FORM
27
Rev 6/99

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109

FOR OGCC USE ONLY
REM 9911
Document 2527215

OGCC Employee:
☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV
Tracking No:

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☑ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☑ Site/Facility Closure ☐ Other (describe):

OGCC Operator Number: 10456
Name of Operator: Caerus Piceance LLC
Address: 120 North Railroad Ave, Suite D
City: Parachute State: CO Zip: 81635

Contact Name and Telephone:
Jake Janicek
No: 970-285-9606
Fax: 970-285-9619

API Number: NA
Facility Name: Starkey 1 Partially Buried Vault Removal
Well Name: NA

County: Garfield
Facility Number: Spill/Release Point ID 448190
Well Number: NA

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SESW, 31, 6S, 96W, 6
Latitude: 39.475120 Longitude: -108.150610

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☐ Y ☑ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): non-cropland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Parachute loam, 25 to 65 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Starkey Gulch

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
☑ Soils	25 feet length x 25 feet width x 12 feet deep	Soil screening and laboratory analytical
☐ Vegetation		
☐ Groundwater		
☐ Surface Water		

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Please refer to COGCC Document ID 401134668

Describe how source is to be removed:

The partially buried vessel has been taken out of service and impacted soil will be removed.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Impacted soil will be removed and remediated on site.

Submit Page 2 with Page 1

FORM 27 Rev 6/99

Page 2

State of Colorado
Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801, Denver, Colorado 80203
(303)894-2100 Fax:(303)894-2109

Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

REMEDIATION WORKPLAN (Cont.)

OGCC Employee:

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

Groundwater has not been encountered during any portion of this project.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

Once impacted soil has been removed, the excavation will be backfilled to original grade.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☐ Y ☑ N If yes, describe:

Please see attached document.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Impacted soil removed during remediation activities will be remediated on site.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 10/19/2016 Date Site Investigation Completed: 11/2/2016 Date Remediation Plan Submitted: 11/3/2016

Remediation Start Date: 10/19/2016 Anticipated Completion Date: 11/2/2016 Actual Completion Date: _____

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Jake Janicek Signed: _____

Title: EHS Professional Date: 11/3/2016

OGCC Approved: Carlos A Lujan, Ph.D. Title: Digitally signed by Carlos A Lujan, Ph.D. DN: cn=Carlos A Lujan, Ph.D., o=Colorado Oil and Gas Conservation Commission (COGCC), ou=Environmental NW Region, email=carlos.lujan@state.co.us, c=US Date: 2016.11.07 16:57:38 -07'00' Date: _____

COA: 1) Submit a short Waste Management Plan indicating at the minimum: a) HC concentrations of impacted material removed, b) Volume to be treated, c) A figure showing the treatment cell location and estimated area, d) thickness of spread out soil, e) Treatment plan (nutrients application, watering, moving/aerating soil, construction of berms, and soil compaction).

Starkey 1 (Location ID 335383)
Partially Buried Vault Removal
Spill/Release Point ID 448190
Form 27 (Site/Facility Closure)
Narrative Attachment

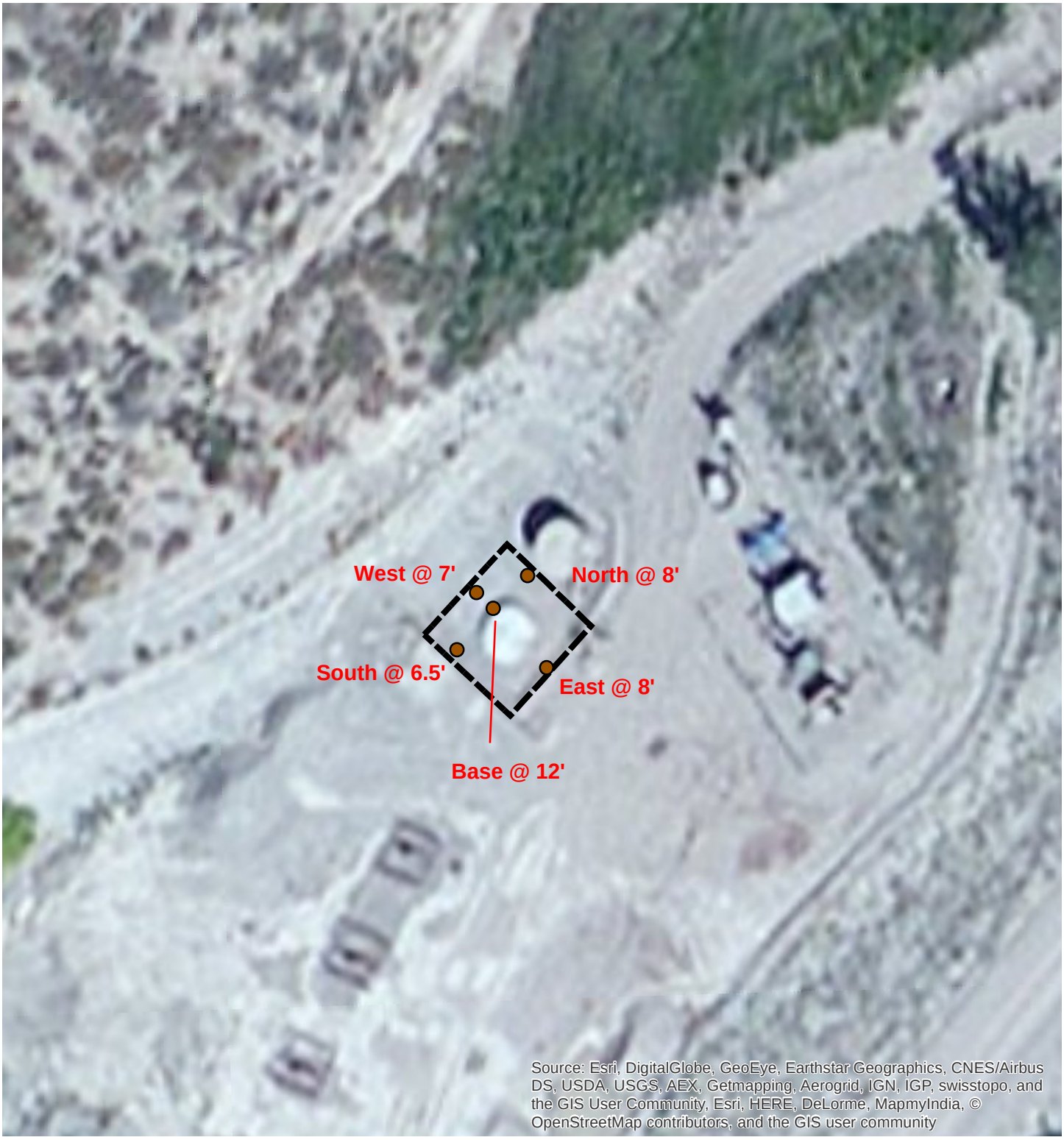
This Form 27 (Site/Facility Closure) was prepared for the purpose of describing completed work associated with the assessment of soil during the removal of a partially buried vessel (PBV) at the Starkey 1 (Location ID 335383) pad location in the Caerus Piceance, LLC (Caerus) area of operations.

Upon removing the PBV from the ground, visual observations and field screening of soil around and below the tank indicated that hydrocarbon-impacted soil was present. Excavation of the impacted soil was conducted and field screen readings were utilized to determine the extent of the impacts.

On October 19, 2016, confirmation soil samples were collected from the soil around and beneath the removed PBV (Base@12', North@8', East@8', South@6.5', and West@7'). Soil samples were submitted for laboratory analysis of all COGCC Table 910-1 analytes. Analytical results indicate all soil samples were in compliance with COGCC Table 910-1 Concentration Levels for all analytes or were within background concentrations, except for the electrical conductivity (EC) measurements of soil samples Base@12', East@8', South@6.5', and West@7' and the arsenic concentration of soil sample Base@12'. However, soil samples Base@12', East@8', South@6.5', and West@7' were collected at a depth greater than three feet below the ground surface and the COGCC does not apply the Concentration Level for EC to soils deeper than three feet below the ground surface. The elevated arsenic concentration observed in soil sample Base@12' originated 12 feet below ground surface (bgs) from material that was scratched off of solid rock that should be considered a confining layer thus preventing any existing impact from leaching into soil deeper than 12 feet bgs.

Background samples were collected from an undisturbed area near the Chevron 41-8D pad (COGCC Location ID 324198). Sample locations are depicted on the attached Site Map and laboratory analytical results are summarized in the attached analytical table. Laboratory analytical reports are included as an attachment.

Based on removal of the PBV, soil analytical results, and the presence of a confining layer, Caerus believes that no further excavation activities are warranted and respectfully requests that removal of the soil impacted by the leaking tank identified above be considered complete, and the removal of the PBV be considered formally closed.



Legend

- Sample Points
- Excavation Extent

0 25 50 100

Feet

N

FIGURE 1
SITE MAP
STARKEY 1 PBV Removal
Garfield County, Colorado

CAERUS OIL AND GAS LLC

TABLE 1
STARKEY 1 PBV REMOVAL
SOIL ANALYTICAL RESULTS
CAERUS OIL AND GAS
PICEANCE BASIN, COLORADO

PARAMETER	COGCC CONCENTRATION LEVELS	UNITS	Base @ 12'	North @ 8'	East @ 8'	South @ 6.5'	West @ 7'	BKGD 1*
Sample Date			10/19/2016	10/19/2016	10/19/2016	10/19/2016	10/19/2016	7/22/2013
Sample Type			Confirmation	Confirmation	Confirmation	Confirmation	Confirmation	Background
Arsenic	0.39	mg/kg	76	3.7	4.2	11	11	39
Barium	15,000	mg/kg	110	180	160	110	210	NA
Cadmium	70	mg/kg	1.4	ND	ND	ND	ND	NA
Chromium (III)	120,000	mg/kg	5.3	8.4	10	11	11	NA
Chromium (VI)	23	mg/kg	ND	ND	ND	ND	ND	NA
Copper	3,100	mg/kg	9.1	15	8.2	18	19	NA
Lead	400	mg/kg	17	6.3	6.4	14	15	NA
Mercury	23	mg/kg	0.19	ND	0.046	0.031	0.034	NA
Nickel	1,600	mg/kg	13	8.7	8.4	17	20	NA
Selenium	390	mg/kg	ND	ND	ND	ND	ND	NA
Silver	390	mg/kg	ND	ND	ND	ND	ND	NA
Zinc	23,000	mg/kg	67	27	35	69	77	NA
EC	4 or 2x background	mmhos/cm	8.4	2.0	7.6	7.5	7.5	NA
pH	6-9	SU	7.6	8.0	8.0	7.8	8.0	NA
SAR	12	unitless	2.3	0.40	0.54	2.2	1.9	NA
TPH-DRO			83	110	92	88	200	NA
TPH-GRO			66	ND	ND	ND	69	NA
TPH	500	mg/kg	149	110	92	88	269	NA
Benzene	0.17	mg/kg	ND	ND	ND	ND	ND	NA
Toluene	85	mg/kg	ND	ND	ND	ND	ND	NA
Ethylbenzene	100	mg/kg	0.10	ND	0.17	ND	ND	NA
Total Xylenes	175	mg/kg	1.2	0.13	1.4	ND	ND	NA
Acenaphthene	1,000	mg/kg	ND	ND	ND	ND	ND	NA
Anthracene	1,000	mg/kg	ND	ND	ND	ND	ND	NA
Benz(a)anthracene	0.22	mg/kg	ND	ND	ND	ND	ND	NA
Benzo(b)fluoranthene	0.22	mg/kg	ND	ND	ND	ND	0.053	NA
Benzo(k)fluoranthene	2.2	mg/kg	ND	ND	ND	ND	ND	NA
Benzo(a)pyrene	0.022	mg/kg	ND	ND	ND	ND	0.018	NA
Chrysene	22	mg/kg	ND	ND	ND	ND	ND	NA
Dibenzo(a,h)anthracene	0.022	mg/kg	ND	ND	ND	ND	ND	NA
Fluoranthene	1,000	mg/kg	ND	ND	ND	ND	0.034	NA
Fluorene	1,000	mg/kg	ND	ND	ND	ND	ND	NA
Indeno(1,2,3,c,d)pyrene	0.22	mg/kg	ND	ND	ND	ND	0.034	NA
Naphthalene	23	mg/kg	ND	ND	ND	ND	ND	NA
Pyrene	1,000	mg/kg	ND	ND	ND	ND	ND	NA

Notes:
* This background sample was collected near another pad location, Chevron 41-8D (COGCC Location ID 324198)
< - less than the stated reporting limit
Highlight - indicates result exceeds the COGCC concentration level
COGCC - Colorado Oil and Gas Conservation Commission
EC - electrical conductivity
mg/kg - milligrams per kilogram
mmhos/cm - millimhos per centimeter
NA - not analyzed
SAR - sodium adsorption ratio
SU - standard unit
TPH-GRO - total petroleum hydrocarbons-gasoline range organics
TPH-DRO - total petroleum hydrocarbons-diesel range organics
TPH - combination of TPH-GRO and TPH-DRO

29-Oct-2016

Jake Janicek
Caerus Oil and Gas LLC
120 N. Railroad Ave. Suite D
Parachute, CO 81635

Re: **Starkey 1 PBV Removal** Work Order: **16101354**

Dear Jake,

ALS Environmental received 5 samples on 20-Oct-2016 09:30 AM for the analyses presented in the following report.

