



20-Aug-2019

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

Re: **L19-595 Dumpline**

Work Order: **19080644**

Dear Jake,

ALS Environmental received 1 sample on 09-Aug-2019 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 23.

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 026-999-449

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: L19-595 Dumpline
Work Order: 19080644

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>
19080644-01	20190808-L19-595-POR@6'	Soil		8/8/2019 14:30	8/9/2019 09:00	<input type="checkbox"/>

<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: 20-Aug-19

Client: Caerus Oil and Gas LLC
Project: L19-595 Dumpline
Sample ID: 20190808-L19-595-POR@6'
Collection Date: 8/8/2019 02:30 PM

Work Order: 19080644
Lab ID: 19080644-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID							
			Method: SW8015C			Prep: SW3546 / 8/13/19	Analyst: RM
DRO (C10-C28)	820		17	30	mg/Kg-dry	5	8/16/2019 14:41
Surr: 4-Terphenyl-d14	95.1			34-130	%REC	5	8/16/2019 14:41
GASOLINE RANGE ORGANICS BY GC-FID							
			Method: SW8015D			Prep: SW5035 / 8/12/19	Analyst: RM
GRO (C6-C10)	2,500		3.1	7.3	mg/Kg	1	8/12/2019 23:42
Surr: Toluene-d8	87.6			71-123	%REC	1	8/12/2019 23:42
MERCURY BY CVAA							
			Method: SW7471B			Prep: SW7471 / 8/14/19	Analyst: RSB
Mercury	0.016	J	0.0021	0.021	mg/Kg-dry	1	8/14/2019 18:58
METALS BY ICP-MS							
			Method: SW6020A			Prep: SW3050B / 8/10/19	Analyst: ABL
Arsenic	13		0.059	0.49	mg/Kg-dry	1	8/12/2019 00:25
Barium	500		4.5	4.9	mg/Kg-dry	10	8/12/2019 22:17
Cadmium	0.46		0.029	0.20	mg/Kg-dry	1	8/12/2019 00:25
Chromium	25		0.21	0.49	mg/Kg-dry	1	8/12/2019 00:25
Copper	33		4.9	4.9	mg/Kg-dry	10	8/12/2019 22:17
Lead	28		0.23	0.49	mg/Kg-dry	1	8/12/2019 00:25
Nickel	27		2.5	4.9	mg/Kg-dry	10	8/12/2019 22:17
Selenium	0.91		0.45	0.49	mg/Kg-dry	1	8/12/2019 00:25
Silver	0.085	J	0.064	0.49	mg/Kg-dry	1	8/12/2019 00:25
Zinc	83		9.6	9.8	mg/Kg-dry	10	8/12/2019 22:17
SOLUBLE CATIONS FOR SAR							
			Method: SW6020A			Prep: USDA Method 20B / 8/16/19	Analyst: ABL
Calcium	57		2.5	5.0	mg/L	10	8/19/2019 21:38
Magnesium	5.5		0.50	2.0	mg/L	10	8/19/2019 21:38
Sodium	1,400		0.45	2.0	mg/L	10	8/19/2019 21:38
SODIUM ADSORPTION RATIO							
			Method: USDA H60 METHOD 2			Prep: USDA Method 20B / 8/16/19	Analyst: ABL
Sodium Adsorption Ratio	48		0.010	0.010	none	1	8/16/2019
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS)							
			Method: SW846 8270D			Prep: SW3546 / 8/13/19	Analyst: EEW
Acenaphthene	0.033		0.00097	0.0050	mg/Kg-dry	1	8/13/2019 20:36
Anthracene	U		0.0017	0.0050	mg/Kg-dry	1	8/13/2019 20:36
Benzo(a)anthracene	U		0.0021	0.0050	mg/Kg-dry	1	8/13/2019 20:36
Benzo(a)pyrene	U		0.0014	0.0050	mg/Kg-dry	1	8/13/2019 20:36
Benzo(b)fluoranthene	U		0.0012	0.0050	mg/Kg-dry	1	8/13/2019 20:36
Benzo(k)fluoranthene	U		0.0015	0.0050	mg/Kg-dry	1	8/13/2019 20:36
Chrysene	U		0.0010	0.0050	mg/Kg-dry	1	8/13/2019 20:36
Dibenzo(a,h)anthracene	U		0.0012	0.0050	mg/Kg-dry	1	8/13/2019 20:36
Fluoranthene	U		0.00092	0.0050	mg/Kg-dry	1	8/13/2019 20:36

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

ALS Group, USA

Date: 20-Aug-19

Client: Caerus Oil and Gas LLC
Project: L19-595 Dumpline
Sample ID: 20190808-L19-595-POR@6'
Collection Date: 8/8/2019 02:30 PM

