June 6, 2022

Jake Janicek
Environmental Specialist
Caerus Oil & Gas LLC (Operator #: 10456)
jjanicek@caerusoilandgas.com

Report of Work Completed – Drilling Mud Release

COGCC Location Name (ID)	ELU J14 /FED-496 PAD (467272)
Operator Location Name	J14 496
Remediation Project #	19518
Legal Description	NESW Sec. 14 T4S-R96W
Coordinates (Lat/Long)	39.700947 / -108.137218
County	Rio Blanco County, Colorado

Mr. Janicek,

Confluence Compliance Companies, LLC (Confluence) prepared this Report of Work Completed (ROWC) for Caerus Oil & Gas LLC (Caerus) to document recent characterization activities associated with a release of drilling mud at the J14 496 well pad (Location). The Location is 17.5 miles northwest of Parachute, Colorado in Garfield County as illustrated in the attached Topographic Location Map. Additional information on the Location and associated release is provided in the title block above, attached Site Diagrams, and laboratory analytical reports. This ROWC provides background on the Location, methods used to complete the remedial investigation, results of the investigation, and recommendations for how to proceed with this information.

Background

During drilling activities on January 28, 2021, a gas kick caused the release of approximately 4 barrels (bbls) of drilling mud on the pad surface. The spill was reported using a Colorado Oil andGas Conservation Commission (COGCC) Form 19 (Document 402586515) and assigned Spill ID479279. Due health and safety concerns associated with the active drill rig,investigation activities could not begin within 30 days. Therefore, on April 20, 2021, a COGCC Form 27 (Document 42658889) was submitted and remediation project number 19518 was assigned.

Methodology

On April 29, 2022, Confluence conducted investigation activities associated with the mud release at the Location. Using a hand auger, four soil samples were collected from 6 inches below ground surface (bgs). The soil was characterized using visual and olfactory observations and field-screened soil samples for volatile organic compounds using a photoionization detector (PID). All activities were performed in accordance with COGCC Form 27 Document 402658889.

All collected samples were placed in laboratory provided containers, immediately placed on ice, and shipped for laboratory analysis under chain of custody. The release area and sample locations are illustrated in the attached Site Diagrams.

Results

These results summarize observations from onsite investigation efforts and associated laboratory analytical results. For organizational and presentation purposes, the results summary is divided between general observations of lithology and hydrogeology for the entire Location and excavation activities.

Laboratory analytical reports are attached and summarized in the Laboratory Results Summary Table.

Lithology and Hydrogeology

Lithology at the Location is characterized as sandy gravel. Groundwater is expected to flow north along the East Fork Creek, and ultimately the White River, located 26.4 miles north of the Location.

Spill Investigation Results

Laboratory results of spill investigation soil samples indicate compliance with COGCC Table 915-1 Residential Soil Screening Level Concentrations except total petroleum hydrocarbons (TPH), sodium adsorption ration (SAR), pH, boron, arsenic, and barium. TPH exceedances range between 573 milligrams per kilogram (mg/kg) in the northeast sample to 838 mg/kg in the southwest sample. SAR exceedances are reported between 10.7 in the northwest sample and 15.6 in the southeast sample. Exceedances for pH range between 8.46 in the northeast sample and 8.90 in the southeast sample. Boron exceedances are reported between 5.09 mg/kg in the southeast sample to 10.7 mg/kg in the northwest sample. Arsenic exceedances range from 5.17 mg/kg in the southeast sample to 9.54 mg/kg in the southwest sample. Barium exceedances range between 14,400 mg/kg in the southwest sample and 15,500 mg/kg in the southeast sample.

Analysis and Recommendations

Based on these results and analyses, TPH, SAR, pH, boron, arsenic, and barium values exceeding COGCC Table 915-1 Residential Soil Screening Level Concentrations remain within the release area. Confluence recommends that Caerus complete additional soil sampling to delineate horizontal and vertical impacts and to establish background concentrations at the Location. Prior to delineation activities, it is recommended that Caerus use this data to request COGCC approval of a reduced analyte suite to TPH, SAR, pH, arsenic, boron, and barium.

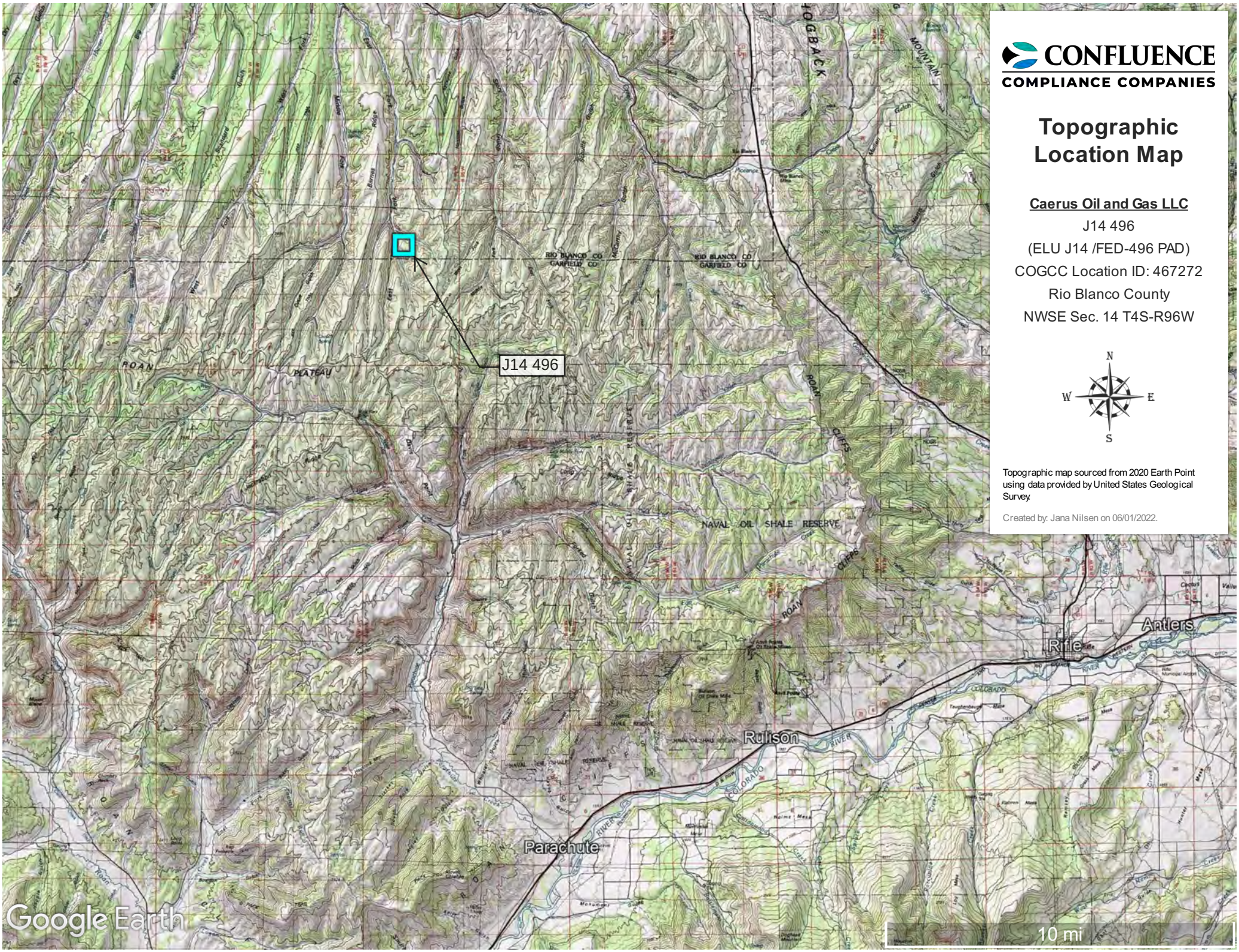
Confluence is grateful for the opportunity to support you with this project. If you have any questions about the methods, results, or recommendations presented here, please do not hesitate to contact me.

Regards,

Chris McKisson
Managing Partner
(720) 490-6758
chris.mckisson@confluence-cc.com

Attachments

- Topographic Location Map
- Site Diagram – Release Area and Sample Locations
- Laboratory Results Summary Table
- Laboratory Analytical Reports



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Topographic Location Map

Caerus Oil and Gas LLC

J14 496

(ELU J14 /FED-496 PAD)

COGCC Location ID: 467272

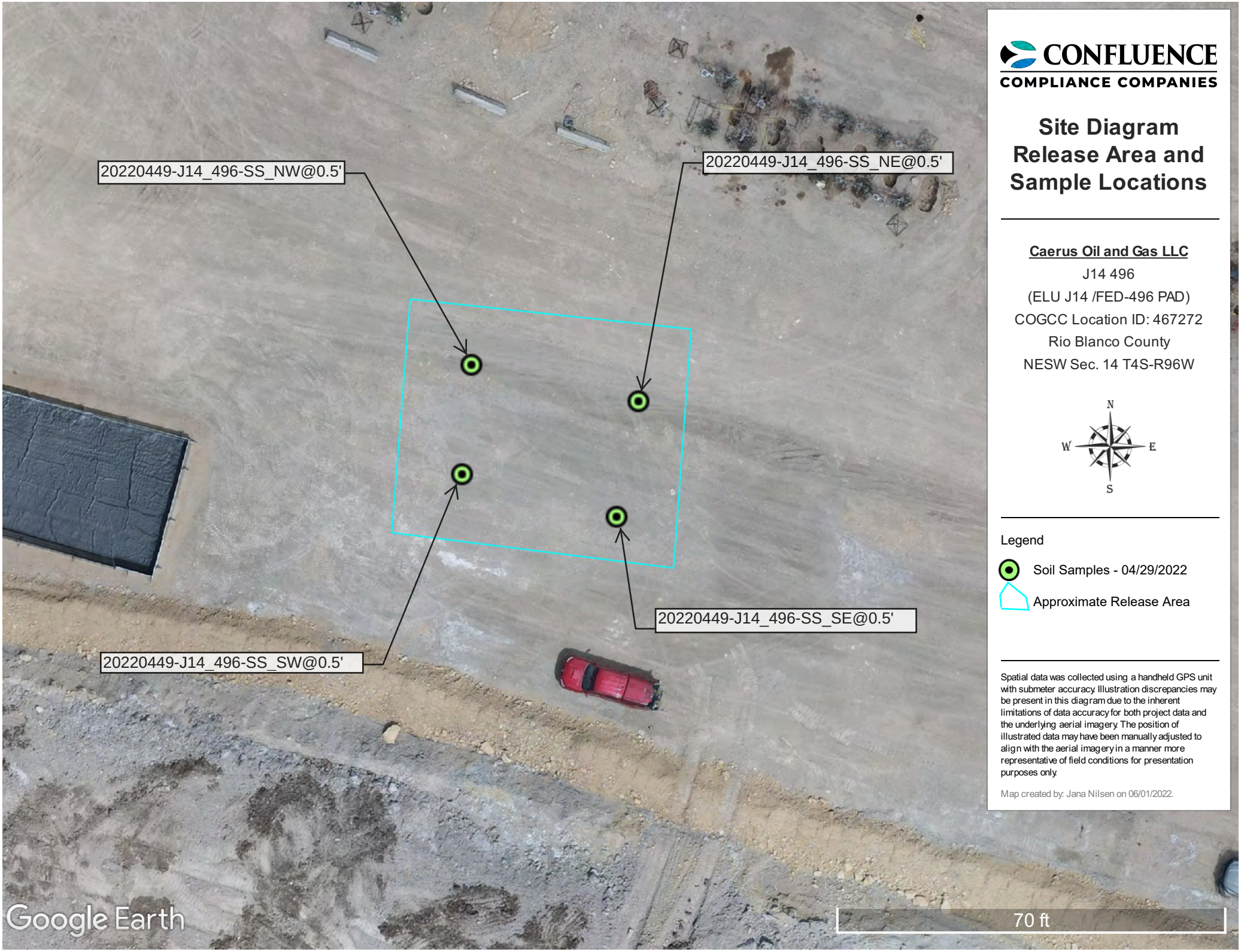
Rio Blanco County

NWSE Sec. 14 T4S-R96W

N
W E
S

Topographic map sourced from 2020 Earth Point using data provided by United States Geological Survey.

Created by: Jana Nilsen on 06/01/2022.



CONFLUENCE
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Site Diagram Release Area and Sample Locations

Caerus Oil and Gas LLC
J14 496
(ELU J14 /FED-496 PAD)
COGCC Location ID: 467272
Rio Blanco County
NESW Sec. 14 T4S-R96W

N
W
E
S

Legend

- Soil Samples - 04/29/2022
- Approximate Release Area

Spatial data was collected using a handheld GPS unit with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. The position of illustrated data may have been manually adjusted to align with the aerial imagery in a manner more representative of field conditions for presentation purposes only.

Map created by: Jana Nilsen on 06/01/2022.

CONFLUENCE

Laboratory Results Summary Table - Soil
J14-496

5/26/2022

Soil Screening and Remediation Limits				Organic Compounds (mg/kg [ppm])																								
COGCC Table 915-1 Groundwater Protection -->			NA	500	NA	NA	NA	0.0026	0.69	0.78	9.9	0.0081	0.0087	0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	0.006	0.019	0.0038	1.3
Location	Sample Date	Sample ID	PID (ppm)	TPH (total volatile and extractable petroleum hydrocarbons) (GRO+DRO+ORO)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C28) High Fraction	TPH-ORO (C28-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes - total (sum of o-, m-, p- isomers)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Acenaphthene	Anthracene	Benzo(A)anthracene	Benzo(A)pyrene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3,C,D)pyrene	1- Methylnaphthalene	2- Methylnaphthalene	Naphthalene	Pyrene
J14 496	4/29/2022	**20220429-J14_496-SS_SE@0.5'**	**4.9**	**421**	**0.434**	**182**	**239**	**0.103**	**0.312**	**0.0461**	**0.250**	**0.0393**	**0.0113**	**0.0106**	*<0.00600*	*<0.00600*	*<0.00600*	**0.00667**	*<0.00600*	**0.0145**	*<0.00600*	**0.00641**	**0.0302**	*<0.00600*	**0.225**	**0.373**	**0.159**	**0.0273**
J14 496	4/29/2022	**20220429-J14_496-SS_NE@0.5'**	**6**	**573**	**0.337**	**233**	**340**	**0.126**	**0.272**	**0.0343**	**0.183**	**0.0310**	**0.0103**	**0.0117**	*<0.00600*	*<0.00600*	*<0.00600*	**0.00669**	*<0.00600*	**0.0124**	*<0.00600*	**0.00600**	**0.0291**	*<0.00600*	**0.179**	**0.307**	**0.138**	**0.0290**
J14 496	4/29/2022	**20220429-J14_496-SS_NW@0.5'**	**5.1**	**623**	**0.316**	**240**	**383**	**0.119**	**0.267**	**0.0338**	**0.174**	**0.0277**	**0.00988**	**0.0113**	*<0.00600*	*<0.00600*	*<0.00600*	**0.00667**	*<0.00600*	**0.0127**	*<0.00600*	**0.00641**	**0.0281**	*<0.00600*	**0.196**	**0.331**	**0.147**	**0.0273**
J14 496	4/29/2022	**20220429-J14_496-SS_SW@0.5'**	**2.9**	**838**	**0.422**	**328**	**510**	**0.0969**	**0.251**	**0.0319**	**0.194**	**0.036**	**0.0110**	**0.0178**	**0.00609**	**0.0231**	**0.0182**	**0.0232**	**0.00622**	**0.0305**	*<0.00600*	**0.0406**	**0.0343**	**0.00964**	**0.233**	**0.404**	**0.163**	**0.0752**

Confluence Compliance Companies, LLC
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Orange Fill = Exceedance
Dark Gray Italics = Below Reporting Detection Limit (RDL)
"NA" = Not Analyzed
mg/kg = milligrams per kilogram / parts per million

CONFLUENCE

Laboratory Results Summary Table - Soil
J14-496

5/26/2022

Soil Screening and Remediation Limits			Soil Suitability for Reclamation				Metals (mg/kg [ppm])											
COGCC Table 915-1 Groundwater Protection -->			4	6	6-8.3	2	0.29	82	0.38	NA	0.00067	46	14	NA	26	0.26	0.8	370
Location	Sample Date	Sample ID	EC (Specific Conductance) (millimhos/centimeter) (by saturated paste method)	SAR (Sodium Adsorption Ratio) (calculation) (by saturated paste method)	pH (pH Units) (by saturated paste method)	Boron - Hot Water Soluble (mg/L)	Arsenic	Barium	Cadmium (mg/kg)	Chromium (III)	Chromium (VI)	Copper	Lead	Mercury *(Total Mercury by EPA 7471)*	Nickel	Selenium	Silver	Zinc
J14 496	4/29/2022	**20220429-J14_496-SS_SE@0.5'**	**1.550**	**15.6**	**8.90**	**5.09**	**5.17**	**15500**	*<5.00*	*NA*	*<1.00*	**24.7**	**11.3**	*NA*	**16.0**	*<2.00*	*<1.00*	**49.2**
J14 496	4/29/2022	**20220429-J14_496-SS_NE@0.5'**	**3.940**	**11.7**	**8.46**	**7.03**	**6.26**	**15200**	*<5.00*	*NA*	*<1.00*	**28.9**	**14.3**	*NA*	**18.4**	*<2.00*	*<1.00*	**54.5**
J14 496	4/29/2022	**20220429-J14_496-SS_NW@0.5'**	**2.790**	**10.7**	**8.54**	**10.7**	**7.45**	**15300**	*<0.500*	*NA*	*<1.00*	**32.8**	**15.4**	*NA*	**22.3**	*<2.00*	*<1.00*	**64.3**
J14 496	4/29/2022	**20220429-J14_496-SS_SW@0.5'**	**2.380**	**13.5**	**8.57**	**6.690**	**9.54**	**14400**	*<0.500*	*NA*	*<1.00*	**29.7**	**13.7**	*NA*	**20.1**	*<2.00*	*<1.00*	**55.9**

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"NA" = Not Analyzed
mg/kg = milligrams per kilogram / parts per million

ANALYTICAL REPORT

May 17, 2022

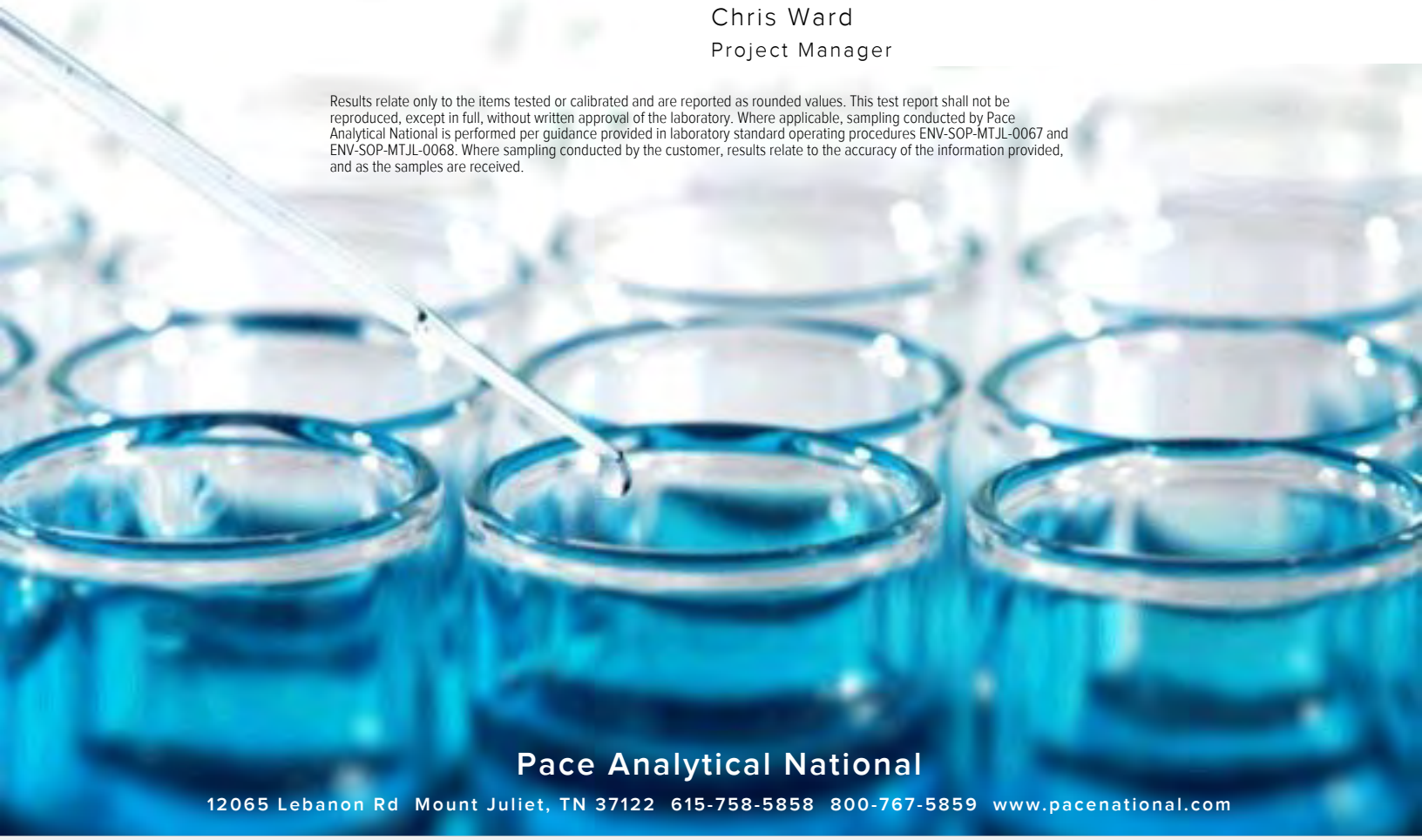
Revised Report

Caerus Oil and Gas

Sample Delivery Group:	L1488915
Samples Received:	05/03/2022
Project Number:	
Description:	J14 496 Cuttings
Site:	J14 496
Report To:	Brett Middleton 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By:

Chris Ward
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

20220429-J14_496-SS_SE@0.5' L1488915-12 Solid

Collected by: Alex Slorby | Collected date/time: 04/29/22 13:15 | Received date/time: 05/03/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1858975	1	05/10/22 18:24	05/10/22 18:24	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1860696	1	05/08/22 19:00	05/10/22 21:06	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1861165	1	05/07/22 17:00	05/09/22 18:00	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1860341	1	05/07/22 13:31	05/07/22 16:02	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1860015	1	05/08/22 23:36	05/10/22 03:40	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1860015	10	05/08/22 23:36	05/11/22 16:18	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1858974	1	05/09/22 20:13	05/10/22 20:55	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1860022	5	05/08/22 23:37	05/09/22 16:30	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1859009	1.01	05/04/22 16:58	05/07/22 23:19	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1860234	1	05/04/22 16:58	05/07/22 11:21	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1862279	5	05/11/22 17:30	05/12/22 04:38	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1862287	1	05/12/22 10:14	05/12/22 17:07	AMG	Mt. Juliet, TN

20220429-J14_496-SS_NE@0.5' L1488915-13 Solid

Collected by: Alex Slorby | Collected date/time: 04/29/22 13:25 | Received date/time: 05/03/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1858975	1	05/10/22 18:26	05/10/22 18:26	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1860696	1	05/08/22 19:00	05/10/22 21:11	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1861165	1	05/07/22 17:00	05/09/22 18:00	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1861040	1	05/10/22 09:03	05/10/22 13:48	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1860015	1	05/08/22 23:36	05/10/22 03:43	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1860015	10	05/08/22 23:36	05/11/22 16:21	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1858974	1	05/09/22 20:13	05/10/22 20:58	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1860022	5	05/08/22 23:37	05/09/22 16:33	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1859718	1	05/04/22 16:58	05/09/22 00:11	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1860239	1	05/04/22 16:58	05/08/22 15:30	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1862285	5	05/11/22 20:31	05/12/22 04:02	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1862287	1	05/12/22 10:14	05/12/22 17:25	AMG	Mt. Juliet, TN

20220429-J14_496-SS_NW@0.5' L1488915-14 Solid

Collected by: Alex Slorby | Collected date/time: 04/29/22 13:30 | Received date/time: 05/03/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1858975	1	05/10/22 18:29	05/10/22 18:29	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1860696	1	05/08/22 19:00	05/10/22 21:16	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1860424	1	05/09/22 10:10	05/09/22 10:15	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1861040	1	05/10/22 09:03	05/10/22 13:48	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1860015	1	05/08/22 23:36	05/10/22 03:46	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1860015	10	05/08/22 23:36	05/11/22 16:24	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1858974	1	05/09/22 20:13	05/10/22 21:01	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1860022	5	05/08/22 23:37	05/09/22 16:51	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1859718	1.01	05/04/22 16:58	05/09/22 00:33	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1860239	1	05/04/22 16:58	05/08/22 15:49	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1862285	5	05/11/22 20:31	05/12/22 04:16	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1862287	1	05/12/22 10:14	05/12/22 16:50	AMG	Mt. Juliet, TN

SAMPLE SUMMARY

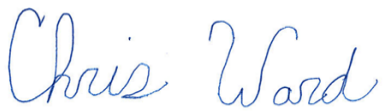
20220429-J14_496-SS_SW@0.5' L1488915-15 Solid

Collected by: Alex Slorby
Collected date/time: 04/29/22 13:35
Received date/time: 05/03/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1858975	1	05/10/22 18:37	05/10/22 18:37	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1860696	1	05/08/22 19:00	05/10/22 21:21	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1861165	1	05/07/22 17:00	05/09/22 18:00	EPW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1861040	1	05/10/22 09:03	05/10/22 13:48	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1860015	1	05/08/22 23:36	05/10/22 03:54	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1860015	10	05/08/22 23:36	05/11/22 16:26	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1858974	1	05/09/22 20:13	05/10/22 21:04	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1860022	5	05/08/22 23:37	05/09/22 16:54	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1859718	1.01	05/04/22 16:58	05/09/22 00:54	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1860239	1	05/04/22 16:58	05/08/22 16:09	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1862285	5	05/11/22 20:31	05/12/22 04:29	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1862287	1	05/12/22 10:14	05/12/22 18:01	AMG	Mt. Juliet, TN

CASE NARRATIVE

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



Chris Ward
Project Manager

Report Revision History

Level II Report - Version 1: 05/13/22 10:52
Level II Report - Version 2: 05/17/22 16:44

Project Narrative

Rerun to split into component reports

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	15.6		1	05/10/2022 18:24	WG1858975

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	05/10/2022 21:06	WG1860696

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.90	T8	1	05/09/2022 18:00	WG1861165

Sample Narrative:
L1488915-12 WG1861165: 8.9 at 22.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1550		10.0	1	05/07/2022 16:02	WG1860341

Sample Narrative:
L1488915-12 WG1860341: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	15500		5.00	10	05/11/2022 16:18	WG1860015
Cadmium	ND		5.00	10	05/11/2022 16:18	WG1860015
Copper	24.7		2.00	1	05/10/2022 03:40	WG1860015
Lead	11.3		0.500	1	05/10/2022 03:40	WG1860015
Nickel	16.0		2.00	1	05/10/2022 03:40	WG1860015
Selenium	ND		2.00	1	05/10/2022 03:40	WG1860015
Silver	ND		1.00	1	05/10/2022 03:40	WG1860015
Zinc	49.2		5.00	1	05/10/2022 03:40	WG1860015

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	5.09		0.200	1	05/10/2022 20:55	WG1858974

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.17		1.00	5	05/09/2022 16:30	WG1860022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.434		0.101	1.01	05/07/2022 23:19	WG1859009
(S) a,a,a-Trifluorotoluene(FID)	*89.3*		*77.0-120*		*05/07/2022 23:19*	WG1859009

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.103	J5	0.00100	1	05/07/2022 11:21	WG1860234
Toluene	0.312	J5	0.00500	1	05/07/2022 11:21	WG1860234
Ethylbenzene	0.0461	J5	0.00250	1	05/07/2022 11:21	WG1860234
Xylenes, Total	0.250	J5	0.00650	1	05/07/2022 11:21	WG1860234
1,2,4-Trimethylbenzene	0.0393		0.00500	1	05/07/2022 11:21	WG1860234
1,3,5-Trimethylbenzene	0.0113		0.00500	1	05/07/2022 11:21	WG1860234
(S) Toluene-d8	*109*		*75.0-131*		*05/07/2022 11:21*	WG1860234
(S) 4-Bromofluorobenzene	*94.3*		*67.0-138*		*05/07/2022 11:21*	WG1860234
(S) 1,2-Dichloroethane-d4	*96.8*		*70.0-130*		*05/07/2022 11:21*	WG1860234

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	182		20.0	5	05/12/2022 04:38	WG1862279
C28-C36 Motor Oil Range	239		20.0	5	05/12/2022 04:38	WG1862279
(S) o-Terphenyl	*103*		*18.0-148*		*05/12/2022 04:38*	WG1862279

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	0.0106		0.00600	1	05/12/2022 17:07	WG1862287
Anthracene	ND		0.00600	1	05/12/2022 17:07	WG1862287
Benzo(a)anthracene	ND		0.00600	1	05/12/2022 17:07	WG1862287
Benzo(b)fluoranthene	0.00667		0.00600	1	05/12/2022 17:07	WG1862287
Benzo(k)fluoranthene	ND		0.00600	1	05/12/2022 17:07	WG1862287
Benzo(a)pyrene	ND		0.00600	1	05/12/2022 17:07	WG1862287
Chrysene	0.0145		0.00600	1	05/12/2022 17:07	WG1862287
Dibenz(a,h)anthracene	ND		0.00600	1	05/12/2022 17:07	WG1862287
Fluoranthene	0.00641		0.00600	1	05/12/2022 17:07	WG1862287
Fluorene	0.0302		0.00600	1	05/12/2022 17:07	WG1862287
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	05/12/2022 17:07	WG1862287
1-Methylnaphthalene	0.225		0.0200	1	05/12/2022 17:07	WG1862287
2-Methylnaphthalene	0.373		0.0200	1	05/12/2022 17:07	WG1862287
Naphthalene	0.159		0.0200	1	05/12/2022 17:07	WG1862287
Pyrene	0.0273		0.00600	1	05/12/2022 17:07	WG1862287
(S) p-Terphenyl-d14	*100*		*23.0-120*		*05/12/2022 17:07*	WG1862287
(S) Nitrobenzene-d5	*84.1*		*14.0-149*		*05/12/2022 17:07*	WG1862287
(S) 2-Fluorobiphenyl	*83.7*		*34.0-125*		*05/12/2022 17:07*	WG1862287

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	11.7		1	05/10/2022 18:26	WG1858975

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	05/10/2022 21:11	WG1860696

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.46	T8	1	05/09/2022 18:00	WG1861165

Sample Narrative:

L1488915-13 WG1861165: 8.46 at 21.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3940		10.0	1	05/10/2022 13:48	WG1861040

Sample Narrative:

L1488915-13 WG1861040: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	15200		5.00	10	05/11/2022 16:21	WG1860015
Cadmium	ND		5.00	10	05/11/2022 16:21	WG1860015
Copper	28.9		2.00	1	05/10/2022 03:43	WG1860015
Lead	14.3		0.500	1	05/10/2022 03:43	WG1860015
Nickel	18.4		2.00	1	05/10/2022 03:43	WG1860015
Selenium	ND		2.00	1	05/10/2022 03:43	WG1860015
Silver	ND		1.00	1	05/10/2022 03:43	WG1860015
Zinc	54.5		5.00	1	05/10/2022 03:43	WG1860015

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	7.03		0.200	1	05/10/2022 20:58	WG1858974

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.26		1.00	5	05/09/2022 16:33	WG1860022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.337		0.100	1	05/09/2022 00:11	WG1859718
(S) a,a,a-Trifluorotoluene(FID)	*101*		*77.0-120*		*05/09/2022 00:11*	WG1859718

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.126		0.00100	1	05/08/2022 15:30	WG1860239
Toluene	0.272		0.00500	1	05/08/2022 15:30	WG1860239
Ethylbenzene	0.0343		0.00250	1	05/08/2022 15:30	WG1860239
Xylenes, Total	0.183		0.00650	1	05/08/2022 15:30	WG1860239
1,2,4-Trimethylbenzene	0.0310		0.00500	1	05/08/2022 15:30	WG1860239
1,3,5-Trimethylbenzene	0.0103		0.00500	1	05/08/2022 15:30	WG1860239
(S) Toluene-d8	*95.1*		*75.0-131*		*05/08/2022 15:30*	WG1860239
(S) 4-Bromofluorobenzene	*101*		*67.0-138*		*05/08/2022 15:30*	WG1860239
(S) 1,2-Dichloroethane-d4	*95.3*		*70.0-130*		*05/08/2022 15:30*	WG1860239

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	233		20.0	5	05/12/2022 04:02	WG1862285
C28-C36 Motor Oil Range	340		20.0	5	05/12/2022 04:02	WG1862285
(S) o-Terphenyl	*47.2*		*18.0-148*		*05/12/2022 04:02*	WG1862285

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	0.0117		0.00600	1	05/12/2022 17:25	WG1862287
Anthracene	ND		0.00600	1	05/12/2022 17:25	WG1862287
Benzo(a)anthracene	ND		0.00600	1	05/12/2022 17:25	WG1862287
Benzo(b)fluoranthene	0.00669		0.00600	1	05/12/2022 17:25	WG1862287
Benzo(k)fluoranthene	ND		0.00600	1	05/12/2022 17:25	WG1862287
Benzo(a)pyrene	ND		0.00600	1	05/12/2022 17:25	WG1862287
Chrysene	0.0124		0.00600	1	05/12/2022 17:25	WG1862287
Dibenz(a,h)anthracene	ND		0.00600	1	05/12/2022 17:25	WG1862287
Fluoranthene	0.00600		0.00600	1	05/12/2022 17:25	WG1862287
Fluorene	0.0291		0.00600	1	05/12/2022 17:25	WG1862287
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	05/12/2022 17:25	WG1862287
1-Methylnaphthalene	0.179		0.0200	1	05/12/2022 17:25	WG1862287
2-Methylnaphthalene	0.307		0.0200	1	05/12/2022 17:25	WG1862287
Naphthalene	0.138		0.0200	1	05/12/2022 17:25	WG1862287
Pyrene	0.0290		0.00600	1	05/12/2022 17:25	WG1862287
(S) p-Terphenyl-d14	*96.5*		*23.0-120*		*05/12/2022 17:25*	WG1862287
(S) Nitrobenzene-d5	*84.5*		*14.0-149*		*05/12/2022 17:25*	WG1862287
(S) 2-Fluorobiphenyl	*78.8*		*34.0-125*		*05/12/2022 17:25*	WG1862287

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	10.7		1	05/10/2022 18:29	WG1858975

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	05/10/2022 21:16	WG1860696

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.54	T8	1	05/09/2022 10:15	WG1860424

Sample Narrative:
L1488915-14 WG1860424: 8.54 at 20.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2790		10.0	1	05/10/2022 13:48	WG1861040

Sample Narrative:
L1488915-14 WG1861040: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	15300		5.00	10	05/11/2022 16:24	WG1860015
Cadmium	ND		0.500	1	05/10/2022 03:46	WG1860015
Copper	32.8		2.00	1	05/10/2022 03:46	WG1860015
Lead	15.4		0.500	1	05/10/2022 03:46	WG1860015
Nickel	22.3		2.00	1	05/10/2022 03:46	WG1860015
Selenium	ND		2.00	1	05/10/2022 03:46	WG1860015
Silver	ND		1.00	1	05/10/2022 03:46	WG1860015
Zinc	64.3		5.00	1	05/10/2022 03:46	WG1860015

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	10.7		0.200	1	05/10/2022 21:01	WG1858974

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.45		1.00	5	05/09/2022 16:51	WG1860022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.316		0.101	1.01	05/09/2022 00:33	WG1859718
(S) a,a,a-Trifluorotoluene(FID)	*99.4*		*77.0-120*		*05/09/2022 00:33*	WG1859718

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.119		0.00100	1	05/08/2022 15:49	WG1860239
Toluene	0.267		0.00500	1	05/08/2022 15:49	WG1860239
Ethylbenzene	0.0338		0.00250	1	05/08/2022 15:49	WG1860239
Xylenes, Total	0.174		0.00650	1	05/08/2022 15:49	WG1860239
1,2,4-Trimethylbenzene	0.0277		0.00500	1	05/08/2022 15:49	WG1860239
1,3,5-Trimethylbenzene	0.00988		0.00500	1	05/08/2022 15:49	WG1860239
(S) Toluene-d8	*96.5*		*75.0-131*		*05/08/2022 15:49*	WG1860239
(S) 4-Bromofluorobenzene	*99.6*		*67.0-138*		*05/08/2022 15:49*	WG1860239
(S) 1,2-Dichloroethane-d4	*92.4*		*70.0-130*		*05/08/2022 15:49*	WG1860239

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	240		20.0	5	05/12/2022 04:16	WG1862285
C28-C36 Motor Oil Range	383		20.0	5	05/12/2022 04:16	WG1862285
(S) o-Terphenyl	*47.6*		*18.0-148*		*05/12/2022 04:16*	WG1862285

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	0.0113		0.00600	1	05/12/2022 16:50	WG1862287
Anthracene	ND		0.00600	1	05/12/2022 16:50	WG1862287
Benzo(a)anthracene	ND		0.00600	1	05/12/2022 16:50	WG1862287
Benzo(b)fluoranthene	0.00667		0.00600	1	05/12/2022 16:50	WG1862287
Benzo(k)fluoranthene	ND		0.00600	1	05/12/2022 16:50	WG1862287
Benzo(a)pyrene	ND		0.00600	1	05/12/2022 16:50	WG1862287
Chrysene	0.0127		0.00600	1	05/12/2022 16:50	WG1862287
Dibenz(a,h)anthracene	ND		0.00600	1	05/12/2022 16:50	WG1862287
Fluoranthene	0.00641		0.00600	1	05/12/2022 16:50	WG1862287
Fluorene	0.0281		0.00600	1	05/12/2022 16:50	WG1862287
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	05/12/2022 16:50	WG1862287
1-Methylnaphthalene	0.196		0.0200	1	05/12/2022 16:50	WG1862287
2-Methylnaphthalene	0.331		0.0200	1	05/12/2022 16:50	WG1862287
Naphthalene	0.147		0.0200	1	05/12/2022 16:50	WG1862287
Pyrene	0.0273		0.00600	1	05/12/2022 16:50	WG1862287
(S) p-Terphenyl-d14	*99.9*		*23.0-120*		*05/12/2022 16:50*	WG1862287
(S) Nitrobenzene-d5	*78.9*		*14.0-149*		*05/12/2022 16:50*	WG1862287
(S) 2-Fluorobiphenyl	*80.7*		*34.0-125*		*05/12/2022 16:50*	WG1862287

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	13.5		1	05/10/2022 18:37	WG1858975

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Hexavalent Chromium	ND		1.00	1	05/10/2022 21:21	WG1860696

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	pH				
pH	8.57	T8	1	05/09/2022 18:00	WG1861165

Sample Narrative:

L1488915-15 WG1861165: 8.57 at 22C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	2380		10.0	1	05/10/2022 13:48	WG1861040

Sample Narrative:

L1488915-15 WG1861040: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	14400		5.00	10	05/11/2022 16:26	WG1860015
Cadmium	ND		0.500	1	05/10/2022 03:54	WG1860015
Copper	29.7		2.00	1	05/10/2022 03:54	WG1860015
Lead	13.7		0.500	1	05/10/2022 03:54	WG1860015
Nickel	20.1		2.00	1	05/10/2022 03:54	WG1860015
Selenium	ND		2.00	1	05/10/2022 03:54	WG1860015
Silver	ND		1.00	1	05/10/2022 03:54	WG1860015
Zinc	55.9		5.00	1	05/10/2022 03:54	WG1860015

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/l		mg/l			
Hot Water Sol. Boron	6.69		0.200	1	05/10/2022 21:04	WG1858974

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	9.54		1.00	5	05/09/2022 16:54	WG1860022

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
TPH (GC/FID) Low Fraction	0.422		0.101	1.01	05/09/2022 00:54	WG1859718
(S) a,a,a-Trifluorotoluene(FID)	*101*		*77.0-120*		*05/09/2022 00:54*	WG1859718

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.0969		0.00100	1	05/08/2022 16:09	WG1860239
Toluene	0.251		0.00500	1	05/08/2022 16:09	WG1860239
Ethylbenzene	0.0319		0.00250	1	05/08/2022 16:09	WG1860239
Xylenes, Total	0.194		0.00650	1	05/08/2022 16:09	WG1860239
1,2,4-Trimethylbenzene	0.0360		0.00500	1	05/08/2022 16:09	WG1860239
1,3,5-Trimethylbenzene	0.0110		0.00500	1	05/08/2022 16:09	WG1860239
(S) Toluene-d8	*94.8*		*75.0-131*		*05/08/2022 16:09*	WG1860239
(S) 4-Bromofluorobenzene	*95.9*		*67.0-138*		*05/08/2022 16:09*	WG1860239
(S) 1,2-Dichloroethane-d4	*97.9*		*70.0-130*		*05/08/2022 16:09*	WG1860239

Semi-Volatile Organic Compounds (GC) by Method 8015M

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	328		20.0	5	05/12/2022 04:29	WG1862285
C28-C36 Motor Oil Range	510		20.0	5	05/12/2022 04:29	WG1862285
(S) o-Terphenyl	*46.9*		*18.0-148*		*05/12/2022 04:29*	WG1862285

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	0.0178		0.00600	1	05/12/2022 18:01	WG1862287
Anthracene	0.00609		0.00600	1	05/12/2022 18:01	WG1862287
Benzo(a)anthracene	0.0231		0.00600	1	05/12/2022 18:01	WG1862287
Benzo(b)fluoranthene	0.0232		0.00600	1	05/12/2022 18:01	WG1862287
Benzo(k)fluoranthene	0.00622		0.00600	1	05/12/2022 18:01	WG1862287
Benzo(a)pyrene	0.0182		0.00600	1	05/12/2022 18:01	WG1862287
Chrysene	0.0305		0.00600	1	05/12/2022 18:01	WG1862287
Dibenz(a,h)anthracene	ND		0.00600	1	05/12/2022 18:01	WG1862287
Fluoranthene	0.0406		0.00600	1	05/12/2022 18:01	WG1862287
Fluorene	0.0343		0.00600	1	05/12/2022 18:01	WG1862287
Indeno(1,2,3-cd)pyrene	0.00964		0.00600	1	05/12/2022 18:01	WG1862287
1-Methylnaphthalene	0.233		0.0200	1	05/12/2022 18:01	WG1862287
2-Methylnaphthalene	0.404		0.0200	1	05/12/2022 18:01	WG1862287
Naphthalene	0.163		0.0200	1	05/12/2022 18:01	WG1862287
Pyrene	0.0752		0.00600	1	05/12/2022 18:01	WG1862287
(S) p-Terphenyl-d14	*102*		*23.0-120*		*05/12/2022 18:01*	WG1862287
(S) Nitrobenzene-d5	*85.4*		*14.0-149*		*05/12/2022 18:01*	WG1862287
(S) 2-Fluorobiphenyl	*84.4*		*34.0-125*		*05/12/2022 18:01*	WG1862287

Method Blank (MB)

(MB) R3790758-1 05/10/22 18:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Hexavalent Chromium	U		0.255	1.00

L1488725-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1488725-16 05/10/22 19:12 • (DUP) R3790758-3 05/10/22 19:17

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	ND	ND	1	0.000		20

L1489294-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1489294-01 05/10/22 21:32 • (DUP) R3790758-10 05/10/22 21:37

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3790758-2 05/10/22 19:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	9.69	96.9	80.0-120	

L1488915-11 Original Sample (OS) • Matrix Spike (MS)

(OS) L1488915-11 05/10/22 20:29 • (MS) R3790758-8 05/10/22 20:45

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	657	ND	571	87.0	50	75.0-125	

L1488915-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1488915-11 05/10/22 20:29 • (MS) R3790758-6 05/10/22 20:35 • (MSD) R3790758-7 05/10/22 20:40

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	ND	8.02	8.51	40.1	42.6	1	75.0-125	J6	J6	6.03	20

L1488915-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1488915-14 05/09/22 10:15 • (DUP) R3789944-2 05/09/22 10:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	8.54	8.59	1	0.584		1

Sample Narrative:

OS: 8.54 at 20.9C

DUP: 8.59 at 20.8C

L1489908-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1489908-03 05/09/22 10:15 • (DUP) R3789944-3 05/09/22 10:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.60	6.60	1	0.000		1

Sample Narrative:

OS: 6.6 at 20.9C

DUP: 6.6 at 20.9C

Laboratory Control Sample (LCS)

(LCS) R3789944-1 05/09/22 10:15

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.93	99.3	99.0-101	

Sample Narrative:

LCS: 9.93 at 20.3C

L1488915-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1488915-05 05/09/22 18:00 • (DUP) R3789819-2 05/09/22 18:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	11.0	8.54	1	25.5	J3	1

Sample Narrative:
OS: 11.04 at 22.1C
DUP: 8.54 at 21.9C

L1489327-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1489327-03 05/09/22 18:00 • (DUP) R3789819-3 05/09/22 18:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	9.01	9.01	1	0.000		1

Sample Narrative:
OS: 9.01 at 22.1C
DUP: 9.01 at 22.9C

L1488915-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1488915-15 05/09/22 18:00 • (DUP) R3789819-4 05/09/22 18:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	8.57	8.54	1	0.351		1

Sample Narrative:
OS: 8.57 at 22C
DUP: 8.54 at 21.9C

Laboratory Control Sample (LCS)

(LCS) R3789819-1 05/09/22 18:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.91	99.1	99.0-101	

Sample Narrative:
LCS: 9.91 at 20.3C

Method Blank (MB)

(MB) R3789253-1 05/07/22 16:02

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:
BLANK: at 25C

L1488915-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1488915-04 05/07/22 16:02 • (DUP) R3789253-3 05/07/22 16:02

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	4880	4690	1	3.97		20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1490285-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1490285-05 05/07/22 16:02 • (DUP) R3789253-4 05/07/22 16:02

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1750	1720	1	1.79		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3789253-2 05/07/22 16:02

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	285	106	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3790164-1 05/10/22 13:48

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:
BLANK: at 25C

L1489300-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1489300-02 05/10/22 13:48 • (DUP) R3790164-3 05/10/22 13:48

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	213	218	1	2.69		20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1489822-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1489822-02 05/10/22 13:48 • (DUP) R3790164-4 05/10/22 13:48

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	571	603	1	5.45		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3790164-2 05/10/22 13:48

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	290	108	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3789936-1 05/10/22 02:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3789936-2 05/10/22 02:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	105	105	80.0-120	
Cadmium	100	104	104	80.0-120	
Copper	100	99.6	99.6	80.0-120	
Lead	100	103	103	80.0-120	
Nickel	100	103	103	80.0-120	
Selenium	100	99.2	99.2	80.0-120	
Silver	20.0	20.9	104	80.0-120	
Zinc	100	94.0	94.0	80.0-120	

L1488915-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1488915-01 05/10/22 02:51 • (MS) R3789936-5 05/10/22 02:59 • (MSD) R3789936-6 05/10/22 03:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	9870	10400	9270	538	0.000	1	75.0-125	E V	E V	11.5	20
Cadmium	100	ND	107	97.1	107	97.1	1	75.0-125			9.62	20
Copper	100	23.4	131	122	107	98.8	1	75.0-125			6.60	20
Lead	100	12.2	119	109	107	97.3	1	75.0-125			8.67	20
Nickel	100	14.2	118	111	104	97.1	1	75.0-125			6.10	20
Selenium	100	ND	103	94.3	103	94.3	1	75.0-125			8.38	20
Silver	20.0	ND	22.6	20.4	113	102	1	75.0-125			10.1	20
Zinc	100	44.5	132	128	87.5	83.5	1	75.0-125			3.13	20

Method Blank (MB)

(MB) R3790387-1 05/10/22 20:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hot Water Sol. Boron	U		0.0167	0.200

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

(LCS) R3790387-2 05/10/22 20:10 • (LCSD) R3790387-3 05/10/22 20:13

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.966	0.968	96.6	96.8	80.0-120			0.284	20

Method Blank (MB)

(MB) R3789775-1 05/09/22 15:24

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3789775-2 05/09/22 15:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	94.2	94.2	80.0-120	

L1488915-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1488915-01 05/09/22 15:31 • (MS) R3789775-5 05/09/22 15:41 • (MSD) R3789775-6 05/09/22 15:44

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	4.21	103	90.1	98.7	85.8	5	75.0-125			13.4	20

Method Blank (MB)

(MB) R3789401-1 05/07/22 12:07

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*98.7*			*77.0-120*

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

(LCS) R3789401-2 05/07/22 12:28 • (LCSD) R3789401-3 05/07/22 17:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.49	6.25	99.8	114	72.0-127			12.9	20
(S) a,a,a-Trifluorotoluene(FID)				*99.3*	*98.7*	*77.0-120*				

L1488357-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1488357-03 05/07/22 15:00 • (MS) R3789401-4 05/07/22 23:40 • (MSD) R3789401-5 05/08/22 00:00

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.45	ND	5.24	5.59	95.0	100	1	10.0-151			6.46	28
(S) a,a,a-Trifluorotoluene(FID)					*99.4*	*100*		*77.0-120*				

Method Blank (MB)

(MB) R3789492-4 05/08/22 21:09

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*111*			*77.0-120*

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

(LCS) R3789492-1 05/08/22 19:10 • (LCSD) R3789492-2 05/08/22 19:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	4.28	5.17	77.8	94.0	72.0-127			18.8	20
(S) a,a,a-Trifluorotoluene(FID)				*102*	*99.8*	*77.0-120*				

L1488915-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1488915-13 05/09/22 00:11 • (MS) R3789492-5 05/09/22 06:39 • (MSD) R3789492-6 05/09/22 07:01

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	0.337	2.76	2.59	44.1	41.3	1	10.0-151			6.36	28
(S) a,a,a-Trifluorotoluene(FID)					*81.5*	*84.3*		*77.0-120*				

Method Blank (MB)

(MB) R3789446-3 05/07/22 04:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*112*			*75.0-131*
(S) 4-Bromofluorobenzene	*84.5*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*99.7*			*70.0-130*

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

(LCS) R3789446-1 05/07/22 03:38 • (LCSD) R3789446-2 05/07/22 03:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.103	0.100	82.4	80.0	70.0-123			2.96	20
Toluene	0.125	0.111	0.111	88.8	88.8	75.0-121			0.000	20
Ethylbenzene	0.125	0.126	0.124	101	99.2	74.0-126			1.60	20
Xylenes, Total	0.375	0.367	0.341	97.9	90.9	72.0-127			7.34	20
1,2,4-Trimethylbenzene	0.125	0.108	0.106	86.4	84.8	70.0-126			1.87	20
1,3,5-Trimethylbenzene	0.125	0.105	0.103	84.0	82.4	73.0-127			1.92	20
(S) Toluene-d8				*97.0*	*101*	*75.0-131*				
(S) 4-Bromofluorobenzene				*96.6*	*91.8*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*111*	*110*	*70.0-130*				

L1488915-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1488915-12 05/07/22 11:21 • (MS) R3789446-4 05/07/22 11:40 • (MSD) R3789446-5 05/07/22 11:59

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.103	0.466	0.481	290	302	1	10.0-149	J5	J5	3.17	37
Toluene	0.125	0.312	1.02	0.908	566	477	1	10.0-156	J5	J5	11.6	38
Ethylbenzene	0.125	0.0461	0.250	0.253	163	166	1	10.0-160	J5	J5	1.19	38
Xylenes, Total	0.375	0.250	1.01	0.995	203	199	1	10.0-160	J5	J5	1.50	38
1,2,4-Trimethylbenzene	0.125	0.0393	0.213	0.224	139	148	1	10.0-160			5.03	36
1,3,5-Trimethylbenzene	0.125	0.0113	0.117	0.131	84.6	95.8	1	10.0-160			11.3	38
(S) Toluene-d8					*123*	*110*		*75.0-131*				
(S) 4-Bromofluorobenzene					*102*	*88.8*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*97.9*	*99.1*		*70.0-130*				

Method Blank (MB)

(MB) R3789784-2 05/08/22 13:28

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	*96.1*			*75.0-131*
(S) 4-Bromofluorobenzene	*98.9*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*95.6*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3789784-1 05/08/22 12:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.125	100	70.0-123	
Toluene	0.125	0.115	92.0	75.0-121	
Ethylbenzene	0.125	0.109	87.2	74.0-126	
Xylenes, Total	0.375	0.323	86.1	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.102	81.6	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.0984	78.7	73.0-127	
(S) Toluene-d8			*92.9*	*75.0-131*	
(S) 4-Bromofluorobenzene			*101*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*100*	*70.0-130*	

Method Blank (MB)

(MB) R3790941-1 05/11/22 22:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	1.65	J	0.274	4.00
(S) o-Terphenyl	*57.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3790941-2 05/11/22 22:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.6	65.2	50.0-150	
(S) o-Terphenyl			*69.2*	*18.0-148*	

L1490290-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1490290-04 05/12/22 11:06 • (MS) R3791075-1 05/12/22 11:19 • (MSD) R3791075-2 05/12/22 11:32

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	47.8	4570	4350	2270	0.000	0.000	50	50.0-150	V	J3 V	62.8	20
(S) o-Terphenyl					*0.000*	*0.000*		*18.0-148*	J7	J7		

Method Blank (MB)

(MB) R3790852-1 05/12/22 02:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	0.328	J	0.274	4.00
(S) o-Terphenyl	*62.5*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3790852-2 05/12/22 02:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	35.5	71.0	50.0-150	
(S) o-Terphenyl			*81.1*	*18.0-148*	

L1488892-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1488892-01 05/12/22 07:44 • (MS) R3790852-3 05/12/22 07:57 • (MSD) R3790852-4 05/12/22 08:11

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	48.8	912	964	891	107	0.000	1	50.0-150	E	E V	7.87	20
(S) o-Terphenyl					*0.000*	*0.000*		*18.0-148*	J2	J2		

Sample Narrative:

OS: Surrogate failure due to matrix interference

Method Blank (MB)

(MB) R3791442-2 05/12/22 14:09

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	*110*			*23.0-120*
(S) Nitrobenzene-d5	*84.3*			*14.0-149*
(S) 2-Fluorobiphenyl	*85.7*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3791442-1 05/12/22 13:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0653	81.6	50.0-120	
Anthracene	0.0800	0.0654	81.8	50.0-126	
Benzo(a)anthracene	0.0800	0.0678	84.8	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0628	78.5	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0634	79.3	49.0-125	
Benzo(a)pyrene	0.0800	0.0531	66.4	42.0-120	
Chrysene	0.0800	0.0669	83.6	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0632	79.0	47.0-125	
Fluoranthene	0.0800	0.0660	82.5	49.0-129	
Fluorene	0.0800	0.0672	84.0	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0636	79.5	46.0-125	
1-Methylnaphthalene	0.0800	0.0673	84.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0644	80.5	50.0-120	
Naphthalene	0.0800	0.0653	81.6	50.0-120	
Pyrene	0.0800	0.0685	85.6	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3791442-1 05/12/22 13:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*109*	*23.0-120*	
(S) Nitrobenzene-d5			*89.0*	*14.0-149*	
(S) 2-Fluorobiphenyl			*86.1*	*34.0-125*	

L1488455-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1488455-08 05/12/22 15:38 • (MS) R3791442-3 05/12/22 15:56 • (MSD) R3791442-4 05/12/22 16:14

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0792	ND	0.0628	0.0637	79.3	82.1	1	14.0-127			1.42	27
Anthracene	0.0792	ND	0.0608	0.0623	76.8	80.3	1	10.0-145			2.44	30
Benzo(a)anthracene	0.0792	ND	0.0633	0.0647	79.9	83.4	1	10.0-139			2.19	30
Benzo(b)fluoranthene	0.0792	ND	0.0613	0.0617	77.4	79.5	1	10.0-140			0.650	36
Benzo(k)fluoranthene	0.0792	ND	0.0602	0.0610	76.0	78.6	1	10.0-137			1.32	31
Benzo(a)pyrene	0.0792	ND	0.0602	0.0610	76.0	78.6	1	10.0-141			1.32	31
Chrysene	0.0792	ND	0.0643	0.0655	81.2	84.4	1	10.0-145			1.85	30
Dibenz(a,h)anthracene	0.0792	ND	0.0613	0.0623	77.4	80.3	1	10.0-132			1.62	31
Fluoranthene	0.0792	ND	0.0621	0.0633	78.4	81.6	1	10.0-153			1.91	33
Fluorene	0.0792	ND	0.0641	0.0651	80.9	83.9	1	11.0-130			1.55	29
Indeno(1,2,3-cd)pyrene	0.0792	ND	0.0615	0.0629	77.7	81.1	1	10.0-137			2.25	32
1-Methylnaphthalene	0.0792	ND	0.0642	0.0652	81.1	84.0	1	10.0-142			1.55	28
2-Methylnaphthalene	0.0792	ND	0.0618	0.0626	78.0	80.7	1	10.0-137			1.29	28
Naphthalene	0.0792	ND	0.0631	0.0649	79.7	83.6	1	10.0-135			2.81	27
Pyrene	0.0792	ND	0.0673	0.0710	85.0	91.5	1	10.0-148			5.35	35
(S) p-Terphenyl-d14					*107*	*111*		*23.0-120*				
(S) Nitrobenzene-d5					*77.2*	*89.4*		*14.0-149*				
(S) 2-Fluorobiphenyl					*81.0*	*89.9*		*34.0-125*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: L1488915

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Caerus Oil and Gas LLC	Billing Information: Info on file
Address: Info on file	
Report To: Jake Janicek, Brett Middleton, Blair Rollins	Email To: info on file
Copy To: Chris McKisson, remediation@confluence-cc.com	Site Collection Info/Address:
Customer Project Name/Number: J14 496 Drilling Mud	State: CO / County/City: Garfield / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET
Phone: / Email:	Site/Facility ID #: J14 496 / Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Alex Slorby	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature):	Turnaround Date Required: Standard 5-day / Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day / Field Filtered (if applicable): [ ] Yes [ ] No / Analysis: _____

Container Preservative Type **: Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	Table 915-1 VOCs	TPH (ORO, GRO, DRO)	Table 915-1 Metal's	Table 915-1 PAHs	pH, EC, SAR, Arsenic	Boron (Hot Water Soluble Soil)
20220429-J14_496-SS_SE@0.5'	SL	G	4/29/2022	1315				2	G	X	X	X	X	X	X
20220429-J14_496-SS_NE@0.5'	SL	G	4/29/2022	1325				2	G	X	X	X	X	X	X
20220429-J14_496-SS_NW@0.5'	SL	G	4/29/2022	1330				2	G	X	X	X	X	X	X
20220429-J14_496-SS_SW@0.5'	SL	G	4/29/2022	1335				2	G	X	X	X	X	X	X

Lab Profile/Line:

Lab Sample Receipt Checklist:
Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
Bottles Intact Y N NA
Correct Bottles Y N NA
Sufficient Volume Y N NA
Samples Received on Ice Y N NA
VOA - Headspace Acceptable Y N NA
USDA Regulated Soils Y N NA
Samples in Holding Time Y N NA
Residual Chlorine Present Y N NA
Cl Strips: _____
Sample pH Acceptable Y N NA
pH Strips: _____
Sulfide Present Y N NA
Lead Acetate Strips: _____

LAB USE ONLY:
Lab Sample # / Comments:
MMN2
1.0 to = 1.0
-12
-13
-14
-15

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 5755 8085 0032

Samples received via: (FEDEX) UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: __oC
Cooler 1 Therm Corr. Factor: __oC
Cooler 1 Corrected Temp: _____oC
Comments:

Relinquished by/Company: (Signature) Alex Slorby	Date/Time: 5/2/2022 1200	Received by/Company: (Signature)
Relinquished by/Company: (Signature)	Date/Time: 5/2 1130	Received by/Company: (Signature)
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)

Date/Time: 5/2 1045

Date/Time:

Date/Time: 5/3/22 0930

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y (N) NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____