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

Sample results are compliant with NELAP standard requirements and QC 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.

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 998501

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 29-Oct-16

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: **16101354**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
16101354-01	Base @ 12'	Soil		10/19/2016 14:23	10/20/2016 09:30	☐
16101354-02	North @ 8'	Soil		10/19/2016 10:57	10/20/2016 09:30	☐
16101354-03	East @ 8'	Soil		10/19/2016 11:02	10/20/2016 09:30	☐
16101354-04	South @ 6.5'	Soil		10/19/2016 14:23	10/20/2016 09:30	☐
16101354-05	West @ 7'	Soil		10/19/2016 14:31	10/20/2016 09:30	☐

ALS Group USA, Corp

Date: 29-Oct-16

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: 16101354

Case Narrative

Batch 93579, Method CR6_7196_S, Sample 16101354-01B MS/MSD: The MS and MSD recovery was below the lower control limit for Hexavalent Chromium. The corresponding result in the parent sample may be biased low.

ALS Group USA, Corp

Date: 29-Oct-16

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
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.

Acronym	Description
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

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
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, Corp

Date: *29-Oct-16*

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: 16101354
Sample ID: Base @ 12'
Lab ID: 16101354-01
Collection Date: 10/19/2016 02:23 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3546 / 10/25/16	Analyst: **IT**
DRO (C10-C28)	**83**		**5.7**	**mg/Kg-dry**	1	10/26/2016 06:46 PM
Surr: 4-Terphenyl-d14	*58.7*		*39-133*	*%REC*	1	10/26/2016 06:46 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 10/21/16	Analyst: **IT**
GRO (C6-C10)	**66**		**3.2**	**mg/Kg-dry**	1	10/22/2016 05:44 AM
Surr: Toluene-d8	*102*		*50-150*	*%REC*	1	10/22/2016 05:44 AM
MERCURY BY CVAA			**SW7471B**		Prep: SW7471 / 10/27/16	Analyst: **LR**
Mercury	**0.19**		**0.016**	**mg/Kg-dry**	1	10/27/2016 06:47 PM
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 10/25/16	Analyst: **RH**
Arsenic	**76**		**0.37**	**mg/Kg-dry**	1	10/28/2016 08:41 AM
Barium	**110**		**0.37**	**mg/Kg-dry**	1	10/28/2016 08:41 AM
Cadmium	**1.4**		**0.74**	**mg/Kg-dry**	1	10/28/2016 08:41 AM
Chromium	**5.3**		**0.37**	**mg/Kg-dry**	1	10/28/2016 08:41 AM
Copper	**9.1**		**0.74**	**mg/Kg-dry**	1	10/28/2016 08:41 AM
Lead	**17**		**0.37**	**mg/Kg-dry**	1	10/28/2016 08:41 AM
Nickel	**13**		**0.37**	**mg/Kg-dry**	1	10/28/2016 08:41 AM
Selenium	ND		0.74	mg/Kg-dry	1	10/28/2016 08:41 AM
Silver	ND		0.37	mg/Kg-dry	1	10/28/2016 08:41 AM
Zinc	**67**		**0.74**	**mg/Kg-dry**	1	10/28/2016 08:41 AM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 10/24/16	Analyst: **RH**
Calcium	**530**		**5.0**	**mg/L**	10	10/27/2016 04:38 AM
Magnesium	**230**		**2.0**	**mg/L**	10	10/27/2016 04:38 AM
Sodium	**260**		**2.0**	**mg/L**	10	10/27/2016 04:38 AM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 10/24/16	Analyst: **RH**
Sodium Adsorption Ratio	**2.3**		**0.010**	**none**	1	10/26/2016
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3546 / 10/25/16	Analyst: **RS**
Acenaphthene	ND		7.6	µg/Kg-dry	1	10/26/2016 03:59 PM
Anthracene	ND		7.6	µg/Kg-dry	1	10/26/2016 03:59 PM
Benzo(a)anthracene	ND		7.6	µg/Kg-dry	1	10/26/2016 03:59 PM
Benzo(a)pyrene	ND		7.6	µg/Kg-dry	1	10/26/2016 03:59 PM
Benzo(b)fluoranthene	ND		7.6	µg/Kg-dry	1	10/26/2016 03:59 PM
Benzo(k)fluoranthene	ND		7.6	µg/Kg-dry	1	10/26/2016 03:59 PM
Chrysene	ND		7.6	µg/Kg-dry	1	10/26/2016 03:59 PM
Dibenzo(a,h)anthracene	ND		7.6	µg/Kg-dry	1	10/26/2016 03:59 PM
Fluoranthene	ND		7.6	µg/Kg-dry	1	10/26/2016 03:59 PM

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

ALS Group USA, Corp

Date: *29-Oct-16*

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: 16101354
Sample ID: Base @ 12'
Lab ID: 16101354-01
Collection Date: 10/19/2016 02:23 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.6	µg/Kg-dry	1	10/26/2016 03:59 PM
Indeno(1,2,3-cd)pyrene	ND		7.6	µg/Kg-dry	1	10/26/2016 03:59 PM
Naphthalene	ND		7.6	µg/Kg-dry	1	10/26/2016 03:59 PM
Pyrene	ND		7.6	µg/Kg-dry	1	10/26/2016 03:59 PM
Surr: 2-Fluorobiphenyl	*76.3*		*12-100*	*%REC*	1	10/26/2016 03:59 PM
Surr: 4-Terphenyl-d14	*76.8*		*25-137*	*%REC*	1	10/26/2016 03:59 PM
Surr: Nitrobenzene-d5	*71.0*		*37-107*	*%REC*	1	10/26/2016 03:59 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 10/21/16	Analyst: **BG**
Benzene	ND		0.039	mg/Kg-dry	1	10/26/2016 07:32 AM
Ethylbenzene	**0.10**		**0.039**	**mg/Kg-dry**	1	10/26/2016 07:32 AM
m,p-Xylene	**1.1**		**0.078**	**mg/Kg-dry**	1	10/26/2016 07:32 AM
o-Xylene	**0.14**		**0.039**	**mg/Kg-dry**	1	10/26/2016 07:32 AM
Toluene	ND		0.039	mg/Kg-dry	1	10/26/2016 07:32 AM
Xylenes, Total	**1.2**		**0.12**	**mg/Kg-dry**	1	10/26/2016 07:32 AM
Surr: 1,2-Dichloroethane-d4	*98.4*		*70-130*	*%REC*	1	10/26/2016 07:32 AM
Surr: 4-Bromofluorobenzene	*97.4*		*70-130*	*%REC*	1	10/26/2016 07:32 AM
Surr: Dibromofluoromethane	*90.8*		*70-130*	*%REC*	1	10/26/2016 07:32 AM
Surr: Toluene-d8	*101*		*70-130*	*%REC*	1	10/26/2016 07:32 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 10/24/16	Analyst: **JB**
Electrical Conductivity @ Saturation	**8.4**		**0.25**	**mmhos/cm @2**	50	10/25/2016 12:30 PM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **MB**
Chromium, Trivalent	**5.3**		**0.57**	**mg/Kg-dry**	1	10/28/2016 01:10 PM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 10/25/16	Analyst: **BWW**
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	10/26/2016 05:00 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**13**		**0.050**	**% of sample**	1	10/24/2016 06:27 PM
PH			**SW9045D**		Prep: EXTRACT / 10/24/16	Analyst: **LW**
pH	**7.6**			**s.u.**	1	10/24/2016 04:00 PM

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

ALS Group USA, Corp

Date: *29-Oct-16*

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: 16101354
Sample ID: North @ 8'
Lab ID: 16101354-02
Collection Date: 10/19/2016 10:57 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3546 / 10/25/16	Analyst: **IT**
DRO (C10-C28)	**110**		**5.4**	**mg/Kg-dry**	1	10/26/2016 07:16 PM
Surr: 4-Terphenyl-d14	*57.5*		*39-133*	*%REC*	1	10/26/2016 07:16 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 10/21/16	Analyst: **IT**
GRO (C6-C10)	ND		3.2	mg/Kg-dry	1	10/22/2016 06:09 AM
Surr: Toluene-d8	*90.6*		*50-150*	*%REC*	1	10/22/2016 06:09 AM
MERCURY BY CVAA			**SW7471B**		Prep: SW7471 / 10/27/16	Analyst: **LR**
Mercury	ND		0.016	mg/Kg-dry	1	10/27/2016 06:50 PM
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 10/25/16	Analyst: **RH**
Arsenic	**3.7**		**0.44**	**mg/Kg-dry**	1	10/28/2016 09:03 AM
Barium	**180**		**0.44**	**mg/Kg-dry**	1	10/28/2016 09:03 AM
Cadmium	ND		0.89	mg/Kg-dry	1	10/28/2016 09:03 AM
Chromium	**8.4**		**0.44**	**mg/Kg-dry**	1	10/28/2016 09:03 AM
Copper	**15**		**0.89**	**mg/Kg-dry**	1	10/28/2016 09:03 AM
Lead	**6.3**		**0.44**	**mg/Kg-dry**	1	10/28/2016 09:03 AM
Nickel	**8.7**		**0.44**	**mg/Kg-dry**	1	10/28/2016 09:03 AM
Selenium	ND		0.89	mg/Kg-dry	1	10/28/2016 09:03 AM
Silver	ND		0.44	mg/Kg-dry	1	10/28/2016 09:03 AM
Zinc	**27**		**0.89**	**mg/Kg-dry**	1	10/28/2016 09:03 AM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 10/24/16	Analyst: **RH**
Calcium	**190**		**5.0**	**mg/L**	10	10/27/2016 04:43 AM
Magnesium	**38**		**2.0**	**mg/L**	10	10/27/2016 04:43 AM
Sodium	**23**		**2.0**	**mg/L**	10	10/27/2016 04:43 AM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 10/24/16	Analyst: **RH**
Sodium Adsorption Ratio	**0.40**		**0.010**	**none**	1	10/26/2016
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3546 / 10/25/16	Analyst: **RS**
Acenaphthene	ND		7.2	µg/Kg-dry	1	10/26/2016 05:52 PM
Anthracene	ND		7.2	µg/Kg-dry	1	10/26/2016 05:52 PM
Benzo(a)anthracene	ND		7.2	µg/Kg-dry	1	10/26/2016 05:52 PM
Benzo(a)pyrene	ND		7.2	µg/Kg-dry	1	10/26/2016 05:52 PM
Benzo(b)fluoranthene	ND		7.2	µg/Kg-dry	1	10/26/2016 05:52 PM
Benzo(k)fluoranthene	ND		7.2	µg/Kg-dry	1	10/26/2016 05:52 PM
Chrysene	ND		7.2	µg/Kg-dry	1	10/26/2016 05:52 PM
Dibenzo(a,h)anthracene	ND		7.2	µg/Kg-dry	1	10/26/2016 05:52 PM
Fluoranthene	ND		7.2	µg/Kg-dry	1	10/26/2016 05:52 PM

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

ALS Group USA, Corp

Date: *29-Oct-16*

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: 16101354
Sample ID: North @ 8'
Lab ID: 16101354-02
Collection Date: 10/19/2016 10:57 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.2	µg/Kg-dry	1	10/26/2016 05:52 PM
Indeno(1,2,3-cd)pyrene	ND		7.2	µg/Kg-dry	1	10/26/2016 05:52 PM
Naphthalene	ND		7.2	µg/Kg-dry	1	10/26/2016 05:52 PM
Pyrene	ND		7.2	µg/Kg-dry	1	10/26/2016 05:52 PM
Surr: 2-Fluorobiphenyl	*75.8*		*12-100*	*%REC*	1	10/26/2016 05:52 PM
Surr: 4-Terphenyl-d14	*75.2*		*25-137*	*%REC*	1	10/26/2016 05:52 PM
Surr: Nitrobenzene-d5	*66.2*		*37-107*	*%REC*	1	10/26/2016 05:52 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 10/21/16	Analyst: **AK**
Benzene	ND		0.039	mg/Kg-dry	1	10/25/2016 11:36 AM
Ethylbenzene	ND		0.039	mg/Kg-dry	1	10/25/2016 11:36 AM
m,p-Xylene	**0.11**		**0.078**	**mg/Kg-dry**	1	10/25/2016 11:36 AM
o-Xylene	ND		0.039	mg/Kg-dry	1	10/25/2016 11:36 AM
Toluene	ND		0.039	mg/Kg-dry	1	10/25/2016 11:36 AM
Xylenes, Total	**0.13**		**0.12**	**mg/Kg-dry**	1	10/25/2016 11:36 AM
Surr: 1,2-Dichloroethane-d4	*91.6*		*70-130*	*%REC*	1	10/25/2016 11:36 AM
Surr: 4-Bromofluorobenzene	*94.2*		*70-130*	*%REC*	1	10/25/2016 11:36 AM
Surr: Dibromofluoromethane	*83.1*		*70-130*	*%REC*	1	10/25/2016 11:36 AM
Surr: Toluene-d8	*93.4*		*70-130*	*%REC*	1	10/25/2016 11:36 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 10/24/16	Analyst: **JB**
Electrical Conductivity @ Saturation	**2.0**		**0.25**	**mmhos/cm @2**	50	10/25/2016 12:30 PM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **MB**
Chromium, Trivalent	**8.4**		**0.57**	**mg/Kg-dry**	1	10/28/2016 01:10 PM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 10/25/16	Analyst: **BWW**
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	10/26/2016 05:00 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**13**		**0.050**	**% of sample**	1	10/24/2016 06:27 PM
PH			**SW9045D**		Prep: EXTRACT / 10/24/16	Analyst: **LW**
pH	**8.0**			**s.u.**	1	10/24/2016 04:00 PM

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

ALS Group USA, Corp

Date: *29-Oct-16*

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: 16101354
Sample ID: East @ 8'
Lab ID: 16101354-03
Collection Date: 10/19/2016 11:02 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3546 / 10/25/16	Analyst: **IT**
DRO (C10-C28)	**92**		**5.3**	**mg/Kg-dry**	1	10/26/2016 07:45 PM
Surr: 4-Terphenyl-d14	*60.9*		*39-133*	*%REC*	1	10/26/2016 07:45 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 10/21/16	Analyst: **IT**
GRO (C6-C10)	ND		2.9	mg/Kg-dry	1	10/22/2016 06:34 AM
Surr: Toluene-d8	*90.7*		*50-150*	*%REC*	1	10/22/2016 06:34 AM
MERCURY BY CVAA			**SW7471B**		Prep: SW7471 / 10/27/16	Analyst: **LR**
Mercury	**0.046**		**0.015**	**mg/Kg-dry**	1	10/27/2016 06:52 PM
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 10/25/16	Analyst: **RH**
Arsenic	**4.2**		**0.43**	**mg/Kg-dry**	1	10/28/2016 09:08 AM
Barium	**160**		**0.43**	**mg/Kg-dry**	1	10/28/2016 09:08 AM
Cadmium	ND		0.86	mg/Kg-dry	1	10/28/2016 09:08 AM
Chromium	**10**		**0.43**	**mg/Kg-dry**	1	10/28/2016 09:08 AM
Copper	**8.2**		**0.86**	**mg/Kg-dry**	1	10/28/2016 09:08 AM
Lead	**6.4**		**0.43**	**mg/Kg-dry**	1	10/28/2016 09:08 AM
Nickel	**8.4**		**0.43**	**mg/Kg-dry**	1	10/28/2016 09:08 AM
Selenium	ND		0.86	mg/Kg-dry	1	10/28/2016 09:08 AM
Silver	ND		0.43	mg/Kg-dry	1	10/28/2016 09:08 AM
Zinc	**35**		**0.86**	**mg/Kg-dry**	1	10/28/2016 09:08 AM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 10/24/16	Analyst: **RH**
Calcium	**570**		**5.0**	**mg/L**	10	10/27/2016 04:49 AM
Magnesium	**79**		**2.0**	**mg/L**	10	10/27/2016 04:49 AM
Sodium	**52**		**2.0**	**mg/L**	10	10/27/2016 04:49 AM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 10/24/16	Analyst: **RH**
Sodium Adsorption Ratio	**0.54**		**0.010**	**none**	1	10/26/2016
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3546 / 10/25/16	Analyst: **RS**
Acenaphthene	ND		7.1	µg/Kg-dry	1	10/26/2016 04:45 PM
Anthracene	ND		7.1	µg/Kg-dry	1	10/26/2016 04:45 PM
Benzo(a)anthracene	ND		7.1	µg/Kg-dry	1	10/26/2016 04:45 PM
Benzo(a)pyrene	ND		7.1	µg/Kg-dry	1	10/26/2016 04:45 PM
Benzo(b)fluoranthene	ND		7.1	µg/Kg-dry	1	10/26/2016 04:45 PM
Benzo(k)fluoranthene	ND		7.1	µg/Kg-dry	1	10/26/2016 04:45 PM
Chrysene	ND		7.1	µg/Kg-dry	1	10/26/2016 04:45 PM
Dibenzo(a,h)anthracene	ND		7.1	µg/Kg-dry	1	10/26/2016 04:45 PM
Fluoranthene	ND		7.1	µg/Kg-dry	1	10/26/2016 04:45 PM

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

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: 16101354
Sample ID: East @ 8'
Lab ID: 16101354-03
Collection Date: 10/19/2016 11:02 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.1	µg/Kg-dry	1	10/26/2016 04:45 PM
Indeno(1,2,3-cd)pyrene	ND		7.1	µg/Kg-dry	1	10/26/2016 04:45 PM
Naphthalene	ND		7.1	µg/Kg-dry	1	10/26/2016 04:45 PM
Pyrene	ND		7.1	µg/Kg-dry	1	10/26/2016 04:45 PM
Surr: 2-Fluorobiphenyl	*79.7*		*12-100*	*%REC*	1	10/26/2016 04:45 PM
Surr: 4-Terphenyl-d14	*83.3*		*25-137*	*%REC*	1	10/26/2016 04:45 PM
Surr: Nitrobenzene-d5	*71.8*		*37-107*	*%REC*	1	10/26/2016 04:45 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 10/21/16	Analyst: **BG**
Benzene	ND		0.035	mg/Kg-dry	1	10/26/2016 07:58 AM
Ethylbenzene	**0.17**		**0.035**	**mg/Kg-dry**	1	10/26/2016 07:58 AM
m,p-Xylene	**1.2**		**0.071**	**mg/Kg-dry**	1	10/26/2016 07:58 AM
o-Xylene	**0.18**		**0.035**	**mg/Kg-dry**	1	10/26/2016 07:58 AM
Toluene	ND		0.035	mg/Kg-dry	1	10/26/2016 07:58 AM
Xylenes, Total	**1.4**		**0.11**	**mg/Kg-dry**	1	10/26/2016 07:58 AM
Surr: 1,2-Dichloroethane-d4	*99.8*		*70-130*	*%REC*	1	10/26/2016 07:58 AM
Surr: 4-Bromofluorobenzene	*94.2*		*70-130*	*%REC*	1	10/26/2016 07:58 AM
Surr: Dibromofluoromethane	*91.6*		*70-130*	*%REC*	1	10/26/2016 07:58 AM
Surr: Toluene-d8	*99.2*		*70-130*	*%REC*	1	10/26/2016 07:58 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 10/24/16	Analyst: **JB**
Electrical Conductivity @ Saturation	**7.6**		**0.25**	**mmhos/cm @2**	50	10/25/2016 12:30 PM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **MB**
Chromium, Trivalent	**10**		**0.54**	**mg/Kg-dry**	1	10/28/2016 01:10 PM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 10/25/16	Analyst: **BWW**
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	10/26/2016 05:00 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**8.1**		**0.050**	**% of sample**	1	10/24/2016 06:27 PM
PH			**SW9045D**		Prep: EXTRACT / 10/24/16	Analyst: **LW**
pH	**8.0**			**s.u.**	1	10/24/2016 04:00 PM

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

ALS Group USA, Corp

Date: *29-Oct-16*

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: 16101354
Sample ID: South @ 6.5'
Lab ID: 16101354-04
Collection Date: 10/19/2016 02:23 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3546 / 10/25/16	Analyst: **IT**
DRO (C10-C28)	**88**		**5.7**	**mg/Kg-dry**	1	10/26/2016 08:14 PM
Surr: 4-Terphenyl-d14	*50.8*		*39-133*	*%REC*	1	10/26/2016 08:14 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 10/21/16	Analyst: **IT**
GRO (C6-C10)	ND		3.5	mg/Kg-dry	1	10/22/2016 06:58 AM
Surr: Toluene-d8	*89.0*		*50-150*	*%REC*	1	10/22/2016 06:58 AM
MERCURY BY CVAA			**SW7471B**		Prep: SW7471 / 10/27/16	Analyst: **LR**
Mercury	**0.031**		**0.017**	**mg/Kg-dry**	1	10/27/2016 06:55 PM
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 10/25/16	Analyst: **RH**
Arsenic	**11**		**0.43**	**mg/Kg-dry**	1	10/28/2016 09:14 AM
Barium	**110**		**0.43**	**mg/Kg-dry**	1	10/28/2016 09:14 AM
Cadmium	ND		0.86	mg/Kg-dry	1	10/28/2016 09:14 AM
Chromium	**11**		**0.43**	**mg/Kg-dry**	1	10/28/2016 09:14 AM
Copper	**18**		**0.86**	**mg/Kg-dry**	1	10/28/2016 09:14 AM
Lead	**14**		**0.43**	**mg/Kg-dry**	1	10/28/2016 09:14 AM
Nickel	**17**		**0.43**	**mg/Kg-dry**	1	10/28/2016 09:14 AM
Selenium	ND		0.86	mg/Kg-dry	1	10/28/2016 09:14 AM
Silver	ND		0.43	mg/Kg-dry	1	10/28/2016 09:14 AM
Zinc	**69**		**0.86**	**mg/Kg-dry**	1	10/28/2016 09:14 AM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 10/24/16	Analyst: **RH**
Calcium	**380**		**5.0**	**mg/L**	10	10/27/2016 04:54 AM
Magnesium	**200**		**2.0**	**mg/L**	10	10/27/2016 04:54 AM
Sodium	**210**		**2.0**	**mg/L**	10	10/27/2016 04:54 AM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 10/24/16	Analyst: **RH**
Sodium Adsorption Ratio	**2.2**		**0.010**	**none**	1	10/26/2016
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3546 / 10/25/16	Analyst: **RS**
Acenaphthene	ND		7.6	µg/Kg-dry	1	10/26/2016 05:07 PM
Anthracene	ND		7.6	µg/Kg-dry	1	10/26/2016 05:07 PM
Benzo(a)anthracene	ND		7.6	µg/Kg-dry	1	10/26/2016 05:07 PM
Benzo(a)pyrene	ND		7.6	µg/Kg-dry	1	10/26/2016 05:07 PM
Benzo(b)fluoranthene	ND		7.6	µg/Kg-dry	1	10/26/2016 05:07 PM
Benzo(k)fluoranthene	ND		7.6	µg/Kg-dry	1	10/26/2016 05:07 PM
Chrysene	ND		7.6	µg/Kg-dry	1	10/26/2016 05:07 PM
Dibenzo(a,h)anthracene	ND		7.6	µg/Kg-dry	1	10/26/2016 05:07 PM
Fluoranthene	ND		7.6	µg/Kg-dry	1	10/26/2016 05:07 PM

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

ALS Group USA, Corp

Date: *29-Oct-16*

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: 16101354
Sample ID: South @ 6.5'
Lab ID: 16101354-04
Collection Date: 10/19/2016 02:23 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.6	µg/Kg-dry	1	10/26/2016 05:07 PM
Indeno(1,2,3-cd)pyrene	ND		7.6	µg/Kg-dry	1	10/26/2016 05:07 PM
Naphthalene	ND		7.6	µg/Kg-dry	1	10/26/2016 05:07 PM
Pyrene	ND		7.6	µg/Kg-dry	1	10/26/2016 05:07 PM
Surr: 2-Fluorobiphenyl	*65.7*		*12-100*	*%REC*	1	10/26/2016 05:07 PM
Surr: 4-Terphenyl-d14	*67.9*		*25-137*	*%REC*	1	10/26/2016 05:07 PM
Surr: Nitrobenzene-d5	*60.2*		*37-107*	*%REC*	1	10/26/2016 05:07 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 10/21/16	Analyst: **BG**
Benzene	ND		0.041	mg/Kg-dry	1	10/25/2016 04:48 AM
Ethylbenzene	ND		0.041	mg/Kg-dry	1	10/25/2016 04:48 AM
m,p-Xylene	ND		0.083	mg/Kg-dry	1	10/25/2016 04:48 AM
o-Xylene	ND		0.041	mg/Kg-dry	1	10/25/2016 04:48 AM
Toluene	ND		0.041	mg/Kg-dry	1	10/25/2016 04:48 AM
Xylenes, Total	ND		0.12	mg/Kg-dry	1	10/25/2016 04:48 AM
Surr: 1,2-Dichloroethane-d4	*98.6*		*70-130*	*%REC*	1	10/25/2016 04:48 AM
Surr: 4-Bromofluorobenzene	*103*		*70-130*	*%REC*	1	10/25/2016 04:48 AM
Surr: Dibromofluoromethane	*84.6*		*70-130*	*%REC*	1	10/25/2016 04:48 AM
Surr: Toluene-d8	*95.7*		*70-130*	*%REC*	1	10/25/2016 04:48 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 10/24/16	Analyst: **JB**
Electrical Conductivity @ Saturation	**7.5**		**0.25**	**mmhos/cm @2**	50	10/25/2016 12:30 PM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **MB**
Chromium, Trivalent	**11**		**0.60**	**mg/Kg-dry**	1	10/28/2016 01:10 PM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 10/25/16	Analyst: **BWW**
Chromium, Hexavalent	ND		1.1	mg/Kg-dry	1	10/26/2016 05:00 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**16**		**0.050**	**% of sample**	1	10/24/2016 06:27 PM
PH			**SW9045D**		Prep: EXTRACT / 10/24/16	Analyst: **LW**
pH	**7.8**			**s.u.**	1	10/24/2016 04:00 PM

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

ALS Group USA, Corp

Date: *29-Oct-16*

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: 16101354
Sample ID: West @ 7'
Lab ID: 16101354-05
Collection Date: 10/19/2016 02:31 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep: SW3546 / 10/25/16	Analyst: **IT**
DRO (C10-C28)	**200**		**5.9**	**mg/Kg-dry**	1	10/26/2016 08:44 PM
Surr: 4-Terphenyl-d14	*51.3*		*39-133*	*%REC*	1	10/26/2016 08:44 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**		Prep: SW5035 / 10/21/16	Analyst: **IT**
GRO (C6-C10)	**69**		**3.7**	**mg/Kg-dry**	1	10/22/2016 07:23 AM
Surr: Toluene-d8	*101*		*50-150*	*%REC*	1	10/22/2016 07:23 AM
MERCURY BY CVAA			**SW7471B**		Prep: SW7471 / 10/27/16	Analyst: **LR**
Mercury	**0.034**		**0.015**	**mg/Kg-dry**	1	10/27/2016 06:57 PM
METALS ANALYSIS BY ICP			**SW846 6010C**		Prep: SW3050B / 10/25/16	Analyst: **RH**
Arsenic	**11**		**0.44**	**mg/Kg-dry**	1	10/28/2016 09:19 AM
Barium	**210**		**0.44**	**mg/Kg-dry**	1	10/28/2016 09:19 AM
Cadmium	ND		0.88	mg/Kg-dry	1	10/28/2016 09:19 AM
Chromium	**11**		**0.44**	**mg/Kg-dry**	1	10/28/2016 09:19 AM
Copper	**19**		**0.88**	**mg/Kg-dry**	1	10/28/2016 09:19 AM
Lead	**15**		**0.44**	**mg/Kg-dry**	1	10/28/2016 09:19 AM
Nickel	**20**		**0.44**	**mg/Kg-dry**	1	10/28/2016 09:19 AM
Selenium	ND		0.88	mg/Kg-dry	1	10/28/2016 09:19 AM
Silver	ND		0.44	mg/Kg-dry	1	10/28/2016 09:19 AM
Zinc	**77**		**0.88**	**mg/Kg-dry**	1	10/28/2016 09:19 AM
SOLUBLE CATIONS FOR SAR			**SW846 6010C**		Prep: USDA Method 20B / 10/24/16	Analyst: **RH**
Calcium	**340**		**5.0**	**mg/L**	10	10/27/2016 05:00 AM
Magnesium	**180**		**2.0**	**mg/L**	10	10/27/2016 05:00 AM
Sodium	**180**		**2.0**	**mg/L**	10	10/27/2016 05:00 AM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep: USDA Method 20B / 10/24/16	Analyst: **RH**
Sodium Adsorption Ratio	**1.9**		**0.010**	**none**	1	10/26/2016
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3546 / 10/25/16	Analyst: **RS**
Acenaphthene	ND		7.8	µg/Kg-dry	1	10/26/2016 05:30 PM
Anthracene	ND		7.8	µg/Kg-dry	1	10/26/2016 05:30 PM
Benzo(a)anthracene	ND		7.8	µg/Kg-dry	1	10/26/2016 05:30 PM
Benzo(a)pyrene	**34**		**7.8**	**µg/Kg-dry**	1	10/26/2016 05:30 PM
Benzo(b)fluoranthene	**53**		**7.8**	**µg/Kg-dry**	1	10/26/2016 05:30 PM
Benzo(k)fluoranthene	ND		7.8	µg/Kg-dry	1	10/26/2016 05:30 PM
Chrysene	ND		7.8	µg/Kg-dry	1	10/26/2016 05:30 PM
Dibenzo(a,h)anthracene	ND		7.8	µg/Kg-dry	1	10/26/2016 05:30 PM
Fluoranthene	**34**		**7.8**	**µg/Kg-dry**	1	10/26/2016 05:30 PM

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

ALS Group USA, Corp

Date: *29-Oct-16*

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: 16101354
Sample ID: West @ 7'
Lab ID: 16101354-05
Collection Date: 10/19/2016 02:31 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		7.8	µg/Kg-dry	1	10/26/2016 05:30 PM
Indeno(1,2,3-cd)pyrene	**34**		**7.8**	**µg/Kg-dry**	1	10/26/2016 05:30 PM
Naphthalene	ND		7.8	µg/Kg-dry	1	10/26/2016 05:30 PM
Pyrene	ND		7.8	µg/Kg-dry	1	10/26/2016 05:30 PM
Surr: 2-Fluorobiphenyl	*72.2*		*12-100*	*%REC*	1	10/26/2016 05:30 PM
Surr: 4-Terphenyl-d14	*66.6*		*25-137*	*%REC*	1	10/26/2016 05:30 PM
Surr: Nitrobenzene-d5	*65.1*		*37-107*	*%REC*	1	10/26/2016 05:30 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260B**		Prep: SW5035 / 10/21/16	Analyst: **BG**
Benzene	ND		0.044	mg/Kg-dry	1	10/26/2016 08:24 AM
Ethylbenzene	ND		0.044	mg/Kg-dry	1	10/26/2016 08:24 AM
m,p-Xylene	**0.12**		**0.088**	**mg/Kg-dry**	1	10/26/2016 08:24 AM
o-Xylene	ND		0.044	mg/Kg-dry	1	10/26/2016 08:24 AM
Toluene	ND		0.044	mg/Kg-dry	1	10/26/2016 08:24 AM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	10/26/2016 08:24 AM
Surr: 1,2-Dichloroethane-d4	*96.6*		*70-130*	*%REC*	1	10/26/2016 08:24 AM
Surr: 4-Bromofluorobenzene	*98.7*		*70-130*	*%REC*	1	10/26/2016 08:24 AM
Surr: Dibromofluoromethane	*88.7*		*70-130*	*%REC*	1	10/26/2016 08:24 AM
Surr: Toluene-d8	*97.8*		*70-130*	*%REC*	1	10/26/2016 08:24 AM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep: USDA Method 20B / 10/24/16	Analyst: **JB**
Electrical Conductivity @ Saturation	**7.5**		**0.25**	**mmhos/cm @2**	50	10/25/2016 12:30 PM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **MB**
Chromium, Trivalent	**11**		**0.62**	**mg/Kg-dry**	1	10/28/2016 01:10 PM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep: SW3060A / 10/25/16	Analyst: **BWW**
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	10/26/2016 05:00 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**19**		**0.050**	**% of sample**	1	10/24/2016 06:27 PM
PH			**SW9045D**		Prep: EXTRACT / 10/24/16	Analyst: **LW**
pH	**8.0**			**s.u.**	1	10/24/2016 04:00 PM

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

ALS Group USA, Corp

Date: 29-Oct-16

Client: Caerus Oil and Gas LLC

Work Order: 16101354

Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93447** Instrument ID **GC8** Method: **SW8015M**

MBLK Sample ID: **DBLKS1-93447-93447** Units: **mg/Kg** Analysis Date: **10/26/2016 04:48 PM**

Client ID: Run ID: **GC8_161026A** SeqNo: **4112703** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	*2.051*	0	*3.33*	0	*61.6*	*39-133*	0			

LCS Sample ID: **DLCSS1-93447-93447** Units: **mg/Kg** Analysis Date: **10/26/2016 05:18 PM**

Client ID: Run ID: **GC8_161026A** SeqNo: **4112704** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	279.7	5.0	333	0	84	61-109	0			
Surr: 4-Terphenyl-d14	*1.798*	0	*3.33*	0	*54*	*39-133*	0			

MS Sample ID: **16101354-01B MS** Units: **mg/Kg** Analysis Date: **10/26/2016 05:47 PM**

Client ID: **Base @ 12'** Run ID: **GC8_161026A** SeqNo: **4112705** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	345	4.7	315.3	72.53	86.4	48-110	0			
Surr: 4-Terphenyl-d14	*1.95*	0	*3.153*	0	*61.9*	*39-133*	0			

MSD Sample ID: **16101354-01B MSD** Units: **mg/Kg** Analysis Date: **10/26/2016 06:17 PM**

Client ID: **Base @ 12'** Run ID: **GC8_161026A** SeqNo: **4112706** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	339.8	4.9	325	72.53	82.2	48-110	345	1.52	30	
Surr: 4-Terphenyl-d14	*1.981*	0	*3.25*	0	*61*	*39-133*	1.95	*1.56*	*30*	

The following samples were analyzed in this batch:

16101354-01B	16101354-02B	16101354-03B
16101354-04B	16101354-05B	

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

Client: Caerus Oil and Gas LLC
Work Order: 16101354
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93304** Instrument ID **GC9** Method: **SW8015D**

MBLK Sample ID: **MBLK-93304-93304** Units: **µg/Kg-dry** Analysis Date: **10/22/2016 05:19 A**
Client ID: Run ID: **GC9_161021B** SeqNo: **4106708** Prep Date: **10/21/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500	0	0	0		0			
Surr: Toluene-d8	*4314*	0	*5000*	0	*86.3*	*50-150*	0			

LCS Sample ID: **LCS-93304-93304** Units: **µg/Kg-dry** Analysis Date: **10/22/2016 04:54 A**
Client ID: Run ID: **GC9_161021B** SeqNo: **4106707** Prep Date: **10/21/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	444100	2,500	500000	0	88.8	70-130	0			
Surr: Toluene-d8	*4844*	0	*5000*	0	*96.9*	*50-150*	0			

MS Sample ID: **16101354-02A MS** Units: **µg/Kg-dry** Analysis Date: **10/22/2016 08:13 A**
Client ID: **North @ 8'** Run ID: **GC9_161021B** SeqNo: **4106715** Prep Date: **10/21/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	616700	3,200	649400	0	95	70-130	0			
Surr: Toluene-d8	*7235*	0	*6494*	0	*111*	*50-150*	0			

MSD Sample ID: **16101354-02A MSD** Units: **µg/Kg-dry** Analysis Date: **10/22/2016 08:38 A**
Client ID: **North @ 8'** Run ID: **GC9_161021B** SeqNo: **4106716** Prep Date: **10/21/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	579100	3,200	649400	0	89.2	70-130	616700	6.29	30	
Surr: Toluene-d8	*6966*	0	*6494*	0	*107*	*50-150*	7235	*3.78*	*30*	

The following samples were analyzed in this batch:

16101354-01A	16101354-02A	16101354-03A
16101354-04A	16101354-05A	

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

Client: Caerus Oil and Gas LLC
Work Order: 16101354
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93620** Instrument ID **HG1** Method: **SW7471B**

MBLK Sample ID: **MBLK-93620-93620** Units: **mg/Kg** Analysis Date: **10/27/2016 06:34 PM**
Client ID: Run ID: **HG1_161027A** SeqNo: **4116198** Prep Date: **10/27/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.020								

LCS Sample ID: **LCS-93620-93620** Units: **mg/Kg** Analysis Date: **10/27/2016 06:37 PM**
Client ID: Run ID: **HG1_161027A** SeqNo: **4116199** Prep Date: **10/27/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1733	0.020	0.1665	0	104	80-120	0			

MS Sample ID: **16101486-08CMS** Units: **mg/Kg** Analysis Date: **10/27/2016 07:28 PM**
Client ID: Run ID: **HG1_161027A** SeqNo: **4116219** Prep Date: **10/27/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1284	0.014	0.1135	0.008775	105	75-125	0			

MSD Sample ID: **16101486-08CMSD** Units: **mg/Kg** Analysis Date: **10/27/2016 07:30 PM**
Client ID: Run ID: **HG1_161027A** SeqNo: **4116220** Prep Date: **10/27/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1342	0.014	0.1181	0.008775	106	75-125	0.1284	4.38	35	

The following samples were analyzed in this batch:

16101354-01B	16101354-02B	16101354-03B
16101354-04B	16101354-05B	

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

Client: Caerus Oil and Gas LLC
Work Order: 16101354
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93425** Instrument ID **SAR** Method: **USDA H60 Metho**

DUP Sample ID: **16101116-01ADUP** Units: **none** Analysis Date: **10/26/2016**
Client ID: Run ID: **SAR_161026A** SeqNo: **4118733** Prep Date: **10/24/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	155.7	0.010	0	0	0		205.4	27.5	50	

The following samples were analyzed in this batch:

16101354-01B	16101354-02B	16101354-03B
16101354-04B	16101354-05B	

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

Client: Caerus Oil and Gas LLC
Work Order: 16101354
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93489** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK Sample ID: **MBLK-93489-93489** Units: **mg/Kg** Analysis Date: **10/28/2016 08:24 A**
Client ID: Run ID: **ICP2_161027B** SeqNo: **4118191** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	0.02568	0.25								J
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	0.1477	0.50								J

LCS Sample ID: **LCS-93489-93489** Units: **mg/Kg** Analysis Date: **10/28/2016 08:30 A**
Client ID: Run ID: **ICP2_161027B** SeqNo: **4118192** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	5.018	0.25	5	0	100	80-120	0			
Barium	4.894	0.25	5	0	97.9	80-120	0			
Cadmium	5.112	0.50	5	0	102	80-120	0			
Chromium	5.161	0.25	5	0	103	80-120	0			
Copper	5.084	0.50	5	0	102	80-120	0			
Lead	5.012	0.25	5	0	100	80-120	0			
Nickel	5.007	0.25	5	0	100	80-120	0			
Selenium	4.844	0.50	5	0	96.9	80-120	0			
Silver	5.088	0.25	5	0	102	80-120	0			
Zinc	5.089	0.50	5	0	102	80-120	0			

MS Sample ID: **16101392-01BMS** Units: **mg/Kg** Analysis Date: **10/28/2016 09:30 A**
Client ID: Run ID: **ICP2_161027B** SeqNo: **4118203** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.324	0.36	7.267	0.8894	102	75-125	0			
Barium	15.22	0.36	7.267	7.515	106	75-125	0			
Cadmium	7.51	0.73	7.267	0.03325	103	75-125	0			
Chromium	10.82	0.36	7.267	3.039	107	75-125	0			
Copper	8.081	0.73	7.267	0.8663	99.3	75-125	0			
Lead	8.719	0.36	7.267	1.626	97.6	75-125	0			
Nickel	9.109	0.36	7.267	1.741	101	75-125	0			
Selenium	7.207	0.73	7.267	0.137	97.3	75-125	0			
Silver	7.296	0.36	7.267	-0.08327	102	75-125	0			
Zinc	14.04	0.73	7.267	7.131	95.1	75-125	0			

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

Client: Caerus Oil and Gas LLC
Work Order: 16101354
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93489** Instrument ID **ICP2** Method: **SW846 6010C**

MSD Sample ID: **16101392-01BMSD** Units: **mg/Kg** Analysis Date: **10/28/2016 09:35 A**

Client ID: Run ID: **ICP2_161027B** SeqNo: **4118204** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.036	0.36	7.257	0.8894	98.5	75-125	8.324	3.52	20	
Barium	14.83	0.36	7.257	7.515	101	75-125	15.22	2.59	20	
Cadmium	7.44	0.73	7.257	0.03325	102	75-125	7.51	0.926	20	
Chromium	10.69	0.36	7.257	3.039	105	75-125	10.82	1.21	20	
Copper	7.739	0.73	7.257	0.8663	94.7	75-125	8.081	4.32	20	
Lead	8.72	0.36	7.257	1.626	97.8	75-125	8.719	0.00252	20	
Nickel	8.992	0.36	7.257	1.741	99.9	75-125	9.109	1.29	20	
Selenium	7.145	0.73	7.257	0.137	96.6	75-125	7.207	0.869	20	
Silver	7.18	0.36	7.257	-0.08327	100	75-125	7.296	1.6	20	
Zinc	13.9	0.73	7.257	7.131	93.3	75-125	14.04	0.971	20	

The following samples were analyzed in this batch:

16101354-01B	16101354-02B	16101354-03B
16101354-04B	16101354-05B	

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

Client: Caerus Oil and Gas LLC
Work Order: 16101354
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93466** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK Sample ID: **SBLKS1-93466-93466** Units: **µg/Kg** Analysis Date: **10/25/2016 08:52 PM**
Client ID: Run ID: **SVMS8_161025A** SeqNo: **4111174** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
Surr: 2-Fluorobiphenyl	*2191*	0	*3333*	0	*65.7*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2476*	0	*3333*	0	*74.3*	*25-137*	0			
Surr: Nitrobenzene-d5	*1957*	0	*3333*	0	*58.7*	*37-107*	0			

LCS Sample ID: **SLCSS1-93466-93466** Units: **µg/Kg** Analysis Date: **10/25/2016 09:13 PM**
Client ID: Run ID: **SVMS8_161025A** SeqNo: **4111175** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1015	6.7	1333	0	76.2	45-110	0			
Anthracene	1102	6.7	1333	0	82.7	55-105	0			
Benzo(a)anthracene	1085	6.7	1333	0	81.4	50-110	0			
Benzo(a)pyrene	1103	6.7	1333	0	82.8	50-110	0			
Benzo(b)fluoranthene	1079	6.7	1333	0	81	45-115	0			
Benzo(k)fluoranthene	1056	6.7	1333	0	79.2	45-115	0			
Chrysene	1084	6.7	1333	0	81.3	55-110	0			
Dibenzo(a,h)anthracene	1243	6.7	1333	0	93.3	40-125	0			
Fluoranthene	1173	6.7	1333	0	88	55-115	0			
Fluorene	1068	6.7	1333	0	80.1	50-110	0			
Indeno(1,2,3-cd)pyrene	1239	6.7	1333	0	93	40-120	0			
Naphthalene	941.3	6.7	1333	0	70.6	40-105	0			
Pyrene	1027	6.7	1333	0	77	45-125	0			
Surr: 2-Fluorobiphenyl	*2451*	0	*3333*	0	*73.5*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2449*	0	*3333*	0	*73.5*	*25-137*	0			
Surr: Nitrobenzene-d5	*2320*	0	*3333*	0	*69.6*	*37-107*	0			

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

Client: Caerus Oil and Gas LLC
Work Order: 16101354
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93466** Instrument ID **SVMS8** Method: **SW846 8270D**

MS Sample ID: **16101411-01B MS** Units: **µg/Kg** Analysis Date: **10/25/2016 11:02 PM**
Client ID: Run ID: **SVMS8_161025A** SeqNo: **4111179** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	926.5	6.4	1275	0	72.7	45-110	0			
Anthracene	956.5	6.4	1275	0	75	55-105	0			
Benzo(a)anthracene	937.4	6.4	1275	0	73.5	50-110	0			
Benzo(a)pyrene	960.3	6.4	1275	0	75.3	50-110	0			
Benzo(b)fluoranthene	918.9	6.4	1275	0	72.1	45-115	0			
Benzo(k)fluoranthene	931	6.4	1275	0	73	45-115	0			
Chrysene	971.2	6.4	1275	0	76.2	55-110	0			
Dibenzo(a,h)anthracene	1094	6.4	1275	0	85.8	40-125	0			
Fluoranthene	1053	6.4	1275	0	82.6	55-115	0			
Fluorene	979.5	6.4	1275	0	76.8	50-110	0			
Indeno(1,2,3-cd)pyrene	1057	6.4	1275	0	82.9	40-120	0			
Naphthalene	906.8	6.4	1275	0	71.1	40-105	0			
Pyrene	894	6.4	1275	0	70.1	45-125	0			
Surr: 2-Fluorobiphenyl	*2250*	0	*3188*	0	*70.6*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2109*	0	*3188*	0	*66.2*	*25-137*	0			
Surr: Nitrobenzene-d5	*2145*	0	*3188*	0	*67.3*	*37-107*	0			

MSD Sample ID: **16101411-01B MSD** Units: **µg/Kg** Analysis Date: **10/25/2016 11:22 PM**
Client ID: Run ID: **SVMS8_161025A** SeqNo: **4111180** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	912.1	6.4	1286	0	70.9	45-110	926.5	1.57	30	
Anthracene	977	6.4	1286	0	76	55-105	956.5	2.12	30	
Benzo(a)anthracene	971.9	6.4	1286	0	75.6	50-110	937.4	3.62	30	
Benzo(a)pyrene	995	6.4	1286	0	77.4	50-110	960.3	3.55	30	
Benzo(b)fluoranthene	984.1	6.4	1286	0	76.5	45-115	918.9	6.85	30	
Benzo(k)fluoranthene	945.5	6.4	1286	0	73.5	45-115	931	1.55	30	
Chrysene	994.4	6.4	1286	0	77.3	55-110	971.2	2.36	30	
Dibenzo(a,h)anthracene	1104	6.4	1286	0	85.8	40-125	1094	0.923	30	
Fluoranthene	1061	6.4	1286	0	82.5	55-115	1053	0.743	30	
Fluorene	964.2	6.4	1286	0	75	50-110	979.5	1.57	30	
Indeno(1,2,3-cd)pyrene	1114	6.4	1286	0	86.6	40-120	1057	5.23	30	
Naphthalene	873.5	6.4	1286	0	67.9	40-105	906.8	3.74	30	
Pyrene	928.2	6.4	1286	0	72.2	45-125	894	3.75	30	
Surr: 2-Fluorobiphenyl	*2261*	0	*3216*	0	*70.3*	*12-100*	2250	*0.467*	*40*	
Surr: 4-Terphenyl-d14	*2227*	0	*3216*	0	*69.2*	*25-137*	2109	*5.41*	*40*	
Surr: Nitrobenzene-d5	*2166*	0	*3216*	0	*67.3*	*37-107*	2145	*0.954*	*40*	

The following samples were analyzed in this batch:

16101354-01B	16101354-02B	16101354-03B
16101354-04B	16101354-05B	

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

Client: Caerus Oil and Gas LLC
Work Order: 16101354
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93301** Instrument ID **VMS7** Method: **SW8260B**

MBLK Sample ID: **MBLK-93301-93301** Units: **µg/Kg-dry** Analysis Date: **10/21/2016 03:50 PM**
Client ID: Run ID: **VMS7_161021A** SeqNo: **4103659** Prep Date: **10/21/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	*959*	0	*1000*	0	*95.9*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*950.5*	0	*1000*	0	*95*	*70-130*	0			
Surr: Dibromofluoromethane	*926.5*	0	*1000*	0	*92.6*	*70-130*	0			
Surr: Toluene-d8	*996*	0	*1000*	0	*99.6*	*70-130*	0			

LCS Sample ID: **LCS-93301-93301** Units: **µg/Kg-dry** Analysis Date: **10/21/2016 02:40 PM**
Client ID: Run ID: **VMS7_161021A** SeqNo: **4103658** Prep Date: **10/21/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1094	30	1000	0	109	75-125	0			
Ethylbenzene	1124	30	1000	0	112	75-125	0			
m,p-Xylene	2255	60	2000	0	113	80-125	0			
o-Xylene	1098	30	1000	0	110	75-125	0			
Toluene	1142	30	1000	0	114	70-125	0			
Xylenes, Total	3354	90	3000	0	112	75-125	0			
Surr: 1,2-Dichloroethane-d4	*962.5*	0	*1000*	0	*96.2*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*970*	0	*1000*	0	*97*	*70-130*	0			
Surr: Dibromofluoromethane	*994.5*	0	*1000*	0	*99.4*	*70-130*	0			
Surr: Toluene-d8	*1002*	0	*1000*	0	*100*	*70-130*	0			

MS Sample ID: **16101354-02A MS** Units: **µg/Kg-dry** Analysis Date: **10/25/2016 12:01 PM**
Client ID: **North @ 8'** Run ID: **VMS9_161024B** SeqNo: **4108596** Prep Date: **10/21/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1219	39	1299	0	93.8	75-125	0			
Ethylbenzene	1303	39	1299	9.092	99.6	75-125	0			
m,p-Xylene	2819	78	2598	109.8	104	80-125	0			
o-Xylene	1349	39	1299	16.89	103	75-125	0			
Toluene	1266	39	1299	0	97.5	70-125	0			
Xylenes, Total	4167	120	3897	127	104	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1206*	0	*1299*	0	*92.8*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1338*	0	*1299*	0	*103*	*70-130*	0			
Surr: Dibromofluoromethane	*1134*	0	*1299*	0	*87.3*	*70-130*	0			
Surr: Toluene-d8	*1231*	0	*1299*	0	*94.8*	*70-130*	0			

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

Client: Caerus Oil and Gas LLC
Work Order: 16101354
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93301** Instrument ID **VMS7** Method: **SW8260B**

MSD Sample ID: **16101354-02A MSD** Units: **µg/Kg-dry** Analysis Date: **10/25/2016 12:25 PM**
Client ID: **North @ 8'** Run ID: **VMS9_161024B** SeqNo: **4108597** Prep Date: **10/21/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1272	39	1299	0	97.9	75-125	1219	4.22	30	
Ethylbenzene	1314	39	1299	9.092	100	75-125	1303	0.794	30	
m,p-Xylene	2851	78	2598	109.8	106	80-125	2819	1.15	30	
o-Xylene	1381	39	1299	16.89	105	75-125	1349	2.33	30	
Toluene	1259	39	1299	0	96.9	70-125	1266	0.617	30	
Xylenes, Total	4232	120	3897	127	105	75-125	4167	1.53	30	
Surr: 1,2-Dichloroethane-d4	*1252*	0	*1299*	0	*96.4*	*70-130*	1206	*3.75*	*30*	
Surr: 4-Bromofluorobenzene	*1352*	0	*1299*	0	*104*	*70-130*	1338	*1.06*	*30*	
Surr: Dibromofluoromethane	*1208*	0	*1299*	0	*93*	*70-130*	1134	*6.32*	*30*	
Surr: Toluene-d8	*1222*	0	*1299*	0	*94*	*70-130*	1231	*0.794*	*30*	

The following samples were analyzed in this batch:

16101354-01A	16101354-02A	16101354-03A
16101354-04A	16101354-05A	

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

Client: Caerus Oil and Gas LLC
Work Order: 16101354
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93407** Instrument ID **WETCHEM** Method: **SW9045D**

LCS	Sample ID: **LCS-93407-93407**				Units: **s.u.**			Analysis Date: **10/24/2016 04:00 PM**			
Client ID:		Run ID: **WETCHEM_161024K**			SeqNo: **4106806**			Prep Date: **10/24/2016**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH	3.97	0	4	0	99.2	90-110	0				

LCS	Sample ID: **LCS-93407-93407**				Units: **s.u.**			Analysis Date: **10/24/2016 04:00 PM**			
Client ID:		Run ID: **WETCHEM_161024K**			SeqNo: **4109072**			Prep Date: **10/24/2016**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH	3.97	0	4	0	99.2	90-110	0				

DUP	Sample ID: **16101469-01A DUP**				Units: **s.u.**			Analysis Date: **10/24/2016 04:00 PM**			
Client ID:		Run ID: **WETCHEM_161024K**			SeqNo: **4106818**			Prep Date: **10/24/2016**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH	7.8	0	0	0	0	0-0	7.87	0.893	20		

DUP	Sample ID: **16101474-01A DUP**				Units: **s.u.**			Analysis Date: **10/24/2016 04:00 PM**			
Client ID:		Run ID: **WETCHEM_161024K**			SeqNo: **4106821**			Prep Date: **10/24/2016**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH	9.42	0	0	0	0	0-0	9.46	0.424	20		

DUP	Sample ID: **16101474-01A DUP**				Units: **s.u.**			Analysis Date: **10/24/2016 04:00 PM**			
Client ID:		Run ID: **WETCHEM_161024K**			SeqNo: **4109074**			Prep Date: **10/24/2016**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH	9.42	0	0	0	0	0-0	9.46	0.424	20		

The following samples were analyzed in this batch:

16101354-01B	16101354-02B	16101354-03B
16101354-04B	16101354-05B	

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

Client: Caerus Oil and Gas LLC
Work Order: 16101354
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93425** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

DUP	Sample ID: **16101116-01A DUP**					Units: **mmhos/cm @25°**		Analysis Date: **10/25/2016 12:30 PM**		
Client ID:		Run ID: **WETCHEM_161025F**				SeqNo: **4108564**	Prep Date: **10/24/2016**		DF: **50**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	186	0.25	0	0	0		228	20.3	50	

The following samples were analyzed in this batch:

16101354-01B	16101354-02B	16101354-03B
16101354-04B	16101354-05B	

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

Client: Caerus Oil and Gas LLC
Work Order: 16101354
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93579** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK Sample ID: **MBLK-93579-93579** Units: **mg/Kg** Analysis Date: **10/26/2016 05:00 PM**
Client ID: Run ID: **WETCHEM_161026R** SeqNo: **4112662** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	ND	1.0								

LCS Sample ID: **LCS-93579-93579** Units: **mg/Kg** Analysis Date: **10/26/2016 05:00 PM**
Client ID: Run ID: **WETCHEM_161026R** SeqNo: **4112661** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	4.32	1.0	5	0	86.4	80-120	0			

MS Sample ID: **16101354-01B MS** Units: **mg/Kg** Analysis Date: **10/26/2016 05:00 PM**
Client ID: **Base @ 12'** Run ID: **WETCHEM_161026R** SeqNo: **4112653** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	ND	0.98	4.902	0	0	75-125	0			S

MS Sample ID: **16101354-01B MSI** Units: **mg/Kg** Analysis Date: **10/26/2016 05:00 PM**
Client ID: **Base @ 12'** Run ID: **WETCHEM_161026R** SeqNo: **4112655** Prep Date: **10/25/2016** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	3143	100	3234	0	97.2	75-125	0			

MSD Sample ID: **16101354-01B MSD** Units: **mg/Kg** Analysis Date: **10/26/2016 05:00 PM**
Client ID: **Base @ 12'** Run ID: **WETCHEM_161026R** SeqNo: **4112654** Prep Date: **10/25/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	ND	0.99	4.95	0	0	75-125	0.2157	0	20	S

The following samples were analyzed in this batch:

16101354-01B	16101354-02B	16101354-03B
16101354-04B	16101354-05B	

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

Client: Caerus Oil and Gas LLC
Work Order: 16101354
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **R198950** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **WBLKS-R198950** Units: **% of sample** Analysis Date: **10/24/2016 06:27 PM**
Client ID: Run ID: **MOIST_161024E** SeqNo: **4108354** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	0.03	0.050								J

LCS Sample ID: **LCS-R198950** Units: **% of sample** Analysis Date: **10/24/2016 06:27 PM**
Client ID: Run ID: **MOIST_161024E** SeqNo: **4108352** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	99.99	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **16101310-02A DUP** Units: **% of sample** Analysis Date: **10/24/2016 06:27 PM**
Client ID: Run ID: **MOIST_161024E** SeqNo: **4108311** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	21.82	0.050	0	0	0		19.89	9.25	20	

DUP Sample ID: **16101310-03A DUP** Units: **% of sample** Analysis Date: **10/24/2016 06:27 PM**
Client ID: Run ID: **MOIST_161024E** SeqNo: **4108314** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	19.75	0.050	0	0	0		18.91	4.35	20	

The following samples were analyzed in this batch:

16101354-01B	16101354-02B	16101354-03B
16101354-04B	16101354-05B	

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

ALS Laboratory Group

ALS Holland 3352 128th Ave, Holland MI
855-572-1944 — 616-399-6070

Chain-of-Custody

Form 202r8

WORKORDER # 1610354

PAGE 1 of 1

DISPOSAL (By Lab) or Return to Clie

PROJECT NAME	Starky 1 PBU Removal	SAMPLER	Tyler Rust
PROJECT No.		SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	Caerus Piceance, LLC	BILL TO COMPANY	Caerus Piceance, LLC
SEND REPORT TO	Jake Janicek	INVOICE ATTN TO	Jake Janicek
ADDRESS	120 N. Railroad, suite D	ADDRESS	120 N. Railroad, suite D
CITY / STATE / ZIP	Parachute Co, 81635	CITY / STATE / ZIP	Parachute Co, 81635
PHONE	970-285-9608	PHONE	970-285-9608
FAX		FAX	
E-MAIL	jjanicek@caerusoilandgas.com	E-MAIL	invoices@caerusoilandgas.com

DATE 10-19-16

TURNAROUND STD 5 Day

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	TPH/GRO/DRO	BTEX	Table 910 PAH's	EC	PH	SAR	Benzene	Table 910 Metals
1	Base @ 12'	So: 1	10-19-16	1423	2	-	-	X	X	X	X	X	X	X	X
2	North @ 8'			1057				X	X	X	X	X	X	X	X
3	East @ 8'			1102				X	X	X	X	X	X	X	X
4	South @ 6.5'			1423				X	X	X	X	X	X	X	X
5	West @ 7'	↓	↓	1431	↓	↓	↓	X	X	X	X	X	X	X	X

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

For metals or anions, please detail analytes below.

Comments: 4.8°C

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Tyler Rust	10-19-16	3:45
RECEIVED BY			10/19/16	3:45
RELINQUISHED BY			10/19/16	4:20
RECEIVED BY		Keith Wiegand	10/20/16	0930
RELINQUISHED BY				
RECEIVED BY				

ORIGIN ID:RILA (616) 298-1033
NICK MARTINEZ
ALS ENVIRONMENTAL PARACHUTE
PARACHUTE SERVICE CENTER
127 EAST 1ST. ST
PARACHUTE, CO 81635
UNITED STATES US

SHIP DATE: 19OCT16
ACTWGT: 57.00 LB
CAD: 2264840/INET3790
DIMS: 14x26x15 IN

BILL SENDER

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL HOLLAND LAB
3352 128TH AVE

HOLLAND MI 49424
(616) 399-6070 REF: 101916-1
INV:
PO: PARACHUTE DEPT:

544J3/FB42/14EB

FedEx. Express

E

REL# 3785346

THU - 20 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7775 1247 9826

XX HLMA

49424
MI-US GRR

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL

Date: [illegible] Time: [illegible]
Name: [illegible]
Company: [illegible]

Seal Broken By:
Date:

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **CAERUS** Date/Time Received: **20-Oct-16 09:30**

Work Order: **16101354** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 20-Oct-16 (Date) Reviewed by: Chad Whelton (eSignature) 20-Oct-16 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.8/4.8 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/20/2016 2:27:16 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

02-Nov-2016

Jake Janicek
Caerus Oil and Gas LLC
120 N. Railroad Ave. Suite D
Parachute, CO 81635

Re: **Starkey 1 PBV Removal** Work Order: **1611008**

Dear Jake,

ALS Environmental received 1 sample on 20-Oct-2016 for the analyses presented in the following report.

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

Sample results are compliant with NELAP standard requirements and QC 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 9.

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

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 998501

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 02-Nov-16

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: **1611008**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1611008-01	West@7'	Soil		10/19/2016 14:31	10/20/2016	☐

ALS Group USA, Corp

Date: 02-Nov-16

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
WorkOrder: **1611008**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
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.

Acronym	Description
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

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight

ALS Group USA, Corp

Date: *02-Nov-16*

Client: Caerus Oil and Gas LLC
Project: Starkey 1 PBV Removal
Work Order: 1611008
Sample ID: West@7'
Lab ID: 1611008-01
Collection Date: 10/19/2016 02:31 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW846 8270D**		Prep: SW3546 / 11/1/16	Analyst: **RS**
Benzo(a)pyrene	**18**		**8.2**	**µg/Kg-dry**	1	11/2/2016 02:19 PM
Surr: 2-Fluorobiphenyl	*65.1*		*12-100*	*%REC*	1	11/2/2016 02:19 PM
Surr: 4-Terphenyl-d14	*72.7*		*25-137*	*%REC*	1	11/2/2016 02:19 PM
Surr: Nitrobenzene-d5	*56.4*		*37-107*	*%REC*	1	11/2/2016 02:19 PM
MOISTURE			**SW3550C**			Analyst: **EDL**
Moisture	**19**		**0.050**	**% of sample**	1	10/24/2016 06:27 PM

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

ALS Group USA, Corp

Date: 02-Nov-16

Client: Caerus Oil and Gas LLC

Work Order: 1611008

Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **93828** Instrument ID **SVMS5** Method: **SW846 8270D**

MBLK Sample ID: **SBLKS1-93828-93828** Units: **µg/Kg** Analysis Date: **11/2/2016 11:15 AM**

Client ID: Run ID: **SVMS5_161102A** SeqNo: **4129210** Prep Date: **11/1/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)pyrene	ND	6.7								
Surr: 2-Fluorobiphenyl	*2046*	0	*3333*	0	*61.4*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2836*	0	*3333*	0	*85.1*	*25-137*	0			
Surr: Nitrobenzene-d5	*1846*	0	*3333*	0	*55.4*	*37-107*	0			

LCS Sample ID: **SLCSS1-93828-93828** Units: **µg/Kg** Analysis Date: **11/2/2016 11:38 AM**

Client ID: Run ID: **SVMS5_161102A** SeqNo: **4129211** Prep Date: **11/1/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)pyrene	1168	6.7	1333	0	87.6	50-110	0			
Surr: 2-Fluorobiphenyl	*2333*	0	*3333*	0	*70*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2643*	0	*3333*	0	*79.3*	*25-137*	0			
Surr: Nitrobenzene-d5	*2091*	0	*3333*	0	*62.7*	*37-107*	0			

MS Sample ID: **16101837-04B MS** Units: **µg/Kg** Analysis Date: **11/2/2016 12:01 PM**

Client ID: Run ID: **SVMS5_161102A** SeqNo: **4129212** Prep Date: **11/1/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)pyrene	1130	6.5	1308	0	86.4	50-110	0			
Surr: 2-Fluorobiphenyl	*2304*	0	*3270*	0	*70.4*	*12-100*	0			
Surr: 4-Terphenyl-d14	*2588*	0	*3270*	0	*79.1*	*25-137*	0			
Surr: Nitrobenzene-d5	*2078*	0	*3270*	0	*63.5*	*37-107*	0			

MSD Sample ID: **16101837-04B MSD** Units: **µg/Kg** Analysis Date: **11/2/2016 12:24 PM**

Client ID: Run ID: **SVMS5_161102A** SeqNo: **4129213** Prep Date: **11/1/2016** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzo(a)pyrene	1138	6.6	1326	0	85.8	50-110	1130	0.713	30	
Surr: 2-Fluorobiphenyl	*2323*	0	*3317*	0	*70*	*12-100*	2304	*0.812*	*40*	
Surr: 4-Terphenyl-d14	*2607*	0	*3317*	0	*78.6*	*25-137*	2588	*0.725*	*40*	
Surr: Nitrobenzene-d5	*2134*	0	*3317*	0	*64.3*	*37-107*	2078	*2.66*	*40*	

The following samples were analyzed in this batch: 1611008-01A

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

Client: Caerus Oil and Gas LLC
Work Order: 1611008
Project: Starkey 1 PBV Removal

QC BATCH REPORT

Batch ID: **R198950** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **WBLKS-R198950** Units: **% of sample** Analysis Date: **10/24/2016 06:27 PM**
Client ID: Run ID: **MOIST_161024E** SeqNo: **4108354** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	0.03	0.050								J

LCS Sample ID: **LCS-R198950** Units: **% of sample** Analysis Date: **10/24/2016 06:27 PM**
Client ID: Run ID: **MOIST_161024E** SeqNo: **4108352** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	99.99	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **16101310-02A DUP** Units: **% of sample** Analysis Date: **10/24/2016 06:27 PM**
Client ID: Run ID: **MOIST_161024E** SeqNo: **4108311** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	21.82	0.050	0	0	0		19.89	9.25	20	

DUP Sample ID: **16101310-03A DUP** Units: **% of sample** Analysis Date: **10/24/2016 06:27 PM**
Client ID: Run ID: **MOIST_161024E** SeqNo: **4108314** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	19.75	0.050	0	0	0		18.91	4.35	20	

The following samples were analyzed in this batch: 1611008-01A

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

ALS Laboratory Group

ALS Holland 3352 128th Ave, Holland MI
855-572-1944 —— 616-399-6070

Chain-of-Custody

Form 282r8

WORK ORDER # 1610354

PAGE 1 of 1

DISPOSAL (By Lab) or Return to Clie

PROJECT NAME	Starkey 1 PBU Removal	SAMPLER	Tyler Rust
PROJECT No.		SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	Caerus Piceance, LLC	BILL TO COMPANY	Caerus Piceance, LLC
SEND REPORT TO	Jake Janicek	INVOICE ATTN TO	Jake Janicek
ADDRESS	120 N. Railroad, suite D	ADDRESS	120 N. Railroad, suite D
CITY / STATE / ZIP	Parachute Co, 81635	CITY / STATE / ZIP	Parachute Co, 81635
PHONE	970-285-9608	PHONE	970-285-9608
FAX		FAX	
E-MAIL	jjanicek@caerusoilandgas.com	E-MAIL	invoices@caerusoilandgas.com

DATE 10-19-16

TURNAROUND STD 5 Day

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	TPH/GRO/DRO	BTEX	Table 910 PAHs	EC	PH	SAR	Benzene	Table 910 Metals
1	Base @ 12'	So: 1	10-19-16	1423	2	-	-	X	X	X	X	X	X	X	X
2	North @ 8'	↓	↓	1057	↓	↓	↓	X	X	X	X	X	X	X	X
3	East @ 8'			1102				X	X	X	X	X	X	X	X
4	South @ 6.5'			1423				X	X	X	X	X	X	X	X
5	West @ 7'	↓	↓	1431	↓	↓	↓	X	X	X	X	X	X	X	X

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

For metals or anions, please detail analytes below.

Comments: 4.8°C

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Tyler Rust	10-19-16	3:45
RECEIVED BY			10/19/16	3:45
RELINQUISHED BY			10/19/16	4:20
RECEIVED BY		Keith Wherenea	10/20/16	0930
RELINQUISHED BY				
RECEIVED BY				

ORIGIN ID:RILA (616) 298-1033
NICK MARTINEZ
ALS ENVIRONMENTAL PARACHUTE
PARACHUTE SERVICE CENTER
127 EAST 1ST. ST
PARACHUTE, CO 81635
UNITED STATES US

SHIP DATE: 19OCT16
ACTWGT: 57.00 LB
CAD: 2264840/INET3790
DIMS: 14x26x15 IN

BILL SENDER

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL HOLLAND LAB
3352 128TH AVE

HOLLAND MI 49424
(616) 399-6070 REF: 101916-1
INV:
PO: PARACHUTE DEPT:

544J3/FB42/14EB

FedEx. Express

E

REL#
3765346

THU - 20 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7775 1247 9826

XX HLMA

49424
MI-US GRR

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424
Tel. +1 616 399 6070
Fax. +1 616 399 6185

CUSTODY SEAL
Date: Time:
Name:
Company:
Seal Broken By:
Date:

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **CAERUS** Date/Time Received: **20-Oct-16 00:00**

Work Order: **1611008** Received by: **KRW**

Checklist completed by Chad Whelton (eSignature) 01-Nov-16 (Date) Reviewed by: Chad Whelton (eSignature) 01-Nov-16 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.8/4.8 C	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	10/20/2016 2:27:16 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

30-Jul-2013

Herman Lucero
HRL Compliance Solutions
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **Caerus Chevron 41-8D 13-199 7/22/13** Work Order: **1307799**

Dear Herman,

ALS Environmental received 3 samples on 23-Jul-2013 10:00 AM for the analyses presented in the following report.

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

Sample results are compliant with NELAP standard requirements and QC 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 14.

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

Sincerely,

Ann Preston

Electronically approved by: Ann Preston

Ann Preston
Project Manager

Certificate No: MN 532786

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 30-Jul-13

Client: HRL Compliance Solutions
Project: Caerus Chevron 41-8D 13-199 7/22/13
Work Order: **1307799**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1307799-01	BKGD 1	Soil		7/22/2013 13:45	7/23/2013 10:00	☐
1307799-02	BKGD 2	Soil		7/22/2013 13:35	7/23/2013 10:00	☐
1307799-03	BKGD 3	Soil		7/22/2013 13:30	7/23/2013 10:00	☐

ALS Group USA, Corp

Date: 30-Jul-13

Client: HRL Compliance Solutions
Project: Caerus Chevron 41-8D 13-199 7/22/13
WorkOrder: **1307799**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
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

Acronym	Description
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
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
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, Corp

Date: *30-Jul-13*

Client: HRL Compliance Solutions
Project: Caerus Chevron 41-8D 13-199 7/22/13 **Work Order:** 1307799
Sample ID: BKGD 1 **Lab ID:** 1307799-01
Collection Date: 7/22/2013 01:45 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **7/25/2013**	Analyst: **ML**
Arsenic	**39**		**9.2**	**mg/Kg-dry**	5	7/27/2013 02:20 AM
SOLUBLE CATIONS FOR SAR			**SW6020A**		Prep Date: **7/25/2013**	Analyst: **RH**
Calcium	**81**		**10**	**mg/L**	20	7/26/2013 03:49 PM
Magnesium	**28**		**4.0**	**mg/L**	20	7/26/2013 03:49 PM
Sodium	**120**		**4.0**	**mg/L**	20	7/26/2013 03:49 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep Date: **7/25/2013**	Analyst: **RH**
Sodium Adsorption Ratio	**2.8**		**0.010**	**none**	1	7/26/2013
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep Date: **7/25/2013**	Analyst: **JB**
Electrical Conductivity @ Saturation	**1.2**		**0.050**	**mmhos/cm @25**	10	7/25/2013 03:10 PM
MOISTURE			**A2540 G**			Analyst: **BD**
Moisture	**82**		**0.050**	**% of sample**	1	7/23/2013 12:40 PM
PH			**SW9045D**		Prep Date: **7/23/2013**	Analyst: **JB**
pH	**9.1**			**s.u.**	1	7/23/2013 11:00 AM

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

ALS Group USA, Corp

Date: *30-Jul-13*

Client: HRL Compliance Solutions
Project: Caerus Chevron 41-8D 13-199 7/22/13 **Work Order:** 1307799
Sample ID: BKGD 2 **Lab ID:** 1307799-02
Collection Date: 7/22/2013 01:35 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **7/25/2013**	Analyst: **ML**
Arsenic	**8.3**		**2.0**	**mg/Kg-dry**	5	7/27/2013 02:44 AM
MOISTURE			**A2540 G**			Analyst: **BD**
Moisture	**7.3**		**0.050**	**% of sample**	1	7/23/2013

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

ALS Group USA, Corp

Date: *30-Jul-13*

Client: HRL Compliance Solutions
Project: Caerus Chevron 41-8D 13-199 7/22/13
Work Order: 1307799
Sample ID: BKGD 3
Lab ID: 1307799-03
Collection Date: 7/22/2013 01:30 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **7/25/2013**	Analyst: **ML**
Arsenic	**8.6**		**1.8**	**mg/Kg-dry**	5	7/27/2013 02:50 AM
MOISTURE			**A2540 G**			Analyst: **BD**
Moisture	**5.2**		**0.050**	**% of sample**	1	7/23/2013

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

QC BATCH REPORT

Batch ID: **50013** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK Sample ID: **MBLK-50013-50013** Units: **mg/Kg** Analysis Date: **7/26/2013 02:01 PM**

Client ID: Run ID: **ICPMS1_130726A** SeqNo: **2392468** Prep Date: **7/25/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	0.03916	0.25								J

LCS Sample ID: **LCS-50013-50013** Units: **mg/Kg** Analysis Date: **7/26/2013 02:07 PM**

Client ID: Run ID: **ICPMS1_130726A** SeqNo: **2392469** Prep Date: **7/25/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.799	0.25	5	0	96	80-120	0			

MS Sample ID: **1307769-02BMS** Units: **mg/Kg** Analysis Date: **7/26/2013 02:19 PM**

Client ID: Run ID: **ICPMS1_130726A** SeqNo: **2392471** Prep Date: **7/25/2013** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	12.8	1.9	7.418	5.276	101	75-125	0			

MSD Sample ID: **1307769-02BMSD** Units: **mg/Kg** Analysis Date: **7/26/2013 02:25 PM**

Client ID: Run ID: **ICPMS1_130726A** SeqNo: **2392472** Prep Date: **7/25/2013** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	13.82	1.9	7.645	5.276	112	75-125	12.8	7.68	25	

The following samples were analyzed in this batch: 1307799-01A 1307799-02A 1307799-03A

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

Client: HRL Compliance Solutions
Work Order: 1307799
Project: Caerus Chevron 41-8D 13-199 7/22/13

QC BATCH REPORT

Batch ID: **49915** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP Sample ID: **1307634-01B DUP** Units: **mmhos/cm @25°C** Analysis Date: **7/25/2013 03:10 PM**
Client ID: Run ID: **WETCHEM_130725J** SeqNo: **2390794** Prep Date: **7/25/2013** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	1.583	0.050	0	0	0		1.847	15.4	50	

The following samples were analyzed in this batch: 1307799-01B

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

Client: HRL Compliance Solutions
Work Order: 1307799
Project: Caerus Chevron 41-8D 13-199 7/22/13

QC BATCH REPORT

Batch ID: **49934** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-49934-49934** Units: **s.u.** Analysis Date: **7/23/2013 11:00 AM**
Client ID: Run ID: **WETCHEM_130723L** SeqNo: **2388161** Prep Date: **7/23/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	4.53	0	4.4	0	103	90-110	0			

DUP Sample ID: **1307798-01B DUP** Units: **s.u.** Analysis Date: **7/23/2013 11:00 AM**
Client ID: Run ID: **WETCHEM_130723L** SeqNo: **2388163** Prep Date: **7/23/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	9.13	0	0	0	0	0-0	9.13	0	20	

The following samples were analyzed in this batch: 1307799-01A

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

Client: HRL Compliance Solutions
Work Order: 1307799
Project: Caerus Chevron 41-8D 13-199 7/22/13

QC BATCH REPORT

Batch ID: **R124049** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R124049** Units: **% of sample** Analysis Date: **7/23/2013 12:40 PM**
Client ID: Run ID: **MOIST_130723A** SeqNo: **2388372** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R124049** Units: **% of sample** Analysis Date: **7/23/2013 12:40 PM**
Client ID: Run ID: **MOIST_130723A** SeqNo: **2388371** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1307776-06A DUP** Units: **% of sample** Analysis Date: **7/23/2013 12:40 PM**
Client ID: Run ID: **MOIST_130723A** SeqNo: **2388357** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	48.63	0.050	0	0	0	0-0	49.35	1.47	20	

DUP Sample ID: **1307798-01B DUP** Units: **% of sample** Analysis Date: **7/23/2013 12:40 PM**
Client ID: Run ID: **MOIST_130723A** SeqNo: **2388365** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	19.99	0.050	0	0	0	0-0	20.28	1.44	20	

The following samples were analyzed in this batch: 1307799-01A

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

Client: HRL Compliance Solutions
Work Order: 1307799
Project: Caerus Chevron 41-8D 13-199 7/22/13

QC BATCH REPORT

Batch ID: **R124058** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS-R124058** Units: **% of sample** Analysis Date: **7/23/2013**
Client ID: Run ID: **MOIST_130723C** SeqNo: **2388576** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R124058** Units: **% of sample** Analysis Date: **7/23/2013**
Client ID: Run ID: **MOIST_130723C** SeqNo: **2388574** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1307794-01B DUP** Units: **% of sample** Analysis Date: **7/23/2013**
Client ID: Run ID: **MOIST_130723C** SeqNo: **2388528** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	15.1	0.050	0	0	0	0-0	15.45	2.29	20	

DUP Sample ID: **1307801-04A DUP** Units: **% of sample** Analysis Date: **7/23/2013**
Client ID: Run ID: **MOIST_130723C** SeqNo: **2388551** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	32.26	0.050	0	0	0	0-0	31.81	1.4	20	

The following samples were analyzed in this batch: 1307799-02A 1307799-03A

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

ALS Laboratory Group

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

Chain-of-Custody

Form 202r8

WORKORDER # 1307799

PAGE 1 of 1

PROJECT NAME	CAERUS CHEVRON 41-8D	SAMPLER	Casey Richardson	DATE	7-22-13
PROJECT No.	13-199	SITE ID		TURNAROUND	5 DAY
		EDD FORMAT		DISPOSAL	~~Return to Lab~~ or Return to Client
COMPANY NAME	HCSI	PURCHASE ORDER			
SEND REPORT TO	Herman Lucero	BILL TO COMPANY	PDC Energy		
ADDRESS	2385 F 1/2 Road	INVOICE ATTN TO	Ed Winters		
CITY / STATE / ZIP	Grand Junction, CO. 81505	ADDRESS	120 Railroad Ave. Suite D		
PHONE	970-243-3271	CITY / STATE / ZIP	Parachute, CO 81635		
FAX	970-243-3280	PHONE	970-285-9606		
E-MAIL	hlucero@hrlcomp.com	FAX			
		E-MAIL	ewinters@petd.com		

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	SAR/ECL/pH	ARSENIC
1	BKGD 1	SOIL	7-22-13	1345	2	8		X	X
2	BKGD 2	SOIL	7-22-13	1335	1	8			X
3	BKGD 3	SOIL	7-22-13	1330	1	8			X

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

For metals or anions, please detail analytes below.

Comments: 5.0C

QC PACKAGE (check below)	
x	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Casey Richardson	7-22-13	1625
RECEIVED BY		Colby Koerner	7/22/13	1625
RELINQUISHED BY		Colby Koerner	7/22/13	1625
RECEIVED BY	Fed Ex			
RELINQUISHED BY				
RECEIVED BY		Diane F Shea	7/23/13	1000

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **HRL** Date/Time Received: **23-Jul-13 10:00**

Work Order: **1307799** Received by: **DS**

Checklist completed by Diane Shaw eSignature 23-Jul-13 Date Reviewed by: Ann Preston eSignature 28-Jul-13 Date

Matrices: Soil
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	5.0 c		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	7/23/2013 10:56:26 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

From: (970) 424-4749
Lab Hub, LLC

127 E First Street

PARACHUTE, CO 81635

Origin ID: RILA

FedEx Express

J13111302120326

Ship Date: 22JUL13
ActWgt: 80.0 LB
CAD: 103923490/INET3370

Dims: 25 X 14 X 15 IN

Delivery Address Bar Code

Ref # 1001-072213-3
Invoice #
PO #
Dept #

SHIP TO: (616) 399-6070 BILL RECIPIENT

Sample recieving
ALS Holland
3352 128TH AVE

HOLLAND, MI 49424

TUE - 23 JUL 3:00P
STANDARD OVERNIGHT

TRK# 0201 **7962 8879 8431**

XX GRRA

49424
MI-US
GRR

518G1/AA04/93AB

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