Work Order: 19080644
Lab ID: 19080644-01
Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	0.18		0.0017	0.0050	mg/Kg-dry	1	8/13/2019 20:36
Indeno(1,2,3-cd)pyrene	U		0.0018	0.0050	mg/Kg-dry	1	8/13/2019 20:36
Naphthalene	3.9		0.044	0.10	mg/Kg-dry	20	8/14/2019 18:47
Pyrene	U		0.00083	0.0050	mg/Kg-dry	1	8/13/2019 20:36
Surr: 2-Fluorobiphenyl	84.7			20-140	%REC	1	8/13/2019 20:36
Surr: 4-Terphenyl-d14	77.4			22-172	%REC	1	8/13/2019 20:36
Surr: Nitrobenzene-d5	101			28-140	%REC	20	8/14/2019 18:47
VOLATILE ORGANIC COMPOUNDS			Method: SW8260C		Prep: SW5035 / 8/12/19		Analyst: CKD
Benzene	23		0.075	0.44	mg/Kg-dry	10	8/13/2019 19:40
Ethylbenzene	19		0.093	0.44	mg/Kg-dry	10	8/13/2019 19:40
m,p-Xylene	290		8.0	12	mg/Kg-dry	200	8/14/2019 18:23
o-Xylene	40		0.17	0.44	mg/Kg-dry	10	8/13/2019 19:40
Toluene	45		0.12	0.44	mg/Kg-dry	10	8/13/2019 19:40
Xylenes, Total	340		8.0	18	mg/Kg-dry	200	8/14/2019 18:23
Surr: 1,2-Dichloroethane-d4	102			70-130	%REC	10	8/13/2019 19:40
Surr: 1,2-Dichloroethane-d4	95.0			70-130	%REC	200	8/14/2019 18:23
Surr: 4-Bromofluorobenzene	109			70-130	%REC	10	8/13/2019 19:40
Surr: 4-Bromofluorobenzene	99.7			70-130	%REC	200	8/14/2019 18:23
Surr: Dibromofluoromethane	98.4			70-130	%REC	10	8/13/2019 19:40
Surr: Dibromofluoromethane	95.0			70-130	%REC	200	8/14/2019 18:23
Surr: Toluene-d8	114			70-130	%REC	10	8/13/2019 19:40
Surr: Toluene-d8	98.9			70-130	%REC	200	8/14/2019 18:23
ELECTRICAL CONDUCTIVITY (SAR)			Method: USDA H60 METHOD 2		Prep: USDA Method 20B / 8/16/19		Analyst: DVD
Electrical Conductivity @ Saturation	0.40		0.00055	0.0050	mmhos/cm @25°	20	8/16/2019 15:10
CHROMIUM, TRIVALENT			Method: CALCULATION				Analyst: JZB
Chromium, Trivalent	25		0.38	1.2	mg/Kg-dry	1	8/14/2019 16:18
CHROMIUM, HEXAVALENT			Method: SW7196A		Prep: SW3060A / 8/14/19		Analyst: RZM
Chromium, Hexavalent	U		1.0	1.2	mg/Kg-dry	1	8/14/2019 15:20
MOISTURE			Method: SW3550C				Analyst: MMO
Moisture	19		0.10	0.10	% of sample	1	8/14/2019 14:53
PH			Method: SW9045D		Prep: EXTRACT / 8/12/19		Analyst: DNW
pH	7.96		0.10	0.100	s.u.	1	8/12/2019 13:00
Temperature	23.2		0.10	0.100	°C	1	8/12/2019 13:00

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

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140720** Instrument ID **GC8** Method: **SW8015C**

MBLK		Sample ID: DBLKS1-140720-140720				Units: mg/Kg		Analysis Date: 8/14/2019 10:43 AM		
Client ID:		Run ID: GC8_190814A				SeqNo: 5845389		Prep Date: 8/13/2019		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 3.233 0 3.33 0 97.1 34-130 0

LCS		Sample ID: DLCSS1-140720-140720				Units: mg/Kg		Analysis Date: 8/14/2019 11:12 AM		
Client ID:		Run ID: GC8_190814A				SeqNo: 5845390		Prep Date: 8/13/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28) 398.7 5.0 333 0 120 65-122 0
Surr: 4-Terphenyl-d14 3.3 0 3.33 0 99.1 34-130 0

MS		Sample ID: 19080602-01A MS				Units: mg/Kg		Analysis Date: 8/14/2019 11:41 AM		
Client ID:		Run ID: GC8_190814A				SeqNo: 5845391		Prep Date: 8/13/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28) 332 4.9 323.6 8.075 100 65-122 0
Surr: 4-Terphenyl-d14 2.591 0 3.236 0 80.1 34-130 0

MSD		Sample ID: 19080602-01A MSD				Units: mg/Kg		Analysis Date: 8/14/2019 12:10 PM		
Client ID:		Run ID: GC8_190814A				SeqNo: 5845392		Prep Date: 8/13/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28) 371.6 4.9 328.4 8.075 111 65-122 332 11.3 30
Surr: 4-Terphenyl-d14 2.942 0 3.284 0 89.6 34-130 2.591 12.7 30

The following samples were analyzed in this batch:

19080644-01A

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140688** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: DBLKS1-140688-140688				Units: µg/Kg-dry		Analysis Date: 8/12/2019 09:14 PM		
Client ID:		Run ID: GC9_190812A				SeqNo: 5842667		Prep Date: 8/12/2019		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	4091	0	5000	0	81.8	71-123	0			

LCS		Sample ID: DLCSS1-140688-140688				Units: µg/Kg-dry		Analysis Date: 8/12/2019 07:15 PM		
Client ID:		Run ID: GC9_190812A				SeqNo: 5842660		Prep Date: 8/12/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	434300	5,000	500000	0	86.9	71-123	0			
Surr: Toluene-d8	4964	0	5000	0	99.3	71-123	0			

MS		Sample ID: 19080717-01A MS				Units: µg/Kg-dry		Analysis Date: 8/12/2019 07:45 PM		
Client ID:		Run ID: GC9_190812A				SeqNo: 5842662		Prep Date: 8/12/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	702600	6,800	675700	0	104	71-123	0			
Surr: Toluene-d8	7211	0	6757	0	107	71-123	0			

MSD		Sample ID: 19080717-01A MSD				Units: µg/Kg-dry		Analysis Date: 8/12/2019 08:14 PM		
Client ID:		Run ID: GC9_190812A				SeqNo: 5842663		Prep Date: 8/12/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	852600	7,900	795000	0	107	71-123	702600	19.3	30	
Surr: Toluene-d8	8551	0	7950	0	108	71-123	7211	17	30	

The following samples were analyzed in this batch:

19080644-01A

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

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140816** Instrument ID **HG4** Method: **SW7471B**

MBLK		Sample ID: MBLK-140816-140816				Units: mg/Kg		Analysis Date: 8/14/2019 06:45 PM		
Client ID:		Run ID: HG4_190814A				SeqNo: 5846758		Prep Date: 8/14/2019		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-140816-140816				Units: mg/Kg		Analysis Date: 8/14/2019 06:47 PM		
Client ID:		Run ID: HG4_190814A				SeqNo: 5846759		Prep Date: 8/14/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1524 0.020 0.1665 0 91.5 80-120 0

MS		Sample ID: 19080355-02AMS					Units: mg/Kg		Analysis Date: 8/14/2019 06:54 PM		
Client ID:			Run ID: HG4_190814A			SeqNo: 5846765		Prep Date: 8/14/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Mercury 0.1455 0.016 0.1334 0.006797 104 75-125 0

MSD		Sample ID: 19080355-02AMSD				Units: mg/Kg		Analysis Date: 8/14/2019 06:56 PM		
Client ID:		Run ID: HG4_190814A			SeqNo: 5846768		Prep Date: 8/14/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1384 0.016 0.1302 0.006797 101 75-125 0.1455 4.98 35

The following samples were analyzed in this batch:

19080644-01A

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

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140622** Instrument ID **ICPMS3** Method: **SW6020A**

MBLK		Sample ID: MBLK-140622-140622				Units: mg/Kg		Analysis Date: 8/11/2019 11:39 PM		
Client ID:		Run ID: ICPMS3_190811B				SeqNo: 5837505		Prep Date: 8/10/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.24								
Barium	U	0.24								
Cadmium	U	0.097								
Chromium	U	0.24								
Copper	U	0.24								
Lead	U	0.24								
Nickel	U	0.24								
Silver	U	0.24								
Zinc	U	0.49								

MBLK		Sample ID: MBLK-140622-140622				Units: mg/Kg		Analysis Date: 8/12/2019 04:54 PM		
Client ID:		Run ID: ICPMS3_190812A				SeqNo: 5840335		Prep Date: 8/10/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	U	0.24								

LCS		Sample ID: LCS-140622-140622				Units: mg/Kg		Analysis Date: 8/12/2019 12:11 AM		
Client ID:		Run ID: ICPMS3_190811B				SeqNo: 5837525		Prep Date: 8/10/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	5.111	0.24	4.826	0	106	80-120	0			
Barium	5.107	0.24	4.826	0	106	80-120	0			
Cadmium	5.185	0.097	4.826	0	107	80-120	0			
Chromium	5.243	0.24	4.826	0	109	80-120	0			
Copper	5.232	0.24	4.826	0	108	80-120	0			
Lead	5.198	0.24	4.826	0	108	80-120	0			
Nickel	5.199	0.24	4.826	0	108	80-120	0			
Selenium	5.109	0.24	4.826	0	106	80-120	0			
Silver	5.174	0.24	4.826	0	107	80-120	0			
Zinc	5.249	0.48	4.826	0	109	80-120	0			

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

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140622** Instrument ID **ICPMS3** Method: **SW6020A**

MS		Sample ID: 19080517-28AMS				Units: mg/Kg		Analysis Date: 8/12/2019 12:15 AM		
Client ID:		Run ID: ICPMS3_190811B				SeqNo: 5837527		Prep Date: 8/10/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	13.85	0.40	8.078	5.162	108	75-125	0			
Barium	90.57	0.40	8.078	29.51	756	75-125	0			S
Cadmium	7.393	0.16	8.078	0.0853	90.5	75-125	0			
Chromium	20.54	0.40	8.078	9.104	142	75-125	0			S
Copper	15.73	0.40	8.078	7.382	103	75-125	0			
Lead	19.58	0.40	8.078	9.518	125	75-125	0			
Nickel	20.63	0.40	8.078	10.74	122	75-125	0			
Selenium	8.375	0.40	8.078	0.2423	101	75-125	0			
Silver	7.274	0.40	8.078	0.008724	89.9	75-125	0			

MS		Sample ID: 19080517-28AMS				Units: mg/Kg		Analysis Date: 8/12/2019 10:01 PM		
Client ID:		Run ID: ICPMS3_190812A				SeqNo: 5840526		Prep Date: 8/10/2019		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Zinc	46.27	8.1	8.078	29.2	211	75-125	0			S

MSD		Sample ID: 19080517-28AMSD				Units: mg/Kg		Analysis Date: 8/12/2019 12:16 AM		
Client ID:		Run ID: ICPMS3_190811B				SeqNo: 5837528		Prep Date: 8/10/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	13.36	0.40	7.974	5.162	103	75-125	13.85	3.62	20	
Barium	49.33	0.40	7.974	29.51	249	75-125	90.57	59	20	SR
Cadmium	7.268	0.16	7.974	0.0853	90.1	75-125	7.393	1.7	20	
Chromium	21.06	0.40	7.974	9.104	150	75-125	20.54	2.52	20	S
Copper	15.08	0.40	7.974	7.382	96.6	75-125	15.73	4.19	20	
Lead	18.8	0.40	7.974	9.518	116	75-125	19.58	4.04	20	
Nickel	18.73	0.40	7.974	10.74	100	75-125	20.63	9.66	20	
Selenium	8.223	0.40	7.974	0.2423	100	75-125	8.375	1.82	20	
Silver	7.167	0.40	7.974	0.008724	89.8	75-125	7.274	1.48	20	

MSD		Sample ID: 19080517-28AMSD				Units: mg/Kg		Analysis Date: 8/12/2019 10:03 PM		
Client ID:		Run ID: ICPMS3_190812A				SeqNo: 5840527		Prep Date: 8/10/2019		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Zinc	41.04	8.0	7.974	29.2	148	75-125	46.27	12	20	S

The following samples were analyzed in this batch:

19080644-01A

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

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140987** Instrument ID **ICPMS3** Method: **SW6020A**

DUP		Sample ID: 19080597-06ADUP				Units: mg/L		Analysis Date: 8/16/2019 04:34 PM		
Client ID:		Run ID: ICPMS3_190816A				SeqNo: 5851277		Prep Date: 8/16/2019		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	59.23	5.0	0	0	0	0-0	50.73	15.5		
Magnesium	9.783	2.0	0	0	0	0-0	8.426	14.9		
Sodium	82.94	2.0	0	0	0	0-0	72.42	13.5		

The following samples were analyzed in this batch:

19080644-01A

Batch ID: **140987** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP		Sample ID: 19080597-06ADUP				Units: none		Analysis Date: 8/16/2019		
Client ID:		Run ID: SAR_190816A				SeqNo: 5851305		Prep Date: 8/16/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	2.631	0.010	0	0	0		2.481	5.87	50	

The following samples were analyzed in this batch:

19080644-01A

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

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140721** Instrument ID **SVMS6** Method: **SW846 8270D**

MBLK		Sample ID: SBLKS1-140721-140721				Units: µg/Kg		Analysis Date: 8/13/2019 06:32 PM		
Client ID:		Run ID: SVMS6_190813A				SeqNo: 5843917		Prep Date: 8/13/2019		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								
Surr: 2-Fluorobiphenyl	2732	0	3333	0	82	20-140	0			
Surr: 4-Terphenyl-d14	2788	0	3333	0	83.6	22-172	0			
Surr: Nitrobenzene-d5	2912	0	3333	0	87.4	28-140	0			

LCS		Sample ID: SLCSS1-140721-140721				Units: µg/Kg		Analysis Date: 8/13/2019 06:47 PM		
Client ID:		Run ID: SVMS6_190813A				SeqNo: 5843918		Prep Date: 8/13/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	971.8	4.2	1333	0	72.9	40-140	0			
Anthracene	1117	4.2	1333	0	83.8	40-140	0			
Benzo(a)anthracene	1066	4.2	1333	0	80	40-140	0			
Benzo(a)pyrene	1159	4.2	1333	0	87	40-140	0			
Benzo(b)fluoranthene	1025	4.2	1333	0	76.9	40-140	0			
Benzo(k)fluoranthene	1018	4.2	1333	0	76.4	40-140	0			
Chrysene	1019	4.2	1333	0	76.5	40-140	0			
Dibenzo(a,h)anthracene	1215	4.2	1333	0	91.2	40-140	0			
Fluoranthene	1237	4.2	1333	0	92.8	40-140	0			
Fluorene	1067	4.2	1333	0	80	40-140	0			
Indeno(1,2,3-cd)pyrene	1301	4.2	1333	0	97.6	40-140	0			
Naphthalene	1069	4.2	1333	0	80.2	40-140	0			
Pyrene	837	4.2	1333	0	62.8	40-140	0			
Surr: 2-Fluorobiphenyl	2666	0	3333	0	80	20-140	0			
Surr: 4-Terphenyl-d14	2407	0	3333	0	72.2	22-172	0			
Surr: Nitrobenzene-d5	2379	0	3333	0	71.4	28-140	0			

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

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140721** Instrument ID **SVMS6** Method: **SW846 8270D**

MS				Sample ID: 19080602-01A MS			Units: µg/Kg		Analysis Date: 8/13/2019 07:03 PM		
Client ID:		Run ID: SVMS6_190813A			SeqNo: 5843919		Prep Date: 8/13/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	887.8	4.1	1309	0	67.8	40-140	0				
Anthracene	980.6	4.1	1309	0	74.9	40-140	0				
Benzo(a)anthracene	942.4	4.1	1309	0	72	40-140	0				
Benzo(a)pyrene	1018	4.1	1309	0	77.7	40-140	0				
Benzo(b)fluoranthene	922.8	4.1	1309	0	70.5	40-140	0				
Benzo(k)fluoranthene	889.1	4.1	1309	0	67.9	40-140	0				
Chrysene	929.5	4.1	1309	0	71	40-140	0				
Dibenzo(a,h)anthracene	948	4.1	1309	0	72.4	40-140	0				
Fluoranthene	960.7	4.1	1309	0	73.4	40-140	0				
Fluorene	1027	4.1	1309	0	78.4	40-140	0				
Indeno(1,2,3-cd)pyrene	1059	4.1	1309	0	80.9	40-140	0				
Naphthalene	1009	4.1	1309	0	77.1	40-140	0				
Pyrene	881.6	4.1	1309	0	67.3	40-140	0				
Surr: 2-Fluorobiphenyl	2496	0	3274	0	76.2	20-140	0				
Surr: 4-Terphenyl-d14	2482	0	3274	0	75.8	22-172	0				
Surr: Nitrobenzene-d5	2881	0	3274	0	88	28-140	0				

MSD				Sample ID: 19080602-01A MSD			Units: µg/Kg		Analysis Date: 8/13/2019 07:18 PM	
Client ID:		Run ID: SVMS6_190813A			SeqNo: 5843920		Prep Date: 8/13/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	928.9	4.2	1330	0	69.8	40-140	887.8	4.52	30	
Anthracene	1027	4.2	1330	0	77.2	40-140	980.6	4.59	30	
Benzo(a)anthracene	964.2	4.2	1330	0	72.5	40-140	942.4	2.28	30	
Benzo(a)pyrene	997	4.2	1330	0	75	40-140	1018	2.05	30	
Benzo(b)fluoranthene	879.5	4.2	1330	0	66.1	40-140	922.8	4.8	30	
Benzo(k)fluoranthene	879.7	4.2	1330	0	66.1	40-140	889.1	1.07	30	
Chrysene	932.1	4.2	1330	0	70.1	40-140	929.5	0.275	30	
Dibenzo(a,h)anthracene	967	4.2	1330	0	72.7	40-140	948	1.98	30	
Fluoranthene	1102	4.2	1330	0	82.8	40-140	960.7	13.7	30	
Fluorene	998.6	4.2	1330	0	75.1	40-140	1027	2.79	30	
Indeno(1,2,3-cd)pyrene	1059	4.2	1330	0	79.6	40-140	1059	0.0485	30	
Naphthalene	1031	4.2	1330	0	77.5	40-140	1009	2.21	30	
Pyrene	853.5	4.2	1330	0	64.2	40-140	881.6	3.25	30	
Surr: 2-Fluorobiphenyl	2614	0	3326	0	78.6	20-140	2496	4.63	0	
Surr: 4-Terphenyl-d14	2400	0	3326	0	72.2	22-172	2482	3.34	0	
Surr: Nitrobenzene-d5	2832	0	3326	0	85.1	28-140	2881	1.73	0	

The following samples were analyzed in this batch:

19080644-01A

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

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140685** Instrument ID **VMS9** Method: **SW8260C**

MBLK				Sample ID: MBLK-140685-140685				Units: µg/Kg-dry			Analysis Date: 8/12/2019 01:28 PM			
Client ID:				Run ID: VMS9_190812A				SeqNo: 5839100			Prep Date: 8/12/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Benzene	U	30												
Ethylbenzene	9.5	30								J				
m,p-Xylene	U	60												
o-Xylene	14	30								J				
Toluene	U	30												
Xylenes, Total	U	90												
Surr: 1,2-Dichloroethane-d4	951.5	0	1000	0	95.2	70-130	0							
Surr: 4-Bromofluorobenzene	1003	0	1000	0	100	70-130	0							
Surr: Dibromofluoromethane	898.5	0	1000	0	89.8	70-130	0							
Surr: Toluene-d8	1023	0	1000	0	102	70-130	0							

LCS				Sample ID: LCS-140685-140685				Units: µg/Kg-dry		Analysis Date: 8/12/2019 01:44 PM	
Client ID:			Run ID: VMS9_190812A			SeqNo: 5841649		Prep Date: 8/12/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	957	30	1000	0	95.7	75-125	0				
Ethylbenzene	922	30	1000	0	92.2	75-125	0				
m,p-Xylene	1968	60	2000	0	98.4	80-125	0				
o-Xylene	931	30	1000	0	93.1	75-125	0				
Toluene	922.5	30	1000	0	92.2	70-125	0				
Xylenes, Total	2898	90	3000	0	96.6	75-125	0				
Surr: 1,2-Dichloroethane-d4	992.5	0	1000	0	99.2	70-130	0				
Surr: 4-Bromofluorobenzene	1005	0	1000	0	100	70-130	0				
Surr: Dibromofluoromethane	1032	0	1000	0	103	70-130	0				
Surr: Toluene-d8	999	0	1000	0	99.9	70-130	0				

MS				Sample ID: 19080717-01A MS			Units: µg/Kg-dry		Analysis Date: 8/12/2019 09:02 PM		
Client ID:			Run ID: VMS9_190812A			SeqNo: 5841180		Prep Date: 8/12/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1278	41	1351	0	94.6	75-125	0				
Ethylbenzene	1230	41	1351	0	91	75-125	0				
m,p-Xylene	2653	81	2703	8.798	97.8	80-125	0				
o-Xylene	1285	41	1351	0	95.1	75-125	0				
Toluene	1299	41	1351	0	96.2	70-125	0				
Xylenes, Total	3938	120	4054	0	97.1	75-125	0				
Surr: 1,2-Dichloroethane-d4	1310	0	1351	0	96.9	70-130	0				
Surr: 4-Bromofluorobenzene	1428	0	1351	0	106	70-130	0				
Surr: Dibromofluoromethane	1155	0	1351	0	85.5	70-130	0				
Surr: Toluene-d8	1405	0	1351	0	104	70-130	0				

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

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140685** Instrument ID **VMS9** Method: **SW8260C**

MSD		Sample ID: 19080717-01A MSD				Units: µg/Kg-dry		Analysis Date: 8/12/2019 09:18 PM		
Client ID:		Run ID: VMS9_190812A				SeqNo: 5841181		Prep Date: 8/12/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1463	48	1590	0	92	75-125	1278	13.5	30	
Ethylbenzene	1381	48	1590	0	86.8	75-125	1230	11.5	30	
m,p-Xylene	3022	95	3180	8.798	94.7	80-125	2653	13	30	
o-Xylene	1436	48	1590	0	90.3	75-125	1285	11.1	30	
Toluene	1445	48	1590	0	90.9	70-125	1299	10.6	30	
Xylenes, Total	4457	140	4770	0	93.4	75-125	3938	12.4	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	1556	0	1590	0	97.8	70-130	1310	17.2	30	
<i>Surr: 4-Bromofluorobenzene</i>	1663	0	1590	0	105	70-130	1428	15.2	30	
<i>Surr: Dibromofluoromethane</i>	1318	0	1590	0	82.9	70-130	1155	13.1	30	
<i>Surr: Toluene-d8</i>	1601	0	1590	0	101	70-130	1405	13	30	

The following samples were analyzed in this batch:

19080644-01A

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

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140668** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-140668-140668				Units: s.u.		Analysis Date: 8/12/2019 01:00 PM		
Client ID:		Run ID: WETCHEM_190812I		SeqNo: 5838271		Prep Date: 8/12/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.96	0.10	4	0	99	90-110	0			

DUP				Sample ID: 19080676-01A DUP				Units: s.u.			Analysis Date: 8/12/2019 01:00 PM			
Client ID:				Run ID: WETCHEM_190812I				SeqNo: 5838274			Prep Date: 8/12/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
pH	7.7	0.10	0	0	0	0-0	7.68	0.26	20					
Temperature	23.4	0.10	0	0	0		23.4	0						

DUP				Sample ID: 19080719-01A DUP				Units: s.u.			Analysis Date: 8/12/2019 01:00 PM			
Client ID:				Run ID: WETCHEM_190812I				SeqNo: 5838287			Prep Date: 8/12/2019		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		7.87	0.10	0	0	0	0-0	7.82	0.637	20				
Temperature		23.5	0.10	0	0	0		23.4	0.426					

The following samples were analyzed in this batch:

19080644-01A

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

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140836** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-140836-140836				Units: mg/Kg		Analysis Date: 8/14/2019 03:20 PM		
Client ID:		Run ID: WETCHEM_190814R		SeqNo: 5845075		Prep Date: 8/14/2019		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-140836-140836				Units: mg/Kg		Analysis Date: 8/14/2019 03:20 PM		
Client ID:		Run ID: WETCHEM_190814R		SeqNo: 5845076		Prep Date: 8/14/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.41 1.0 5 0 88.2 80-120 0

MS		Sample ID: 19080597-01A MS				Units: mg/Kg		Analysis Date: 8/14/2019 03:20 PM		
Client ID:		Run ID: WETCHEM_190814R		SeqNo: 5845079		Prep Date: 8/14/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3.99 0.99 4.95 0.0396 79.8 75-125 0

MS		Sample ID: 19080597-01A MSI				Units: mg/Kg		Analysis Date: 8/14/2019 03:20 PM		
Client ID:		Run ID: WETCHEM_190814R		SeqNo: 5845081		Prep Date: 8/14/2019		DF: 200		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 3075 190 3218 0.0396 95.6 75-125 0

MS		Sample ID: 19080598-01A MS				Units: mg/Kg		Analysis Date: 8/14/2019 03:20 PM		
Client ID:		Run ID: WETCHEM_190814R		SeqNo: 5845091		Prep Date: 8/14/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.078 0.98 4.902 0.8182 66.5 75-125 0 S

MS		Sample ID: 19080598-01A MSI				Units: mg/Kg		Analysis Date: 8/14/2019 03:20 PM		
Client ID:		Run ID: WETCHEM_190814R		SeqNo: 5845093		Prep Date: 8/14/2019		DF: 200		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 2733 200 2868 0.8182 95.3 75-125 0

MSD		Sample ID: 19080597-01A MSD				Units: mg/Kg		Analysis Date: 8/14/2019 03:20 PM		
Client ID:		Run ID: WETCHEM_190814R		SeqNo: 5845080		Prep Date: 8/14/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 4.41 1.0 5 0.0396 87.4 75-125 3.99 10 20

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

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140836** Instrument ID **WETCHEM** Method: **SW7196A**

MSD		Sample ID: 19080598-01A MSD				Units: mg/Kg		Analysis Date: 8/14/2019 03:20 PM			
Client ID:		Run ID: WETCHEM_190814R				SeqNo: 5845092		Prep Date: 8/14/2019		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Chromium, Hexavalent	4.324	0.98	4.902	0.8182	71.5	75-125	4.078	5.83	20	S	

The following samples were analyzed in this batch:

19080644-01A

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

Client: Caerus Oil and Gas LLC
Work Order: 19080644
Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **140987** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

MBLK		Sample ID: MB-R268521-140987				Units: mmhos/cm @25°		Analysis Date: 8/16/2019 03:10 PM		
Client ID:		Run ID: WETCHEM_190816X				SeqNo: 5851035		Prep Date: 8/16/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Electrical Conductivity @ Saturation U 0.0050

DUP		Sample ID: 19080597-06A DUP				Units: mmhos/cm @25°		Analysis Date: 8/16/2019 03:10 PM		
Client ID:		Run ID: WETCHEM_190816X				SeqNo: 5851043		Prep Date: 8/16/2019		DF: 20
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Electrical Conductivity @ Saturation 0.0379 0.0050 0 0 0 0.0313 19.1 50

LCS1		Sample ID: LCS 1-140987				Units: mmhos/cm @25°		Analysis Date: 8/16/2019 03:10 PM		
Client ID:		Run ID: WETCHEM_190816X				SeqNo: 5851036		Prep Date: 8/16/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Electrical Conductivity @ Saturation 0.01534 0.0050 0.0149 0 103 92-111 0

LCS2		Sample ID: LCS 2-140987				Units: mmhos/cm @25°		Analysis Date: 8/16/2019 03:10 PM		
Client ID:		Run ID: WETCHEM_190816X				SeqNo: 5851054		Prep Date: 8/16/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Electrical Conductivity @ Saturation 0.598 0.0050 0.592 0 101 88-114 0

The following samples were analyzed in this batch:

19080644-01A

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

Client: Caerus Oil and Gas LLC
 Work Order: 19080644
 Project: L19-595 Dumpline

QC BATCH REPORT

Batch ID: **R268338** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R268338				Units: % of sample		Analysis Date: 8/14/2019 02:53 PM		
Client ID:		Run ID: MOIST_190814J				SeqNo: 5846568		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-R268338					Units: % of sample		Analysis Date: 8/14/2019 02:53 PM		
Client ID:			Run ID: MOIST_190814J			SeqNo: 5846567		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: 19080517-33A DUP				Units: % of sample			Analysis Date: 8/14/2019 02:53 PM		
Client ID:				Run ID: MOIST_190814J				SeqNo: 5846547		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

Moisture 8.33 0.10 0 0 0 0-0 8.06 3.29 10

DUP		Sample ID: 19080789-01B DUP				Units: % of sample		Analysis Date: 8/14/2019 02:53 PM		
Client ID:		Run ID: MOIST_190814J			SeqNo: 5846558		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 14.29 0.10 0 0 0 0-0 14.35 0.419 10

The following samples were analyzed in this batch:

19080644-01A

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



☐ ALS Environmental
10450 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

Chain of Custody Form

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☒ ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

Customer Information		Project Information					Parameter/Method Request for Analysis													
Purchase Order		Project Name	L19-595 Dumlaine				A	TPH GRO/DRO												
Work Order		Project Number					B	BTEX												
Company Name	Caerus Oil and Gas LLC	Bill To Company	Caerus Oil and Gas LLC				C	Table 910 PAHs												
Send Report To	Jake Janicek	Invoice Attn	Jake Janicek				D	Table 910 Metals												
Address	143 Diamond Ave	Address	143 Diamond Ave				E	EC												
City/State/Zip	Parachute, CO 81635	City/State/Zip	Parachute, CO 81635				F	SAR												
Phone	970-778-2314	Phone	970-778-2314				G	pH												
Fax		Fax					H	Benzene												
e-Mail Address	jjanicek@caerusoilandgas.com		jjanicek@caerusoilandgas.com				I	Arsenic												
								J												
No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold			
1	20190808-L19-595-POR@6'	8-8-19	1430	SOIL	✓	2	X	X	X	X	X	X	X							
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Sampler(s): Please Print & Sign <i>Jake Janicek</i>		Shipment Method: Lab Hub		Turnaround Time in Business Days (BD): <input type="checkbox"/> 10 BD <input checked="" type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD				Results Due Date:	
Relinquished by: <i>[Signature]</i>		Date: 8-8-19	Time: 1520	Received by: <i>[Signature]</i>		Date: 8-8-19	Time: 1520	Notes:	
Relinquished by: <i>[Signature]</i>		Date: 8-8-19	Time: 1830	Received by (Laboratory): <i>[Signature]</i>		Date: 8/9/19	Time: 0900	QC Package: (Check Box Below)	
Logged by (Laboratory): <i>DES</i>		Date: 8/9/19	Time: 1045	Checked by (Laboratory): <i>[Signature]</i>		ALS Cooler ID 822		Cooler Temp 4.6	<input checked="" type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Raw Data
									<input type="checkbox"/> TRRP LRC <input type="checkbox"/> TRRP Level IV
									<input type="checkbox"/> Level IV: SW846 Methods/CLP like
									<input type="checkbox"/> Other:

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-None/4

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.

Sample Receipt Checklist

Client Name: **CAERUS**

Date/Time Received: **09-Aug-19 09:00**

Work Order: **19080644**

Received by: **DS**

Checklist completed by Diane Shaw
eSignature

09-Aug-19
Date

Reviewed by: Chad Whelton
eSignature

09-Aug-19
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>4.6/4.6 c</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>8/9/2019 10:50:49 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: