443546		Prep Date: 5/28/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.3857 0.016 0.1359 0.2291 115 75-125 0 E

MSD	Sample ID: 20051611-01CMSD				Units: mg/Kg			Analysis Date: 5/28/2020 01:59 PM		
Client ID:	Run ID: HG4_200528A			SeqNo: 6443547		Prep Date: 5/28/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.3489 0.016 0.1348 0.2291 88.8 75-125 0.3857 10 35 E

The following samples were analyzed in this batch:

20051848-01A	20051848-02A	20051848-03A
20051848-04A	20051848-05A	

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

Client: Caerus Oil and Gas LLC
 Work Order: 20051848
 Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: **156611** Instrument ID **ICPMS3** Method: **SW6020B**

MBLK		Sample ID: MBLK-156611-156611				Units: mg/Kg		Analysis Date: 5/28/2020 07:42 PM		
Client ID:		Run ID: ICPMS3_200528B		SeqNo: 6445264		Prep Date: 5/28/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.25								
Barium	U	0.25								
Cadmium	U	0.10								
Chromium	U	0.25								
Copper	U	0.25								
Lead	U	0.25								
Nickel	U	0.25								
Selenium	U	0.25								
Silver	U	0.25								
Zinc	U	0.50								

LCS		Sample ID: LCS-156611-156611				Units: mg/Kg		Analysis Date: 5/28/2020 07:43 PM		
Client ID:		Run ID: ICPMS3_200528B		SeqNo: 6445265		Prep Date: 5/28/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.98	0.25	5	0	99.6	80-120	0			
Barium	5.167	0.25	5	0	103	80-120	0			
Cadmium	5.267	0.10	5	0	105	80-120	0			
Chromium	5.1	0.25	5	0	102	80-120	0			
Copper	5.162	0.25	5	0	103	80-120	0			
Lead	5.144	0.25	5	0	103	80-120	0			
Nickel	4.897	0.25	5	0	97.9	80-120	0			
Selenium	4.977	0.25	5	0	99.5	80-120	0			
Silver	4.966	0.25	5	0	99.3	80-120	0			
Zinc	5.164	0.50	5	0	103	80-120	0			

MS		Sample ID: 20051848-05AMS				Units: mg/Kg		Analysis Date: 5/28/2020 08:06 PM		
Client ID: 20200520-E34-496 (POR) @ 6-9"		Run ID: ICPMS3_200528B		SeqNo: 6445278		Prep Date: 5/28/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	9.299	0.33	6.527	4.048	80.4	75-125	0			
Cadmium	5.852	0.13	6.527	0.1831	86.8	75-125	0			
Chromium	16.47	0.33	6.527	10.99	84	75-125	0			
Copper	13.62	0.33	6.527	9.065	69.8	75-125	0			S
Lead	12.39	0.33	6.527	6.632	88.3	75-125	0			
Nickel	14.35	0.33	6.527	8.974	82.3	75-125	0			
Selenium	5.715	0.33	6.527	0.3169	82.7	75-125	0			
Silver	5.314	0.33	6.527	0.03611	80.9	75-125	0			
Zinc	29.55	0.65	6.527	34.8	-80.5	75-125	0			SO

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

Client: Caerus Oil and Gas LLC
 Work Order: 20051848
 Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: 156611 Instrument ID ICPMS3 Method: SW6020B

MS		Sample ID: 20051848-05AMS				Units: mg/Kg		Analysis Date: 5/29/2020 12:56 PM		
Client ID: 20200520-E34-496 (POR) @ 6-9"		Run ID: ICPMS3_200529B		SeqNo: 6446614		Prep Date: 5/28/2020		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	973.1	33	6.527	1087	-1740	75-125	0			SO

MSD		Sample ID: 20051848-05AMSD				Units: mg/Kg		Analysis Date: 5/28/2020 08:08 PM		
Client ID: 20200520-E34-496 (POR) @ 6-9"		Run ID: ICPMS3_200528B		SeqNo: 6445279		Prep Date: 5/28/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.492	0.33	6.502	4.048	68.4	75-125	9.299	9.06	20	S
Cadmium	5.947	0.13	6.502	0.1831	88.7	75-125	5.852	1.62	20	
Chromium	16.12	0.33	6.502	10.99	78.9	75-125	16.47	2.13	20	
Copper	13.95	0.33	6.502	9.065	75.1	75-125	13.62	2.36	20	
Lead	12.46	0.33	6.502	6.632	89.6	75-125	12.39	0.521	20	
Nickel	12.62	0.33	6.502	8.974	56.1	75-125	14.35	12.8	20	S
Selenium	5.754	0.33	6.502	0.3169	83.6	75-125	5.715	0.684	20	
Silver	5.436	0.33	6.502	0.03611	83	75-125	5.314	2.27	20	
Zinc	27.45	0.65	6.502	34.8	-113	75-125	29.55	7.36	20	SO

MSD		Sample ID: 20051848-05AMSD				Units: mg/Kg		Analysis Date: 5/29/2020 12:58 PM		
Client ID: 20200520-E34-496 (POR) @ 6-9"		Run ID: ICPMS3_200529B		SeqNo: 6446615		Prep Date: 5/28/2020		DF: 100		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	890.1	33	6.502	1087	-3020	75-125	973.1	8.9	20	SO

The following samples were analyzed in this batch:

20051848-01A	20051848-02A	20051848-03A
20051848-04A	20051848-05A	

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

Client: Caerus Oil and Gas LLC
 Work Order: 20051848
 Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: **156658** Instrument ID **ICPMS3** Method: **SW6020B**

DUP		Sample ID: 20051847-03BDUP				Units: mg/L		Analysis Date: 5/29/2020 01:20 PM		
Client ID:		Run ID: ICPMS3_200529A			SeqNo: 6446808		Prep Date: 5/29/2020		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	136.2	5.0	0	0	0	0-0	134.1	1.55		
Magnesium	2.074	2.0	0	0	0	0-0	2.339	12		
Sodium	546.3	2.0	0	0	0	0-0	523.3	4.3		

The following samples were analyzed in this batch:

20051848-01B	20051848-02B	20051848-03A
20051848-04B	20051848-05B	

Batch ID: **156658** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP		Sample ID: 20051847-03BDUP				Units: none		Analysis Date: 5/29/2020		
Client ID:		Run ID: SAR_200529A			SeqNo: 6446951		Prep Date: 5/29/2020		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	12.73	0.010	0	0	0		12.27	3.7	50	

The following samples were analyzed in this batch:

20051848-01B	20051848-02B	20051848-03A
20051848-04B	20051848-05B	

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

Client: Caerus Oil and Gas LLC
 Work Order: 20051848
 Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: **156525** Instrument ID **SVMS6** Method: **SW8270E**

MBLK		Sample ID: SBLKS1-156525-156525				Units: µg/Kg		Analysis Date: 5/27/2020 05:58 PM		
Client ID:		Run ID: SVMS6_200527A		SeqNo: 6442783		Prep Date: 5/27/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	U	4.2								
Anthracene	U	4.2								
Benzo(a)anthracene	U	4.2								
Benzo(a)pyrene	U	4.2								
Benzo(b)fluoranthene	U	4.2								
Benzo(k)fluoranthene	U	4.2								
Chrysene	U	4.2								
Dibenzo(a,h)anthracene	U	4.2								
Fluoranthene	U	4.2								
Fluorene	U	4.2								
Indeno(1,2,3-cd)pyrene	U	4.2								
Naphthalene	U	4.2								
Pyrene	U	4.2								
<i>Surr: 2-Fluorobiphenyl</i>	3436	0	3333	0	103	20-140	0			
<i>Surr: 4-Terphenyl-d14</i>	3754	0	3333	0	113	22-172	0			
<i>Surr: Nitrobenzene-d5</i>	3271	0	3333	0	98.1	28-140	0			

LCS		Sample ID: SLCSS1-156525-156525				Units: µg/Kg		Analysis Date: 5/27/2020 06:13 PM		
Client ID:		Run ID: SVMS6_200527A		SeqNo: 6442784		Prep Date: 5/27/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1236	4.2	1333	0	92.7	40-140	0			
Anthracene	1381	4.2	1333	0	104	40-140	0			
Benzo(a)anthracene	1351	4.2	1333	0	101	40-140	0			
Benzo(a)pyrene	1339	4.2	1333	0	100	40-140	0			
Benzo(b)fluoranthene	1198	4.2	1333	0	89.9	40-140	0			
Benzo(k)fluoranthene	1286	4.2	1333	0	96.5	40-140	0			
Chrysene	1337	4.2	1333	0	100	40-140	0			
Dibenzo(a,h)anthracene	1189	4.2	1333	0	89.2	40-140	0			
Fluoranthene	1430	4.2	1333	0	107	40-140	0			
Fluorene	1304	4.2	1333	0	97.8	40-140	0			
Indeno(1,2,3-cd)pyrene	1148	4.2	1333	0	86.2	40-140	0			
Naphthalene	1332	4.2	1333	0	99.9	40-140	0			
Pyrene	1375	4.2	1333	0	103	40-140	0			
<i>Surr: 2-Fluorobiphenyl</i>	1201	0	3333	0	36	20-140	0			
<i>Surr: 4-Terphenyl-d14</i>	3922	0	3333	0	118	22-172	0			
<i>Surr: Nitrobenzene-d5</i>	2682	0	3333	0	80.5	28-140	0			

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

Client: Caerus Oil and Gas LLC
 Work Order: 20051848
 Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: **156525** Instrument ID **SVMS6** Method: **SW8270E**

MS				Sample ID: 20051811-04A MS			Units: µg/Kg		Analysis Date: 5/27/2020 06:29 PM		
Client ID:		Run ID: SVMS6_200527A		SeqNo: 6442785		Prep Date: 5/27/2020		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1298	4.2	1329	0	97.7	40-140	0				
Anthracene	1433	4.2	1329	0	108	40-140	0				
Benzo(a)anthracene	1394	4.2	1329	0	105	40-140	0				
Benzo(a)pyrene	1417	4.2	1329	0	107	40-140	0				
Benzo(b)fluoranthene	1289	4.2	1329	0	97	40-140	0				
Benzo(k)fluoranthene	1386	4.2	1329	0	104	40-140	0				
Chrysene	1367	4.2	1329	0	103	40-140	0				
Dibenzo(a,h)anthracene	1229	4.2	1329	0	92.5	40-140	0				
Fluoranthene	1464	4.2	1329	0	110	40-140	0				
Fluorene	1346	4.2	1329	0	101	40-140	0				
Indeno(1,2,3-cd)pyrene	1009	4.2	1329	0	75.9	40-140	0				
Naphthalene	1421	4.2	1329	0	107	40-140	0				
Pyrene	1384	4.2	1329	0	104	40-140	0				
<i>Surr: 2-Fluorobiphenyl</i>	3627	0	3323	0	109	20-140	0				
<i>Surr: 4-Terphenyl-d14</i>	4002	0	3323	0	120	22-172	0				
<i>Surr: Nitrobenzene-d5</i>	3115	0	3323	0	93.7	28-140	0				

MSD				Sample ID: 20051811-04A MSD			Units: µg/Kg		Analysis Date: 5/27/2020 06:44 PM		
Client ID:		Run ID: SVMS6_200527A		SeqNo: 6442786		Prep Date: 5/27/2020		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	1265	4.1	1324	0	95.5	40-140	1298	2.62	30		
Anthracene	1392	4.1	1324	0	105	40-140	1433	2.85	30		
Benzo(a)anthracene	1355	4.1	1324	0	102	40-140	1394	2.84	30		
Benzo(a)pyrene	1386	4.1	1324	0	105	40-140	1417	2.19	30		
Benzo(b)fluoranthene	1246	4.1	1324	0	94.1	40-140	1289	3.4	30		
Benzo(k)fluoranthene	1348	4.1	1324	0	102	40-140	1386	2.81	30		
Chrysene	1338	4.1	1324	0	101	40-140	1367	2.14	30		
Dibenzo(a,h)anthracene	1211	4.1	1324	0	91.5	40-140	1229	1.49	30		
Fluoranthene	1439	4.1	1324	0	109	40-140	1464	1.68	30		
Fluorene	1320	4.1	1324	0	99.7	40-140	1346	1.91	30		
Indeno(1,2,3-cd)pyrene	1119	4.1	1324	0	84.5	40-140	1009	10.2	30		
Naphthalene	1387	4.1	1324	0	105	40-140	1421	2.36	30		
Pyrene	1384	4.1	1324	0	104	40-140	1384	0.065	30		
<i>Surr: 2-Fluorobiphenyl</i>	3532	0	3311	0	107	20-140	3627	2.64	0		
<i>Surr: 4-Terphenyl-d14</i>	4049	0	3311	0	122	22-172	4002	1.17	0		
<i>Surr: Nitrobenzene-d5</i>	3056	0	3311	0	92.3	28-140	3115	1.93	0		

The following samples were analyzed in this batch:

20051848-01A	20051848-02A	20051848-03A
20051848-04A	20051848-05A	

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

Client: Caerus Oil and Gas LLC
 Work Order: 20051848
 Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: **156546** Instrument ID **VMS10** Method: **SW8260C**

MBLK		Sample ID: MBLK-156546-156546				Units: µg/Kg-dry		Analysis Date: 5/27/2020 02:01 PM		
Client ID:		Run ID: VMS10_200527A		SeqNo: 6442628		Prep Date: 5/27/2020		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								
<i>Surr: 1,2-Dichloroethane-d4</i>	993	0	1000	0	99.3	70-130	0			
<i>Surr: 4-Bromofluorobenzene</i>	939.5	0	1000	0	94	70-130	0			
<i>Surr: Dibromofluoromethane</i>	990	0	1000	0	99	70-130	0			
<i>Surr: Toluene-d8</i>	930	0	1000	0	93	70-130	0			

LCS		Sample ID: LCS-156546-156546				Units: µg/Kg-dry		Analysis Date: 5/27/2020 01:09 PM		
Client ID:		Run ID: VMS10_200527A		SeqNo: 6442627		Prep Date: 5/27/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1033	30	1000	0	103	75-125	0			
Ethylbenzene	863.5	30	1000	0	86.4	75-125	0			
m,p-Xylene	1720	60	2000	0	86	80-125	0			
o-Xylene	839.5	30	1000	0	84	75-125	0			
Toluene	959.5	30	1000	0	96	70-125	0			
Xylenes, Total	2560	90	3000	0	85.3	75-125	0			
<i>Surr: 1,2-Dichloroethane-d4</i>	984.5	0	1000	0	98.4	70-130	0			
<i>Surr: 4-Bromofluorobenzene</i>	996.5	0	1000	0	99.6	70-130	0			
<i>Surr: Dibromofluoromethane</i>	1032	0	1000	0	103	70-130	0			
<i>Surr: Toluene-d8</i>	918.5	0	1000	0	91.8	70-130	0			

MS		Sample ID: 20051846-01A MS				Units: µg/Kg-dry		Analysis Date: 5/27/2020 09:12 PM		
Client ID:		Run ID: VMS10_200527A		SeqNo: 6442638		Prep Date: 5/27/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1475	42	1384	0	107	75-125	0			
Ethylbenzene	1247	42	1384	0	90	75-125	0			
m,p-Xylene	2535	83	2769	81.88	88.6	80-125	0			
o-Xylene	1242	42	1384	20.15	88.2	75-125	0			
Toluene	1345	42	1384	0	97.2	70-125	0			
Xylenes, Total	3777	120	4153	102	88.5	75-125	0			
<i>Surr: 1,2-Dichloroethane-d4</i>	1378	0	1384	0	99.5	70-130	0			
<i>Surr: 4-Bromofluorobenzene</i>	1394	0	1384	0	101	70-130	0			
<i>Surr: Dibromofluoromethane</i>	1331	0	1384	0	96.2	70-130	0			
<i>Surr: Toluene-d8</i>	1270	0	1384	0	91.8	70-130	0			

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

Client: Caerus Oil and Gas LLC
 Work Order: 20051848
 Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: **156546** Instrument ID **VMS10** Method: **SW8260C**

MSD		Sample ID: 20051846-01A MSD				Units: µg/Kg-dry		Analysis Date: 5/27/2020 09:29 PM		
Client ID:		Run ID: VMS10_200527A		SeqNo: 6442639		Prep Date: 5/27/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1406	41	1375	0	102	75-125	1475	4.76	30	
Ethylbenzene	1230	41	1375	0	89.4	75-125	1247	1.31	30	
m,p-Xylene	2468	83	2751	81.88	86.7	80-125	2535	2.71	30	
o-Xylene	1237	41	1375	20.15	88.5	75-125	1242	0.361	30	
Toluene	1351	41	1375	0	98.2	70-125	1345	0.435	30	
Xylenes, Total	3705	120	4126	102	87.3	75-125	3777	1.93	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	1349	0	1375	0	98.1	70-130	1378	2.11	30	
<i>Surr: 4-Bromofluorobenzene</i>	1473	0	1375	0	107	70-130	1394	5.52	30	
<i>Surr: Dibromofluoromethane</i>	1369	0	1375	0	99.5	70-130	1331	2.78	30	
<i>Surr: Toluene-d8</i>	1283	0	1375	0	93.3	70-130	1270	1.03	30	

The following samples were analyzed in this batch:

20051848-01A	20051848-02A	20051848-03A
20051848-04A	20051848-05A	

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

Client: Caerus Oil and Gas LLC
 Work Order: 20051848
 Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: **156567** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-156567-156567				Units: s.u.		Analysis Date: 5/28/2020 01:43 PM		
Client ID:		Run ID: WETCHEM_200528G		SeqNo: 6443417		Prep Date: 5/27/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.95	0.10	4	0	98.8	90-110	0			

DUP		Sample ID: 20051847-01A DUP				Units: s.u.		Analysis Date: 5/28/2020 01:43 PM		
Client ID:		Run ID: WETCHEM_200528G		SeqNo: 6443419		Prep Date: 5/27/2020		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.28	0.10	0	0	0	0-0	8.26	0.242	20	
Temperature	20.6	0.10	0	0	0		20.5	0.487		

The following samples were analyzed in this batch:

20051848-01A	20051848-02A	20051848-03A
20051848-04A	20051848-05A	

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

Client: Caerus Oil and Gas LLC
 Work Order: 20051848
 Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: **156606** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK	Sample ID: MBLK-156606-156606		Units: mg/Kg		Analysis Date: 5/29/2020 11:30 AM					
Client ID:	Run ID: WETCHEM_200529B		SeqNo: 6446346		Prep Date: 5/28/2020 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent U 1.0

LCS	Sample ID: LCS-156606-156606		Units: mg/Kg		Analysis Date: 5/29/2020 11:30 AM					
Client ID:	Run ID: WETCHEM_200529B		SeqNo: 6446347		Prep Date: 5/28/2020 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 5.01 1.0 5 0 100 80-120 0

MS	Sample ID: 20051847-03A MS		Units: mg/Kg		Analysis Date: 5/29/2020 11:30 AM					
Client ID:	Run ID: WETCHEM_200529B		SeqNo: 6446351		Prep Date: 5/28/2020 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 0.9029 0.97 4.854 0.5392 7.49 75-125 0 JS

MS	Sample ID: 20051847-03A MSI		Units: mg/Kg		Analysis Date: 5/29/2020 11:30 AM					
Client ID:	Run ID: WETCHEM_200529B		SeqNo: 6446353		Prep Date: 5/28/2020 DF: 100					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1217 97 1734 0.5392 70.1 75-125 0 S

MSD	Sample ID: 20051847-03A MSD		Units: mg/Kg		Analysis Date: 5/29/2020 11:30 AM					
Client ID:	Run ID: WETCHEM_200529B		SeqNo: 6446352		Prep Date: 5/28/2020 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.029 0.97 4.854 0.5392 10.1 75-125 0.9029 13.1 20 S

The following samples were analyzed in this batch:

20051848-01A	20051848-02A	20051848-03A
20051848-04A	20051848-05A	

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

Client: Caerus Oil and Gas LLC
 Work Order: 20051848
 Project: E34-496 Frac Tank Release

QC BATCH REPORT

Batch ID: **R289419** Instrument ID **MOIST** Method: **SW3550C**

MBLK	Sample ID: WBLKS-R289419		Units: % of sample			Analysis Date: 5/27/2020 10:14 AM				
Client ID:	Run ID: MOIST_200527B		SeqNo: 6442298			Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture U 0.10

LCS	Sample ID: LCS-R289419		Units: % of sample			Analysis Date: 5/27/2020 10:14 AM				
Client ID:	Run ID: MOIST_200527B		SeqNo: 6442297			Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 100 0.10 100 0 100 98-102 0

DUP	Sample ID: 20051666-03B DUP		Units: % of sample			Analysis Date: 5/27/2020 10:14 AM				
Client ID:	Run ID: MOIST_200527B		SeqNo: 6442277			Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 19.34 0.10 0 0 0 0-0 19.47 0.67 10

DUP	Sample ID: 20051666-05B DUP		Units: % of sample			Analysis Date: 5/27/2020 10:14 AM				
Client ID:	Run ID: MOIST_200527B		SeqNo: 6442279			Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 16.27 0.10 0 0 0 0-0 18.05 10.4 10 R

The following samples were analyzed in this batch:

20051848-01A	20051848-02A	20051848-03A
20051848-04A	20051848-05A	

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

Sample Receipt Checklist

Client Name: CAERUS

Date/Time Received: 23-May-20 09:00

Work Order: 20051848

Received by: DS

Checklist completed by Diane Shaw 27-May-20

Reviewed by: Chad Whelton 27-May-20

Matrices: Soil
Carrier name: FedEx

- Shipping container/cooler in good condition? Yes [checked] No [] Not Present []
Custody seals intact on shipping container/cooler? Yes [] No [] Not Present [checked]
Custody seals intact on sample bottles? Yes [] No [] Not Present [checked]
Chain of custody present? Yes [checked] No []
Chain of custody signed when relinquished and received? Yes [checked] No []
Chain of custody agrees with sample labels? Yes [checked] No []
Samples in proper container/bottle? Yes [checked] No []
Sample containers intact? Yes [checked] No []
Sufficient sample volume for indicated test? Yes [checked] No []
All samples received within holding time? Yes [checked] No []
Container/Temp Blank temperature in compliance? Yes [checked] No []
Sample(s) received on ice? Yes [checked] No []

Temperature(s)/Thermometer(s): 4.4/4.4 c SR1

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 5/27/2020 7:56:54 AM

Water - VOA vials have zero headspace? Yes [] No [] No VOA vials submitted [checked]

Water - pH acceptable upon receipt? Yes [] No [] N/A [checked]

pH adjusted? Yes [] No [] N/A [checked]

pH adjusted by:

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction: