December 15, 2022

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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 Rio Blanco 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 Colorado Oil and Gas Conservation Commission (COGCC) Form 19 Document 402586515, and Spill ID 479279 was assigned to the release. Due health and safety concerns associated with the active drill rig, remediation investigation activities could not take place immediately. COGCC Form 27 Document 42658889 was later submitted to open Remediation Project Number 19518.

Initial site investigation was performed on April 29, 2022. Using a hand auger, four soil samples were collected from 6 inches below ground surface (bgs) within the spill footprint. Soil samples were characterized using visual and olfactory observations and field screened for volatile organic compounds using a photoionization detector (PID). The samples were submitted for analysis of COGCC Table 915-1 soil constituents. Analytical results identified levels of total petroleum hydrocarbons (TPH), sodium adsorption ratio (SAR), pH, boron, arsenic, and barium exceeding COGCC Table 915-1 Residential Soil Screening Levels.

Methodology

On September 29, 2022, Confluence returned to the Location to continue release investigation. Using a hydrovacuum truck, five potholes were advanced to the north, south, east, and west of release area to delineate soil impacts horizontally. One pothole was also advanced at the center of the impacted area to delineate soil impacts vertically. Where possible, two samples were collected from each pothole: one at 6 inches to 1 foot bgs, and one from the terminus of each pothole. Soil samples were characterized using visual and olfactory observations and field screened for volatile organic compounds using a PID.

All collected samples were placed in laboratory provided containers, immediately placed on ice, and shipped for laboratory analysis of COGCC Table 915-1 soil constituents under chain of custody. The release area and sample locations are illustrated in the attached Site Diagram.

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 into the White River, located 21.5 miles north of the Location.

Delineation Results

Field screening did not indicate impacts to soil with PID measurements ranging from 0.1 to 0.8 parts per million (ppm). No hydrocarbon odor or staining were noted. Analytical results of pothole delineation soil samples are compliant with COGCC Table 915-1 Residential Soil Screening Levels except for pH, arsenic, and hexavalent chromium. Exceedances of pH range from 8.36 in PH01 to 9.21 in PH02. Arsenic exceedances range from 2.33 milligrams per kilogram (mg/kg) in PH04 to 5.64 mg/kg in PH01. Hexavalent chromium exceedances range from 0.352 mg/kg in PH03 to 0.543 mg/kg in PH01.

Analysis and Recommendations

Based on these results and analyses, TPH, SAR, pH, boron, arsenic, barium, and hexavalent chromium values exceeding COGCC Table 915-1 Residential Soil Screening Levels remain within the release area. Background data collected from nearby, native, non-impacted soil at the Location indicates levels of pH and arsenic elevated above COGCC Table 915-1 Residential Soil Screening Levels. Analytical data indicates peak native pH of 8.81 and peak native arsenic of 5.84 mg/kg. Based on these results, Confluence recommends that Caerus request consideration of COGCC Table 915-1 Footnote 1 to establish an alternative allowable limit for pH of 8.81 and consideration of Footnote 11 to establish an alternative allowable limit for arsenic of 7.30 mg/kg. Additionally, all hexavalent chromium exceedances are labeled with a “J” qualifier. The “J” qualifier states that the

identification of the analyte was made; however, the concentration is only an estimate due to the minimal amount of the analyte exhibited in the sample material. For this reason, Confluence recommends that Caerus request consideration of the "J" qualifier for hexavalent chromium concentrations to remove the constituent from consideration as an exceedance.

Assuming the proposed alternative allowable limits and analytical considerations are accepted, all constituents of concern are delineated with the exception of pH. Exceedances of pH are undelineated vertically and to the north of PH02. Confluence recommends that impacted soil be excavated and added to the cuttings stockpile associated with COGCC Remediation Project Number 24636 for remediation. The release area identified as fully delineated, with the exception of pH, extends approximately 100 feet long by 80 feet wide to a depth of approximately 2 feet bgs. Once impacted material is removed, additional characterization samples should be collected to ensure no impacts above COGCC Table 915-1 Residential Soil Screening Levels remain. Based on the results of site investigation to date, Confluence recommends that Caerus request a reduced analyte list of TPH, SAR, pH, 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,

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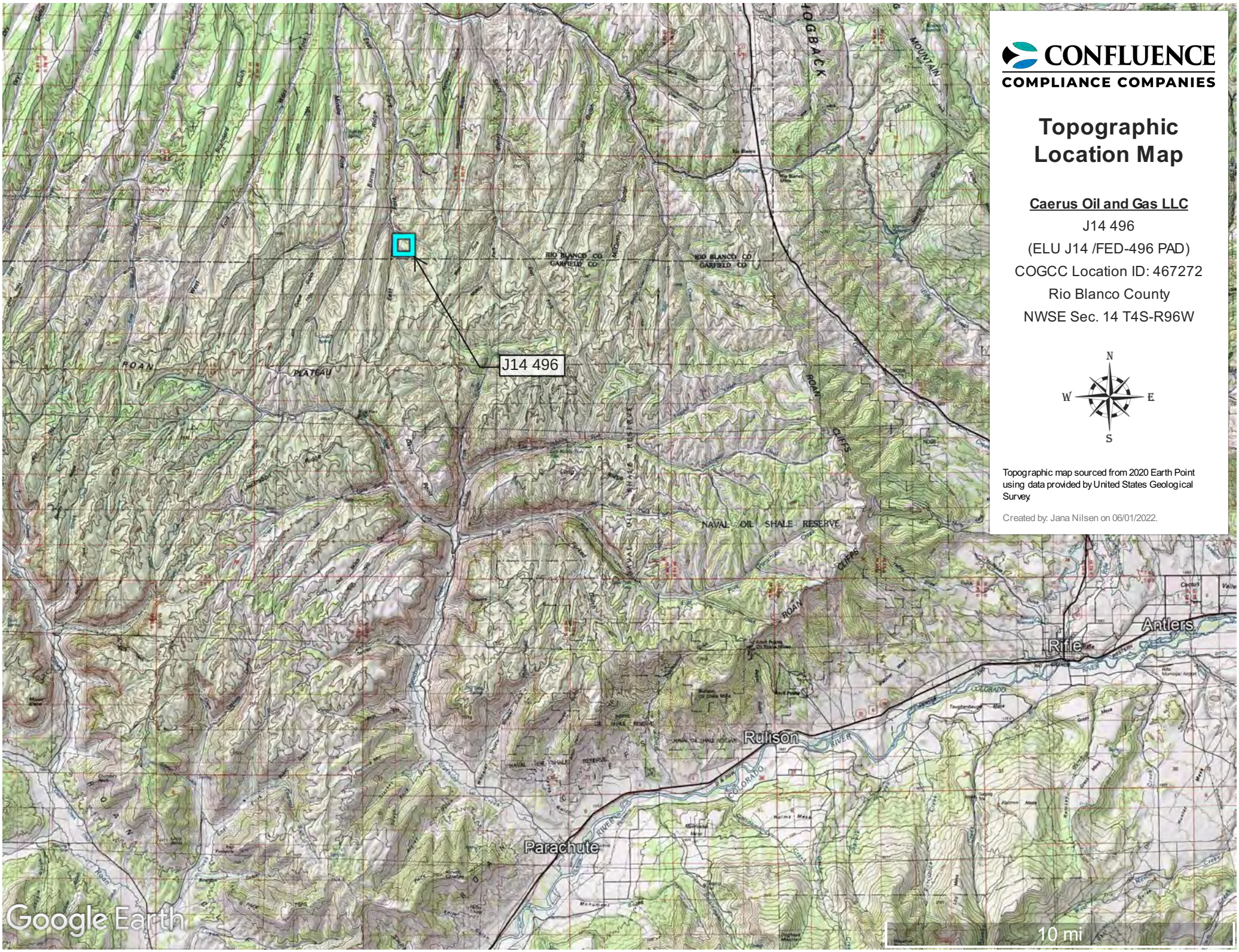
Attachments

- Topographic Location Map
- Site Diagram – Delineation
- 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.

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Site Diagram Delineation

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
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Legend

- Soil Sample – 04/29/2022
- Soil Sample – 09/29/2022
- Drill Mud Release Extent

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: Andrew Smith on 10/04/2022.

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Laboratory Results Summary Table - Soil
J14 296 Drilling Mud Release

12/15/2022

		Soil Screening and Remediation Limits			Organic Compounds (mg/kg [ppm])																									
			COGCC Table 915-1 Residential -->	NA	500	NA	NA	NA	1.2	490	5.8	58	30	27	360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	18	24	2	180
Sample Date	Solid/Soil Source (Equipment) [Vault/Sump, Separator, Tank Battery, Dump Line, Pit, Cuttings, Background, etc.]	Depth - Z (feet) (NEGATIVE VALUE) below ground surface (bgs)	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	DIbenz(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3,C,D)pyrene	1- Methylnaphthalene	2- Methylnaphthalene	Naphthalene	Pyrene
9/29/2022	Tank	-1	202209-J14_496-PH01@6"-12"	0.8	35.5	<1.00	7.11	28.4	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.0200	<0.0200	<0.0200	<0.00600
9/29/2022	Tank	-2	202209-J14_496-PH01@24"	0.1	9.28	<1.00	2.20	7.08	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.0200	<0.0200	<0.0200	<0.00600
9/29/2022	Tank	-1	202209-J14_496-PH02@6"-12"	0.3	143	0.0615	41.5	101	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.0131	0.0464	0.00991	<0.00600
9/29/2022	Tank	-3	202209-J14_496-PH02@36"	0.6	81.2	0.0587	22.8	58.3	<0.00100	<0.00500	<0.00250	0.00107	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00505	0.0114	<0.0200	<0.00600
9/29/2022	Tank	-1	202209-J14_496-PH03@6"-12"	0.3	36.3	0.0405	11.5	24.8	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00841	<0.0200	<0.00600
9/29/2022	Tank	-1.3	202209-J14_496-PH03@28"	0.1	42.6	0.0334	13.3	29.3	<0.00100	<0.00500	<0.00250	0.00130	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00458	0.00738	<0.0200	<0.00600
9/29/2022	Tank	-1	202209-J14_496-PH04@6"-12"	0.3	7.81	0.0273	1.92	5.86	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.0200	<0.0200	<0.0200	<0.00600
9/29/2022	Tank	-2	202209-J14_496-PH04@24"	NA	1.84	0.0260	<4.00	1.81	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.0200	<0.0200	<0.0200	<0.00600
9/29/2022	Tank	-1	202209-J14_496-PH05@6"-12"	0.3	3.69	0.0246	<4.00	3.67	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.0200	<0.0200	<0.0200	<0.00600
9/29/2022	Tank	-1	202209-J14_496-PH06@6"-12"	0.4	26.3	0.0790	9.27	17.0	0.00153	0.00448	0.00181	0.00619	0.00168	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.0123	0.0236	0.0139	<0.00600
9/29/2022	Tank	-3	202209-J14_496-PH06@36"	0.8	2.79	<0.100	<4.00	2.79	<0.00100	<0.00500	<0.00250	<0.00650	<0.00500	<0.00500	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.0200	<0.0200	<0.0200	<0.00600
4/29/2022	Tank	-0.5	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
4/29/2022	Tank	-0.5	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
4/29/2022	Tank	-0.5	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
4/29/2022	Tank	-0.5	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
6/20/2022	Background	-12	20220620-J14_496BGE(1455)@10'-12'	NA	ND	<0.100	<4.00	<4.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/20/2022	Background	-20	20220620-J14_496BGE(1510)@20'	NA	ND	<0.100	<4.00	<4.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/20/2022	Background	-40	20220620-J14_496BGE(1640)@40'	NA	14.7	<0.100	<4.00	14.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/20/2022	Background	-30	20220620-J14_496-BGE(1520)@30'	NA	5.75	<0.100	<4.00	5.75	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/19/2020	Background	NA	2020119-J14-496 (BG01)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/19/2020	Background	NA	2020119-J14-496 (BG02)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/19/2020	Background	NA	2020119-J14-496 (BG03)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11/19/2020	Background	NA	2020119-J14-496 (BG04)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

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Laboratory Results Summary Table - Soil
J14 496 Drilling Mud Release

12/15/2022

		Soil Screening and Remediation Limits			Soil Suitability for Reclamation				Metals (mg/kg [ppm])									
			COGCC Table 915-1 Residential -->	NA	4	6	6-8.3	2	0.68	15000	71	0.3	3100	400	1500	390	390	23000
Sample Date	Solid/Soil Source (Equipment) [Vault/Sump, Separator, Tank Battery, Dump Line, Pit, Cuttings, Background, etc.]	Depth - Z (feet) (NEGATIVE VALUE) below ground surface (bgs)	Sample ID	PID (ppm)	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 (VI)	Copper	Lead	Nickel	Selenium	Silver	Zinc
9/29/2022	Tank	-1	202209-J14_496-PH01@6"-12"	0.8	0.343	2.08	8.48	0.173	5.64	757	0.0635	0.457	16.1	11.3	26.4	<2.00	<1.00	51.7
9/29/2022	Tank	-2	202209-J14_496-PH01@24"	0.1	0.250	0.572	8.36	0.391	3.10	502	0.416	0.543	25.2	14.7	27.8	<2.00	<1.00	61.3
9/29/2022	Tank	-1	202209-J14_496-PH02@6"-12"	0.3	0.198	5.74	9.05	0.565	3.93	3240	<0.500	0.386	16.6	8.23	15.3	<2.00	<1.00	41.3
9/29/2022	Tank	-3	202209-J14_496-PH02@36"	0.6	0.216	4.40	9.21	0.313	4.60	2510	<0.500	<1.00	17.2	10.5	10.9	<2.00	<1.00	30.9
9/29/2022	Tank	-1	202209-J14_496-PH03@6"-12"	0.3	0.534	3.83	8.81	0.733	5.31	1980	<0.500	0.414	14.6	9.56	22.9	<2.00	<1.00	47.2
9/29/2022	Tank	-1.3	202209-J14_496-PH03@28"	0.1	0.541	5.30	8.81	0.888	3.66	2090	<0.500	0.352	18.2	11.3	35.4	<2.00	<1.00	51.8
9/29/2022	Tank	-1	202209-J14_496-PH04@6"-12"	0.3	0.213	2.13	8.68	0.114	3.63	584	<0.500	<1.00	11.4	6.96	16.8	<2.00	<1.00	31.9
9/29/2022	Tank	-2	202209-J14_496-PH04@24"	NA	0.199	1.34	8.63	0.0868	2.33	490	<0.500	<1.00	9.44	6.18	12.5	<2.00	<1.00	28.3
9/29/2022	Tank	-1	202209-J14_496-PH05@6"-12"	0.3	0.296	2.13	8.47	0.283	3.91	329	<0.500	0.461	14.7	9.83	19.5	<2.00	<1.00	50.7
9/29/2022	Tank	-1	202209-J14_496-PH06@6"-12"	0.4	0.432	2.44	8.79	1.95	2.90	2140	<0.500	0.361	11.1	6.60	12.0	<2.00	<1.00	31.1
9/29/2022	Tank	-3	202209-J14_496-PH06@36"	0.8	0.181	1.38	8.57	0.293	4.71	200	<0.500	0.530	19.4	10.1	19.4	<2.00	<1.00	59.0
4/29/2022	Tank	-0.5	20220429-J14_496-SS_SW@0.5'	2.9	2.380	13.5	8.57	6.690	9.54	14400	<0.500	<1.00	29.7	13.7	20.1	<2.00	<1.00	55.9
4/29/2022	Tank	-0.5	20220429-J14_496-SS_NW@0.5'	5.1	2.790	10.7	8.54	10.7	7.45	15300	<0.500	<1.00	32.8	15.4	22.3	<2.00	<1.00	64.3
4/29/2022	Tank	-0.5	20220429-J14_496-SS_NE@0.5'	6	3.940	11.7	8.46	7.03	6.26	15200	<5.00	<1.00	28.9	14.3	18.4	<2.00	<1.00	54.5
4/29/2022	Tank	-0.5	20220429-J14_496-SS_SE@0.5'	4.9	1.550	15.6	8.90	5.09	5.17	15500	<5.00	<1.00	24.7	11.3	16.0	<2.00	<1.00	49.2
6/20/2022	Background	-12	20220620-J14_496BGE(1455)@10'-12'	NA	0.262	1.38	8.35	<0.200	3.66	296	<0.500	<1.00	18.8	11.7	20.2	<2.00	<1.00	54.7
6/20/2022	Background	-20	20220620-J14_496BGE(1510)@20'	NA	0.216	1.16	8.43	<0.200	5.84	164	<0.500	<1.00	10.1	7.24	25.2	<2.00	<1.00	37.3
6/20/2022	Background	-40	20220620-J14_496BGE(1640)@40'	NA	0.279	0.441	8.34	<0.200	3.23	513	<0.500	<1.00	13.3	8.29	16.2	<2.00	<1.00	42.2
6/20/2022	Background	-30	20220620-J14_496-BGE(1520)@30'	NA	0.300	0.0738	8.66	<0.200	2.67	381	<0.500	<1.00	15.4	9.44	16.5	<2.00	<1.00	40.7
11/19/2020	Background	NA	2020119-J14-496 (BG01)	NA	0.110	0.639	8.74	NA	3.31	NA	NA	<2.00	NA	NA	NA	NA	NA	NA
11/19/2020	Background	NA	2020119-J14-496 (BG02)	NA	0.268	2.36	8.81	NA	2.41	NA	NA	<2.00	NA	NA	NA	NA	NA	NA
11/19/2020	Background	NA	2020119-J14-496 (BG03)	NA	0.289	1.84	8.59	NA	3.62	NA	NA	<2.00	NA	NA	NA	NA	NA	NA
11/19/2020	Background	NA	2020119-J14-496 (BG04)	NA	0.500	2.63	8.49	NA	3.45	NA	NA	<2.00	NA	NA	NA	NA	NA	NA

Confluence Compliance Companies, LLC
info@confluence-cc.com

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

ANALYTICAL REPORT

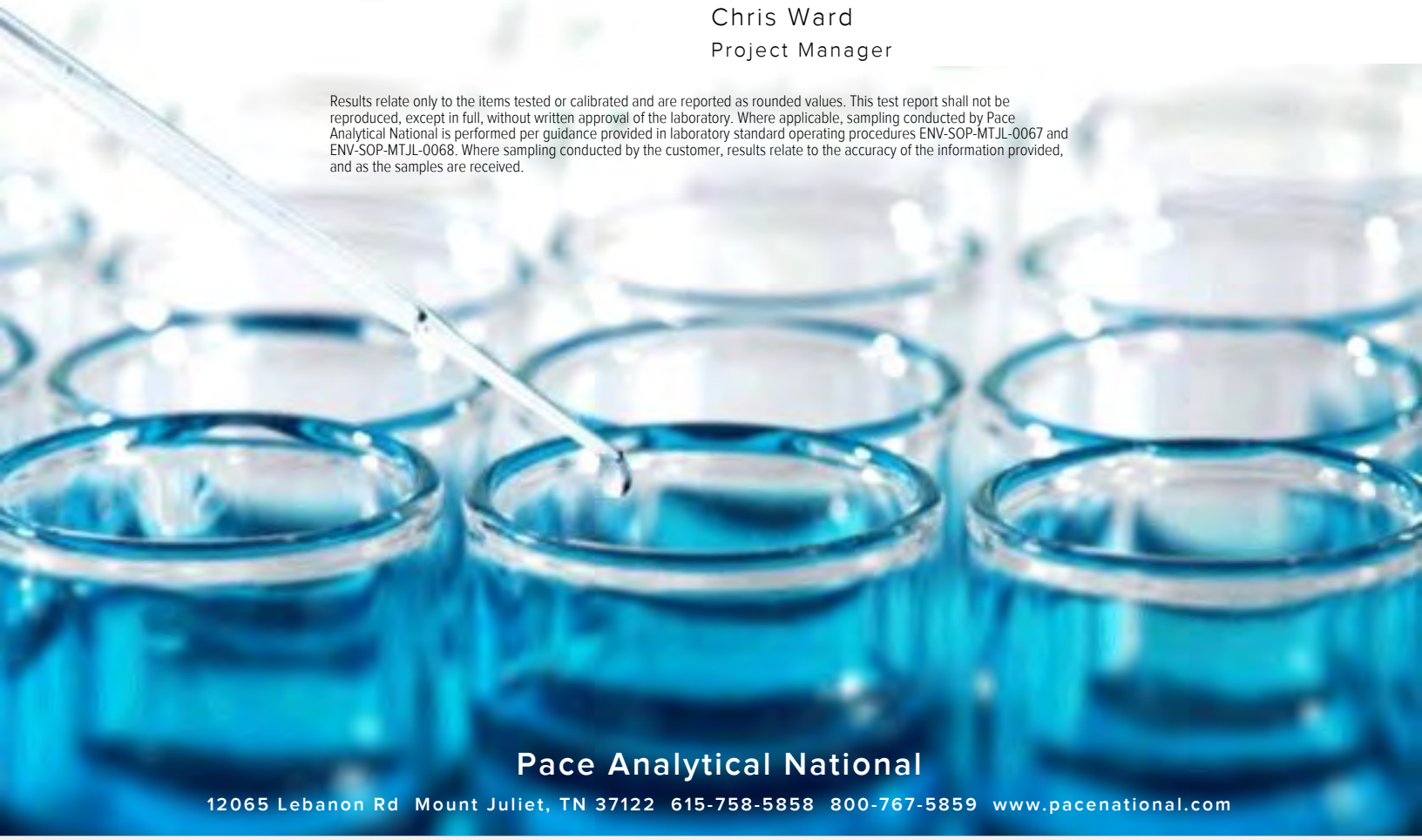
October 26, 2022

Caerus Oil and Gas

Sample Delivery Group:	L1542584
Samples Received:	10/04/2022
Project Number:	
Description:	J14 496 Drill Mud Release
Site:	J14 496
Report To:	Brett Middleton 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



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

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20220929-J14-496-PH01 @ 6"-12" L1542584-01 Solid

Collected by: Andrew Smith | Collected date/time: 09/29/22 09:00 | Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1944117	1	10/24/22 08:00	10/24/22 08:00	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1939411	1	10/08/22 22:00	10/11/22 22:51	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1938326	1	10/07/22 12:00	10/07/22 14:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1937494	1	10/05/22 09:10	10/07/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/21/22 02:31	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1939698	1	10/09/22 11:06	10/10/22 21:21	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1938402	5	10/19/22 10:52	10/21/22 17:04	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1937362	1	10/04/22 21:02	10/06/22 00:18	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1939282	1	10/04/22 21:02	10/08/22 01:21	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1939749	1	10/10/22 10:25	10/10/22 18:53	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1939942	1	10/10/22 04:32	10/10/22 11:54	AMG	Mt. Juliet, TN

20220929-J14-496-PH01 @ 24" L1542584-02 Solid

Collected by: Andrew Smith | Collected date/time: 09/29/22 09:10 | Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1944117	1	10/24/22 08:03	10/24/22 08:03	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1939411	1	10/08/22 22:00	10/11/22 22:56	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1938326	1	10/07/22 12:00	10/07/22 14:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1937494	1	10/05/22 09:10	10/07/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/21/22 02:40	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/23/22 20:37	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1939698	1	10/09/22 11:06	10/10/22 21:24	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1938402	5	10/19/22 10:52	10/21/22 17:14	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1937362	1	10/04/22 21:02	10/06/22 00:41	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1939282	1	10/04/22 21:02	10/08/22 01:40	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1939749	1	10/10/22 10:25	10/10/22 17:22	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1939942	1	10/10/22 04:32	10/10/22 12:12	AMG	Mt. Juliet, TN

20220929-J14-496-PH02 @ 6"-12" L1542584-03 Solid

Collected by: Andrew Smith | Collected date/time: 09/29/22 09:20 | Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1944117	1	10/24/22 08:06	10/24/22 08:06	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1939411	1	10/08/22 22:00	10/11/22 23:01	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1938326	1	10/07/22 12:00	10/07/22 14:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1940643	1	10/11/22 09:40	10/11/22 15:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/21/22 02:42	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/23/22 20:40	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1939698	1	10/09/22 11:06	10/10/22 21:26	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1938402	5	10/19/22 10:52	10/21/22 17:17	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1937362	1	10/04/22 21:02	10/06/22 01:04	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1939282	1	10/04/22 21:02	10/08/22 01:59	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1939749	1	10/10/22 10:25	10/10/22 19:06	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1939942	1	10/10/22 04:32	10/10/22 17:49	AMG	Mt. Juliet, TN

20220929-J14-496-PH02 @ 36" L1542584-04 Solid

Collected by: Andrew Smith | Collected date/time: 09/29/22 09:30 | Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1944117	1	10/24/22 08:09	10/24/22 08:09	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1939411	1	10/08/22 22:00	10/11/22 23:06	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1938326	1	10/07/22 12:00	10/07/22 14:00	SGB	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

20220929-J14-496-PH02 @ 36" L1542584-04 Solid

Collected by: Andrew Smith | Collected date/time: 09/29/22 09:30 | Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9050AMod	WG1937494	1	10/05/22 09:10	10/07/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/21/22 02:45	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/23/22 20:43	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1946938	1	10/22/22 11:19	10/26/22 05:17	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1938402	5	10/19/22 10:52	10/21/22 17:20	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1937362	1	10/04/22 21:02	10/06/22 01:27	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1939282	1	10/04/22 21:02	10/08/22 02:18	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1939749	1	10/10/22 10:25	10/10/22 19:19	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1939942	1	10/10/22 04:32	10/10/22 13:05	AMG	Mt. Juliet, TN

20220929-J14-496-PH03 @ 6"-12" L1542584-05 Solid

Collected by: Andrew Smith | Collected date/time: 09/29/22 09:40 | Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1944117	1	10/24/22 08:12	10/24/22 08:12	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1939411	1	10/08/22 22:00	10/11/22 23:12	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1938326	1	10/07/22 12:00	10/07/22 14:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1937494	1	10/05/22 09:10	10/07/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/21/22 02:48	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/23/22 20:57	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1939698	1	10/09/22 11:06	10/10/22 21:29	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1938402	5	10/19/22 10:52	10/21/22 17:23	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1937362	1	10/04/22 21:02	10/06/22 01:50	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1939282	1	10/04/22 21:02	10/08/22 02:37	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1939751	1	10/10/22 09:21	10/10/22 23:18	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1939942	1	10/10/22 04:32	10/10/22 12:30	AMG	Mt. Juliet, TN

20220929-J14-496-PH03 @ 28" L1542584-06 Solid

Collected by: Andrew Smith | Collected date/time: 09/29/22 09:50 | Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1944117	1	10/24/22 08:14	10/24/22 08:14	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1939411	1	10/08/22 22:00	10/11/22 23:17	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1938326	1	10/07/22 12:00	10/07/22 14:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1937494	1	10/05/22 09:10	10/07/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/21/22 02:51	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/23/22 21:00	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1946938	1	10/22/22 11:19	10/26/22 05:20	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1938402	5	10/19/22 10:52	10/21/22 17:27	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1937362	1	10/04/22 21:02	10/06/22 02:13	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1939282	1	10/04/22 21:02	10/08/22 02:56	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1939751	1	10/10/22 09:21	10/10/22 23:31	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1939942	1	10/10/22 04:32	10/10/22 12:47	AMG	Mt. Juliet, TN

20220929-J14-496-PH04 @ 6"-12" L1542584-07 Solid

Collected by: Andrew Smith | Collected date/time: 09/29/22 10:05 | Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1944117	1	10/24/22 08:17	10/24/22 08:17	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1939411	1	10/08/22 22:00	10/11/22 23:40	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1938326	1	10/07/22 12:00	10/07/22 14:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1937494	1	10/05/22 09:10	10/07/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/21/22 01:35	ZSA	Mt. Juliet, TN

20220929-J14-496-PH04 @ 6"-12" L1542584-07 Solid

Collected by: Andrew Smith | Collected date/time: 09/29/22 10:05 | Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1939698	1	10/09/22 11:06	10/10/22 21:32	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1938402	5	10/19/22 10:52	10/21/22 16:01	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1937362	1	10/04/22 21:02	10/06/22 02:36	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1939282	1	10/04/22 21:02	10/08/22 03:15	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1939751	1	10/10/22 09:21	10/10/22 23:44	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1939942	1	10/10/22 04:32	10/10/22 13:23	AMG	Mt. Juliet, TN

20220929-J14-496-PH04 @ 24" L1542584-08 Solid

Collected by: Andrew Smith | Collected date/time: 09/29/22 10:15 | Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1944117	1	10/24/22 08:26	10/24/22 08:26	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1939411	1	10/08/22 22:00	10/11/22 23:48	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1938326	1	10/07/22 12:00	10/07/22 14:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1937494	1	10/05/22 09:10	10/07/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/21/22 02:54	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938390	1	10/19/22 10:51	10/23/22 21:03	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1946938	1	10/22/22 11:19	10/26/22 05:23	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1938402	5	10/19/22 10:52	10/21/22 17:30	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1937362	1	10/04/22 21:02	10/06/22 02:59	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1939282	1	10/04/22 21:02	10/08/22 03:34	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1939751	1	10/10/22 09:21	10/10/22 23:58	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1939942	1	10/10/22 04:32	10/10/22 13:41	AMG	Mt. Juliet, TN

20220929-J14-496-PH05 @ 6"-12" L1542584-09 Solid

Collected by: Andrew Smith | Collected date/time: 09/29/22 10:30 | Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1944117	1	10/24/22 08:29	10/24/22 08:29	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1939411	1	10/08/22 22:00	10/11/22 23:53	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1938326	1	10/07/22 12:00	10/07/22 14:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1937494	1	10/05/22 09:10	10/07/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938414	1	10/12/22 23:37	10/13/22 16:37	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1939698	1	10/09/22 11:06	10/10/22 21:35	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1938416	5	10/13/22 00:11	10/13/22 16:14	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1937362	1	10/04/22 21:02	10/06/22 03:22	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1939282	1	10/04/22 21:02	10/08/22 03:53	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1939751	1	10/10/22 09:21	10/10/22 21:31	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1939942	1	10/10/22 04:32	10/10/22 13:58	AMG	Mt. Juliet, TN

20220929-J14-496-PH06 @ 6"-12" L1542584-10 Solid

Collected by: Andrew Smith | Collected date/time: 09/29/22 10:45 | Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1944117	1	10/24/22 08:32	10/24/22 08:32	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1939411	1	10/08/22 22:00	10/11/22 23:58	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1938326	1	10/07/22 12:00	10/07/22 14:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1937494	1	10/05/22 09:10	10/07/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938414	1	10/12/22 23:37	10/13/22 16:52	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1939698	1	10/09/22 11:06	10/10/22 21:38	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1938416	5	10/13/22 00:11	10/13/22 16:34	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1937362	1	10/04/22 21:02	10/06/22 03:45	BAM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1939282	1	10/04/22 21:02	10/08/22 04:12	DWR	Mt. Juliet, TN

SAMPLE SUMMARY

20220929-J14-496-PH06 @ 6"-12" L1542584-10 Solid

Collected by: Andrew Smith
Collected date/time: 09/29/22 10:45
Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1939751	1	10/10/22 09:21	10/10/22 21:44	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1939942	1	10/10/22 04:32	10/10/22 14:16	AMG	Mt. Juliet, TN

20220929-J14-496-PH06 @ 36" L1542584-11 Solid

Collected by: Andrew Smith
Collected date/time: 09/29/22 10:55
Received date/time: 10/04/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1944117	1	10/24/22 08:35	10/24/22 08:35	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1939411	1	10/08/22 22:00	10/12/22 00:03	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1938326	1	10/07/22 12:00	10/07/22 14:00	SGB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1937494	1	10/05/22 09:10	10/07/22 09:00	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1938414	1	10/12/22 23:37	10/13/22 16:55	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1939698	1	10/09/22 11:06	10/10/22 21:46	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1938416	5	10/13/22 00:11	10/13/22 16:37	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1937191	1	10/04/22 21:02	10/05/22 11:39	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1939282	1	10/04/22 21:02	10/08/22 04:31	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1939751	1	10/10/22 09:21	10/10/22 21:58	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1939942	1	10/10/22 04:32	10/10/22 15:09	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

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.08		1	10/24/2022 08:00	WG1944117

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.457	J	0.255	1.00	1	10/11/2022 22:51	WG1939411

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.48	T8	1	10/07/2022 14:00	WG1938326

Sample Narrative:

L1542584-01 WG1938326: 8.48 at 20.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	343		10.0	1	10/07/2022 09:00	WG1937494

Sample Narrative:

L1542584-01 WG1937494: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	757		0.0852	0.500	1	10/21/2022 02:31	WG1938390
Cadmium	0.0635	J	0.0471	0.500	1	10/21/2022 02:31	WG1938390
Copper	16.1		0.400	2.00	1	10/21/2022 02:31	WG1938390
Lead	11.3		0.208	0.500	1	10/21/2022 02:31	WG1938390
Nickel	26.4		0.132	2.00	1	10/21/2022 02:31	WG1938390
Selenium	U		0.764	2.00	1	10/21/2022 02:31	WG1938390
Silver	U		0.127	1.00	1	10/21/2022 02:31	WG1938390
Zinc	51.7		0.832	5.00	1	10/21/2022 02:31	WG1938390

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.173	J	0.0167	0.200	1	10/10/2022 21:21	WG1939698

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.64		0.100	1.00	5	10/21/2022 17:04	WG1938402

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	10/06/2022 00:18	WG1937362
(S) a,a,a-Trifluorotoluene(FID)	*87.3*			*77.0-120*		*10/06/2022 00:18*	WG1937362

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/08/2022 01:21	WG1939282
Toluene	U		0.00130	0.00500	1	10/08/2022 01:21	WG1939282
Ethylbenzene	U		0.000737	0.00250	1	10/08/2022 01:21	WG1939282
Xylenes, Total	U		0.000880	0.00650	1	10/08/2022 01:21	WG1939282
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/08/2022 01:21	WG1939282
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/08/2022 01:21	WG1939282
(S) Toluene-d8	*96.6*			*75.0-131*		*10/08/2022 01:21*	WG1939282
(S) 4-Bromofluorobenzene	*102*			*67.0-138*		*10/08/2022 01:21*	WG1939282
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*10/08/2022 01:21*	WG1939282

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	7.11		1.61	4.00	1	10/10/2022 18:53	WG1939749
C28-C36 Motor Oil Range	28.4		0.274	4.00	1	10/10/2022 18:53	WG1939749
(S) o-Terphenyl	*67.2*			*18.0-148*		*10/10/2022 18:53*	WG1939749

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/10/2022 11:54	WG1939942
Anthracene	U		0.00230	0.00600	1	10/10/2022 11:54	WG1939942
Benzo(a)anthracene	U		0.00173	0.00600	1	10/10/2022 11:54	WG1939942
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/10/2022 11:54	WG1939942
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/10/2022 11:54	WG1939942
Benzo(a)pyrene	U		0.00179	0.00600	1	10/10/2022 11:54	WG1939942
Chrysene	U		0.00232	0.00600	1	10/10/2022 11:54	WG1939942
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/10/2022 11:54	WG1939942
Fluoranthene	U		0.00227	0.00600	1	10/10/2022 11:54	WG1939942
Fluorene	U		0.00205	0.00600	1	10/10/2022 11:54	WG1939942
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/10/2022 11:54	WG1939942
1-Methylnaphthalene	U		0.00449	0.0200	1	10/10/2022 11:54	WG1939942
2-Methylnaphthalene	U		0.00427	0.0200	1	10/10/2022 11:54	WG1939942
Naphthalene	U		0.00408	0.0200	1	10/10/2022 11:54	WG1939942
Pyrene	U		0.00200	0.00600	1	10/10/2022 11:54	WG1939942
(S) p-Terphenyl-d14	*70.5*			*23.0-120*		*10/10/2022 11:54*	WG1939942
(S) Nitrobenzene-d5	*83.2*			*14.0-149*		*10/10/2022 11:54*	WG1939942
(S) 2-Fluorobiphenyl	*76.6*			*34.0-125*		*10/10/2022 11:54*	WG1939942

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.572		1	10/24/2022 08:03	WG1944117

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.543	J	0.255	1.00	1	10/11/2022 22:56	WG1939411

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.36	T8	1	10/07/2022 14:00	WG1938326

Sample Narrative:

L1542584-02 WG1938326: 8.36 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	250		10.0	1	10/07/2022 09:00	WG1937494

Sample Narrative:

L1542584-02 WG1937494: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	502		0.0852	0.500	1	10/21/2022 02:40	WG1938390
Cadmium	0.416	J	0.0471	0.500	1	10/21/2022 02:40	WG1938390
Copper	25.2		0.400	2.00	1	10/21/2022 02:40	WG1938390
Lead	14.7		0.208	0.500	1	10/21/2022 02:40	WG1938390
Nickel	27.8		0.132	2.00	1	10/21/2022 02:40	WG1938390
Selenium	U		0.764	2.00	1	10/21/2022 02:40	WG1938390
Silver	U		0.127	1.00	1	10/23/2022 20:37	WG1938390
Zinc	61.3		0.832	5.00	1	10/21/2022 02:40	WG1938390

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.391		0.0167	0.200	1	10/10/2022 21:24	WG1939698

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.10		0.100	1.00	5	10/21/2022 17:14	WG1938402

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	10/06/2022 00:41	WG1937362
(S) a,a,a-Trifluorotoluene(FID)	*87.7*			*77.0-120*		*10/06/2022 00:41*	WG1937362

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/08/2022 01:40	WG1939282
Toluene	U		0.00130	0.00500	1	10/08/2022 01:40	WG1939282
Ethylbenzene	U		0.000737	0.00250	1	10/08/2022 01:40	WG1939282
Xylenes, Total	U		0.000880	0.00650	1	10/08/2022 01:40	WG1939282
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/08/2022 01:40	WG1939282
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/08/2022 01:40	WG1939282
(S) Toluene-d8	*97.8*			*75.0-131*		*10/08/2022 01:40*	WG1939282
(S) 4-Bromofluorobenzene	*108*			*67.0-138*		*10/08/2022 01:40*	WG1939282
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*		*10/08/2022 01:40*	WG1939282

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.20	J	1.61	4.00	1	10/10/2022 17:22	WG1939749
C28-C36 Motor Oil Range	7.08		0.274	4.00	1	10/10/2022 17:22	WG1939749
(S) o-Terphenyl	*54.1*			*18.0-148*		*10/10/2022 17:22*	WG1939749

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/10/2022 12:12	WG1939942
Anthracene	U		0.00230	0.00600	1	10/10/2022 12:12	WG1939942
Benzo(a)anthracene	U		0.00173	0.00600	1	10/10/2022 12:12	WG1939942
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/10/2022 12:12	WG1939942
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/10/2022 12:12	WG1939942
Benzo(a)pyrene	U		0.00179	0.00600	1	10/10/2022 12:12	WG1939942
Chrysene	U		0.00232	0.00600	1	10/10/2022 12:12	WG1939942
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/10/2022 12:12	WG1939942
Fluoranthene	U		0.00227	0.00600	1	10/10/2022 12:12	WG1939942
Fluorene	U		0.00205	0.00600	1	10/10/2022 12:12	WG1939942
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/10/2022 12:12	WG1939942
1-Methylnaphthalene	U		0.00449	0.0200	1	10/10/2022 12:12	WG1939942
2-Methylnaphthalene	U		0.00427	0.0200	1	10/10/2022 12:12	WG1939942
Naphthalene	U		0.00408	0.0200	1	10/10/2022 12:12	WG1939942
Pyrene	U		0.00200	0.00600	1	10/10/2022 12:12	WG1939942
(S) p-Terphenyl-d14	*64.4*			*23.0-120*		*10/10/2022 12:12*	WG1939942
(S) Nitrobenzene-d5	*72.1*			*14.0-149*		*10/10/2022 12:12*	WG1939942
(S) 2-Fluorobiphenyl	*66.8*			*34.0-125*		*10/10/2022 12:12*	WG1939942

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.74		1	10/24/2022 08:06	WG1944117

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.386	J	0.255	1.00	1	10/11/2022 23:01	WG1939411

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	9.05	T8	1	10/07/2022 14:00	WG1938326

Sample Narrative:

L1542584-03 WG1938326: 9.05 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	198		10.0	1	10/11/2022 15:00	WG1940643

Sample Narrative:

L1542584-03 WG1940643: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	3240		0.0852	0.500	1	10/21/2022 02:42	WG1938390
Cadmium	U		0.0471	0.500	1	10/21/2022 02:42	WG1938390
Copper	16.6		0.400	2.00	1	10/21/2022 02:42	WG1938390
Lead	8.23		0.208	0.500	1	10/21/2022 02:42	WG1938390
Nickel	15.3		0.132	2.00	1	10/21/2022 02:42	WG1938390
Selenium	U		0.764	2.00	1	10/21/2022 02:42	WG1938390
Silver	U		0.127	1.00	1	10/23/2022 20:40	WG1938390
Zinc	41.3		0.832	5.00	1	10/21/2022 02:42	WG1938390

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.565		0.0167	0.200	1	10/10/2022 21:26	WG1939698

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.93		0.100	1.00	5	10/21/2022 17:17	WG1938402

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0615	J	0.0217	0.100	1	10/06/2022 01:04	WG1937362
(S) a,a,a-Trifluorotoluene(FID)	*86.5*			*77.0-120*		*10/06/2022 01:04*	WG1937362

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/08/2022 01:59	WG1939282
Toluene	U		0.00130	0.00500	1	10/08/2022 01:59	WG1939282
Ethylbenzene	U		0.000737	0.00250	1	10/08/2022 01:59	WG1939282
Xylenes, Total	U		0.000880	0.00650	1	10/08/2022 01:59	WG1939282
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/08/2022 01:59	WG1939282
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/08/2022 01:59	WG1939282
(S) Toluene-d8	*94.8*			*75.0-131*		*10/08/2022 01:59*	WG1939282
(S) 4-Bromofluorobenzene	*110*			*67.0-138*		*10/08/2022 01:59*	WG1939282
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*10/08/2022 01:59*	WG1939282

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	41.5		1.61	4.00	1	10/10/2022 19:06	WG1939749
C28-C36 Motor Oil Range	101		0.274	4.00	1	10/10/2022 19:06	WG1939749
(S) o-Terphenyl	*68.6*			*18.0-148*		*10/10/2022 19:06*	WG1939749

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/10/2022 17:49	WG1939942
Anthracene	U		0.00230	0.00600	1	10/10/2022 17:49	WG1939942
Benzo(a)anthracene	U		0.00173	0.00600	1	10/10/2022 17:49	WG1939942
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/10/2022 17:49	WG1939942
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/10/2022 17:49	WG1939942
Benzo(a)pyrene	U		0.00179	0.00600	1	10/10/2022 17:49	WG1939942
Chrysene	U		0.00232	0.00600	1	10/10/2022 17:49	WG1939942
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/10/2022 17:49	WG1939942
Fluoranthene	U		0.00227	0.00600	1	10/10/2022 17:49	WG1939942
Fluorene	U		0.00205	0.00600	1	10/10/2022 17:49	WG1939942
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/10/2022 17:49	WG1939942
1-Methylnaphthalene	0.0131	J	0.00449	0.0200	1	10/10/2022 17:49	WG1939942
2-Methylnaphthalene	0.0464		0.00427	0.0200	1	10/10/2022 17:49	WG1939942
Naphthalene	0.00991	J	0.00408	0.0200	1	10/10/2022 17:49	WG1939942
Pyrene	U		0.00200	0.00600	1	10/10/2022 17:49	WG1939942
(S) p-Terphenyl-d14	*86.0*			*23.0-120*		*10/10/2022 17:49*	WG1939942
(S) Nitrobenzene-d5	*104*			*14.0-149*		*10/10/2022 17:49*	WG1939942
(S) 2-Fluorobiphenyl	*88.6*			*34.0-125*		*10/10/2022 17:49*	WG1939942

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.40		1	10/24/2022 08:09	WG1944117

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/11/2022 23:06	WG1939411

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	9.21	T8	1	10/07/2022 14:00	WG1938326

Sample Narrative:

L1542584-04 WG1938326: 9.21 at 20.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	216		10.0	1	10/07/2022 09:00	WG1937494

Sample Narrative:

L1542584-04 WG1937494: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2510		0.0852	0.500	1	10/21/2022 02:45	WG1938390
Cadmium	U		0.0471	0.500	1	10/21/2022 02:45	WG1938390
Copper	17.2		0.400	2.00	1	10/21/2022 02:45	WG1938390
Lead	10.5		0.208	0.500	1	10/21/2022 02:45	WG1938390
Nickel	10.9		0.132	2.00	1	10/21/2022 02:45	WG1938390
Selenium	U		0.764	2.00	1	10/21/2022 02:45	WG1938390
Silver	U		0.127	1.00	1	10/23/2022 20:43	WG1938390
Zinc	30.9		0.832	5.00	1	10/21/2022 02:45	WG1938390

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.313		0.0167	0.200	1	10/26/2022 05:17	WG1946938

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.60		0.100	1.00	5	10/21/2022 17:20	WG1938402

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0587	J	0.0217	0.100	1	10/06/2022 01:27	WG1937362
(S) a,a,a-Trifluorotoluene(FID)	*85.8*			*77.0-120*		*10/06/2022 01:27*	WG1937362

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/08/2022 02:18	WG1939282
Toluene	U		0.00130	0.00500	1	10/08/2022 02:18	WG1939282
Ethylbenzene	U		0.000737	0.00250	1	10/08/2022 02:18	WG1939282
Xylenes, Total	0.00107	J	0.000880	0.00650	1	10/08/2022 02:18	WG1939282
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/08/2022 02:18	WG1939282
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/08/2022 02:18	WG1939282
(S) Toluene-d8	*97.7*			*75.0-131*		*10/08/2022 02:18*	WG1939282
(S) 4-Bromofluorobenzene	*98.0*			*67.0-138*		*10/08/2022 02:18*	WG1939282
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*10/08/2022 02:18*	WG1939282

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	22.8		1.61	4.00	1	10/10/2022 19:19	WG1939749
C28-C36 Motor Oil Range	58.3		0.274	4.00	1	10/10/2022 19:19	WG1939749
(S) o-Terphenyl	*63.2*			*18.0-148*		*10/10/2022 19:19*	WG1939749

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/10/2022 13:05	WG1939942
Anthracene	U		0.00230	0.00600	1	10/10/2022 13:05	WG1939942
Benzo(a)anthracene	U		0.00173	0.00600	1	10/10/2022 13:05	WG1939942
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/10/2022 13:05	WG1939942
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/10/2022 13:05	WG1939942
Benzo(a)pyrene	U		0.00179	0.00600	1	10/10/2022 13:05	WG1939942
Chrysene	U		0.00232	0.00600	1	10/10/2022 13:05	WG1939942
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/10/2022 13:05	WG1939942
Fluoranthene	U		0.00227	0.00600	1	10/10/2022 13:05	WG1939942
Fluorene	U		0.00205	0.00600	1	10/10/2022 13:05	WG1939942
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/10/2022 13:05	WG1939942
1-Methylnaphthalene	0.00505	J	0.00449	0.0200	1	10/10/2022 13:05	WG1939942
2-Methylnaphthalene	0.0114	J	0.00427	0.0200	1	10/10/2022 13:05	WG1939942
Naphthalene	U		0.00408	0.0200	1	10/10/2022 13:05	WG1939942
Pyrene	U		0.00200	0.00600	1	10/10/2022 13:05	WG1939942
(S) p-Terphenyl-d14	*74.8*			*23.0-120*		*10/10/2022 13:05*	WG1939942
(S) Nitrobenzene-d5	*81.8*			*14.0-149*		*10/10/2022 13:05*	WG1939942
(S) 2-Fluorobiphenyl	*79.1*			*34.0-125*		*10/10/2022 13:05*	WG1939942

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.83		1	10/24/2022 08:12	WG1944117

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.414	J	0.255	1.00	1	10/11/2022 23:12	WG1939411

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.81	T8	1	10/07/2022 14:00	WG1938326

Sample Narrative:

L1542584-05 WG1938326: 8.81 at 20.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	534		10.0	1	10/07/2022 09:00	WG1937494

Sample Narrative:

L1542584-05 WG1937494: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	1980		0.0852	0.500	1	10/21/2022 02:48	WG1938390
Cadmium	U		0.0471	0.500	1	10/21/2022 02:48	WG1938390
Copper	14.6		0.400	2.00	1	10/21/2022 02:48	WG1938390
Lead	9.56		0.208	0.500	1	10/21/2022 02:48	WG1938390
Nickel	22.9		0.132	2.00	1	10/21/2022 02:48	WG1938390
Selenium	U		0.764	2.00	1	10/21/2022 02:48	WG1938390
Silver	U		0.127	1.00	1	10/23/2022 20:57	WG1938390
Zinc	47.2		0.832	5.00	1	10/21/2022 02:48	WG1938390

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.733		0.0167	0.200	1	10/10/2022 21:29	WG1939698

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.31		0.100	1.00	5	10/21/2022 17:23	WG1938402

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0405	J	0.0217	0.100	1	10/06/2022 01:50	WG1937362
(S) a,a,a-Trifluorotoluene(FID)	*86.8*			*77.0-120*		*10/06/2022 01:50*	WG1937362

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/08/2022 02:37	WG1939282
Toluene	U		0.00130	0.00500	1	10/08/2022 02:37	WG1939282
Ethylbenzene	U		0.000737	0.00250	1	10/08/2022 02:37	WG1939282
Xylenes, Total	U		0.000880	0.00650	1	10/08/2022 02:37	WG1939282
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/08/2022 02:37	WG1939282
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/08/2022 02:37	WG1939282
(S) Toluene-d8	*99.0*			*75.0-131*		*10/08/2022 02:37*	WG1939282
(S) 4-Bromofluorobenzene	*96.8*			*67.0-138*		*10/08/2022 02:37*	WG1939282
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*10/08/2022 02:37*	WG1939282

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	11.5		1.61	4.00	1	10/10/2022 23:18	WG1939751
C28-C36 Motor Oil Range	24.8		0.274	4.00	1	10/10/2022 23:18	WG1939751
(S) o-Terphenyl	*55.5*			*18.0-148*		*10/10/2022 23:18*	WG1939751

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/10/2022 12:30	WG1939942
Anthracene	U		0.00230	0.00600	1	10/10/2022 12:30	WG1939942
Benzo(a)anthracene	U		0.00173	0.00600	1	10/10/2022 12:30	WG1939942
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/10/2022 12:30	WG1939942
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/10/2022 12:30	WG1939942
Benzo(a)pyrene	U		0.00179	0.00600	1	10/10/2022 12:30	WG1939942
Chrysene	U		0.00232	0.00600	1	10/10/2022 12:30	WG1939942
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/10/2022 12:30	WG1939942
Fluoranthene	U		0.00227	0.00600	1	10/10/2022 12:30	WG1939942
Fluorene	U		0.00205	0.00600	1	10/10/2022 12:30	WG1939942
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/10/2022 12:30	WG1939942
1-Methylnaphthalene	U		0.00449	0.0200	1	10/10/2022 12:30	WG1939942
2-Methylnaphthalene	0.00841	J	0.00427	0.0200	1	10/10/2022 12:30	WG1939942
Naphthalene	U		0.00408	0.0200	1	10/10/2022 12:30	WG1939942
Pyrene	U		0.00200	0.00600	1	10/10/2022 12:30	WG1939942
(S) p-Terphenyl-d14	*72.3*			*23.0-120*		*10/10/2022 12:30*	WG1939942
(S) Nitrobenzene-d5	*73.6*			*14.0-149*		*10/10/2022 12:30*	WG1939942
(S) 2-Fluorobiphenyl	*75.2*			*34.0-125*		*10/10/2022 12:30*	WG1939942

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.30		1	10/24/2022 08:14	WG1944117

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.352	J	0.255	1.00	1	10/11/2022 23:17	WG1939411

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.81	T8	1	10/07/2022 14:00	WG1938326

Sample Narrative:

L1542584-06 WG1938326: 8.81 at 20.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	541		10.0	1	10/07/2022 09:00	WG1937494

Sample Narrative:

L1542584-06 WG1937494: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2090		0.0852	0.500	1	10/21/2022 02:51	WG1938390
Cadmium	U		0.0471	0.500	1	10/21/2022 02:51	WG1938390
Copper	18.2		0.400	2.00	1	10/21/2022 02:51	WG1938390
Lead	11.3		0.208	0.500	1	10/21/2022 02:51	WG1938390
Nickel	35.4		0.132	2.00	1	10/21/2022 02:51	WG1938390
Selenium	U		0.764	2.00	1	10/21/2022 02:51	WG1938390
Silver	U		0.127	1.00	1	10/23/2022 21:00	WG1938390
Zinc	51.8		0.832	5.00	1	10/21/2022 02:51	WG1938390

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.888		0.0167	0.200	1	10/26/2022 05:20	WG1946938

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.66		0.100	1.00	5	10/21/2022 17:27	WG1938402

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0334	J	0.0217	0.100	1	10/06/2022 02:13	WG1937362
(S) a,a,a-Trifluorotoluene(FID)	*87.2*			*77.0-120*		*10/06/2022 02:13*	WG1937362

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/08/2022 02:56	WG1939282
Toluene	U		0.00130	0.00500	1	10/08/2022 02:56	WG1939282
Ethylbenzene	U		0.000737	0.00250	1	10/08/2022 02:56	WG1939282
Xylenes, Total	0.00130	J	0.000880	0.00650	1	10/08/2022 02:56	WG1939282
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/08/2022 02:56	WG1939282
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/08/2022 02:56	WG1939282
(S) Toluene-d8	*95.3*			*75.0-131*		*10/08/2022 02:56*	WG1939282
(S) 4-Bromofluorobenzene	*107*			*67.0-138*		*10/08/2022 02:56*	WG1939282
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*10/08/2022 02:56*	WG1939282

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	13.3		1.61	4.00	1	10/10/2022 23:31	WG1939751
C28-C36 Motor Oil Range	29.3		0.274	4.00	1	10/10/2022 23:31	WG1939751
(S) o-Terphenyl	*52.9*			*18.0-148*		*10/10/2022 23:31*	WG1939751

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/10/2022 12:47	WG1939942
Anthracene	U		0.00230	0.00600	1	10/10/2022 12:47	WG1939942
Benzo(a)anthracene	U		0.00173	0.00600	1	10/10/2022 12:47	WG1939942
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/10/2022 12:47	WG1939942
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/10/2022 12:47	WG1939942
Benzo(a)pyrene	U		0.00179	0.00600	1	10/10/2022 12:47	WG1939942
Chrysene	U		0.00232	0.00600	1	10/10/2022 12:47	WG1939942
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/10/2022 12:47	WG1939942
Fluoranthene	U		0.00227	0.00600	1	10/10/2022 12:47	WG1939942
Fluorene	U		0.00205	0.00600	1	10/10/2022 12:47	WG1939942
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/10/2022 12:47	WG1939942
1-Methylnaphthalene	0.00458	J	0.00449	0.0200	1	10/10/2022 12:47	WG1939942
2-Methylnaphthalene	0.00738	J	0.00427	0.0200	1	10/10/2022 12:47	WG1939942
Naphthalene	U		0.00408	0.0200	1	10/10/2022 12:47	WG1939942
Pyrene	U		0.00200	0.00600	1	10/10/2022 12:47	WG1939942
(S) p-Terphenyl-d14	*67.7*			*23.0-120*		*10/10/2022 12:47*	WG1939942
(S) Nitrobenzene-d5	*70.0*			*14.0-149*		*10/10/2022 12:47*	WG1939942
(S) 2-Fluorobiphenyl	*69.2*			*34.0-125*		*10/10/2022 12:47*	WG1939942

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.13		1	10/24/2022 08:17	WG1944117

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/11/2022 23:40	WG1939411

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.68	T8	1	10/07/2022 14:00	WG1938326

Sample Narrative:

L1542584-07 WG1938326: 8.68 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	213		10.0	1	10/07/2022 09:00	WG1937494

Sample Narrative:

L1542584-07 WG1937494: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	584	J3 O1 V	0.0852	0.500	1	10/21/2022 01:35	WG1938390
Cadmium	U		0.0471	0.500	1	10/21/2022 01:35	WG1938390
Copper	11.4		0.400	2.00	1	10/21/2022 01:35	WG1938390
Lead	6.96		0.208	0.500	1	10/21/2022 01:35	WG1938390
Nickel	16.8	O1	0.132	2.00	1	10/21/2022 01:35	WG1938390
Selenium	U		0.764	2.00	1	10/21/2022 01:35	WG1938390
Silver	U	O1	0.127	1.00	1	10/21/2022 01:35	WG1938390
Zinc	31.9		0.832	5.00	1	10/21/2022 01:35	WG1938390

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.114	J	0.0167	0.200	1	10/10/2022 21:32	WG1939698

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.63		0.100	1.00	5	10/21/2022 16:01	WG1938402

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0273	J	0.0217	0.100	1	10/06/2022 02:36	WG1937362
(S) a,a,a-Trifluorotoluene(FID)	*87.5*			*77.0-120*		*10/06/2022 02:36*	WG1937362

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/08/2022 03:15	WG1939282
Toluene	U		0.00130	0.00500	1	10/08/2022 03:15	WG1939282
Ethylbenzene	U		0.000737	0.00250	1	10/08/2022 03:15	WG1939282
Xylenes, Total	U		0.000880	0.00650	1	10/08/2022 03:15	WG1939282
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/08/2022 03:15	WG1939282
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/08/2022 03:15	WG1939282
(S) Toluene-d8	*101*			*75.0-131*		*10/08/2022 03:15*	WG1939282
(S) 4-Bromofluorobenzene	*99.1*			*67.0-138*		*10/08/2022 03:15*	WG1939282
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*		*10/08/2022 03:15*	WG1939282

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	1.92	J	1.61	4.00	1	10/10/2022 23:44	WG1939751
C28-C36 Motor Oil Range	5.86	B	0.274	4.00	1	10/10/2022 23:44	WG1939751
(S) o-Terphenyl	*73.4*			*18.0-148*		*10/10/2022 23:44*	WG1939751

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/10/2022 13:23	WG1939942
Anthracene	U		0.00230	0.00600	1	10/10/2022 13:23	WG1939942
Benzo(a)anthracene	U		0.00173	0.00600	1	10/10/2022 13:23	WG1939942
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/10/2022 13:23	WG1939942
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/10/2022 13:23	WG1939942
Benzo(a)pyrene	U		0.00179	0.00600	1	10/10/2022 13:23	WG1939942
Chrysene	U		0.00232	0.00600	1	10/10/2022 13:23	WG1939942
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/10/2022 13:23	WG1939942
Fluoranthene	U		0.00227	0.00600	1	10/10/2022 13:23	WG1939942
Fluorene	U		0.00205	0.00600	1	10/10/2022 13:23	WG1939942
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/10/2022 13:23	WG1939942
1-Methylnaphthalene	U		0.00449	0.0200	1	10/10/2022 13:23	WG1939942
2-Methylnaphthalene	U		0.00427	0.0200	1	10/10/2022 13:23	WG1939942
Naphthalene	U		0.00408	0.0200	1	10/10/2022 13:23	WG1939942
Pyrene	U		0.00200	0.00600	1	10/10/2022 13:23	WG1939942
(S) p-Terphenyl-d14	*68.7*			*23.0-120*		*10/10/2022 13:23*	WG1939942
(S) Nitrobenzene-d5	*73.3*			*14.0-149*		*10/10/2022 13:23*	WG1939942
(S) 2-Fluorobiphenyl	*71.0*			*34.0-125*		*10/10/2022 13:23*	WG1939942

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.34		1	10/24/2022 08:26	WG1944117

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	10/11/2022 23:48	WG1939411

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.63	T8	1	10/07/2022 14:00	WG1938326

Sample Narrative:

L1542584-08 WG1938326: 8.63 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	199		10.0	1	10/07/2022 09:00	WG1937494

Sample Narrative:

L1542584-08 WG1937494: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	490		0.0852	0.500	1	10/21/2022 02:54	WG1938390
Cadmium	U		0.0471	0.500	1	10/21/2022 02:54	WG1938390
Copper	9.44		0.400	2.00	1	10/21/2022 02:54	WG1938390
Lead	6.18		0.208	0.500	1	10/21/2022 02:54	WG1938390
Nickel	12.5		0.132	2.00	1	10/21/2022 02:54	WG1938390
Selenium	U		0.764	2.00	1	10/21/2022 02:54	WG1938390
Silver	U		0.127	1.00	1	10/23/2022 21:03	WG1938390
Zinc	28.3		0.832	5.00	1	10/21/2022 02:54	WG1938390

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.0868	J	0.0167	0.200	1	10/26/2022 05:23	WG1946938

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.33		0.100	1.00	5	10/21/2022 17:30	WG1938402

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0260	J	0.0217	0.100	1	10/06/2022 02:59	WG1937362
(S) a,a,a-Trifluorotoluene(FID)	*87.9*			*77.0-120*		*10/06/2022 02:59*	WG1937362

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/08/2022 03:34	WG1939282
Toluene	U		0.00130	0.00500	1	10/08/2022 03:34	WG1939282
Ethylbenzene	U		0.000737	0.00250	1	10/08/2022 03:34	WG1939282
Xylenes, Total	U		0.000880	0.00650	1	10/08/2022 03:34	WG1939282
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/08/2022 03:34	WG1939282
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/08/2022 03:34	WG1939282
(S) Toluene-d8	*96.3*			*75.0-131*		*10/08/2022 03:34*	WG1939282
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*10/08/2022 03:34*	WG1939282
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*10/08/2022 03:34*	WG1939282

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	10/10/2022 23:58	WG1939751
C28-C36 Motor Oil Range	1.81	B J	0.274	4.00	1	10/10/2022 23:58	WG1939751
(S) o-Terphenyl	*60.2*			*18.0-148*		*10/10/2022 23:58*	WG1939751

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/10/2022 13:41	WG1939942
Anthracene	U		0.00230	0.00600	1	10/10/2022 13:41	WG1939942
Benzo(a)anthracene	U		0.00173	0.00600	1	10/10/2022 13:41	WG1939942
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/10/2022 13:41	WG1939942
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/10/2022 13:41	WG1939942
Benzo(a)pyrene	U		0.00179	0.00600	1	10/10/2022 13:41	WG1939942
Chrysene	U		0.00232	0.00600	1	10/10/2022 13:41	WG1939942
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/10/2022 13:41	WG1939942
Fluoranthene	U		0.00227	0.00600	1	10/10/2022 13:41	WG1939942
Fluorene	U		0.00205	0.00600	1	10/10/2022 13:41	WG1939942
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/10/2022 13:41	WG1939942
1-Methylnaphthalene	U		0.00449	0.0200	1	10/10/2022 13:41	WG1939942
2-Methylnaphthalene	U		0.00427	0.0200	1	10/10/2022 13:41	WG1939942
Naphthalene	U		0.00408	0.0200	1	10/10/2022 13:41	WG1939942
Pyrene	U		0.00200	0.00600	1	10/10/2022 13:41	WG1939942
(S) p-Terphenyl-d14	*61.3*			*23.0-120*		*10/10/2022 13:41*	WG1939942
(S) Nitrobenzene-d5	*64.5*			*14.0-149*		*10/10/2022 13:41*	WG1939942
(S) 2-Fluorobiphenyl	*63.0*			*34.0-125*		*10/10/2022 13:41*	WG1939942

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	2.13		1	10/24/2022 08:29	WG1944117

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.461	J	0.255	1.00	1	10/11/2022 23:53	WG1939411

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.47	T8	1	10/07/2022 14:00	WG1938326

Sample Narrative:

L1542584-09 WG1938326: 8.47 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	296		10.0	1	10/07/2022 09:00	WG1937494

Sample Narrative:

L1542584-09 WG1937494: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	329	J6	0.0852	0.500	1	10/13/2022 16:37	WG1938414
Cadmium	U		0.0471	0.500	1	10/13/2022 16:37	WG1938414
Copper	14.7		0.400	2.00	1	10/13/2022 16:37	WG1938414
Lead	9.83		0.208	0.500	1	10/13/2022 16:37	WG1938414
Nickel	19.5		0.132	2.00	1	10/13/2022 16:37	WG1938414
Selenium	U		0.764	2.00	1	10/13/2022 16:37	WG1938414
Silver	U	J6	0.127	1.00	1	10/13/2022 16:37	WG1938414
Zinc	50.7	J6	0.832	5.00	1	10/13/2022 16:37	WG1938414

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.283		0.0167	0.200	1	10/10/2022 21:35	WG1939698

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.91	J6 O1	0.100	1.00	5	10/13/2022 16:14	WG1938416

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0246	J	0.0217	0.100	1	10/06/2022 03:22	WG1937362
(S) a,a,a-Trifluorotoluene(FID)	*87.7*			*77.0-120*		*10/06/2022 03:22*	WG1937362

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/08/2022 03:53	WG1939282
Toluene	U		0.00130	0.00500	1	10/08/2022 03:53	WG1939282
Ethylbenzene	U		0.000737	0.00250	1	10/08/2022 03:53	WG1939282
Xylenes, Total	U		0.000880	0.00650	1	10/08/2022 03:53	WG1939282
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/08/2022 03:53	WG1939282
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/08/2022 03:53	WG1939282
(S) Toluene-d8	*95.4*			*75.0-131*		*10/08/2022 03:53*	WG1939282
(S) 4-Bromofluorobenzene	*108*			*67.0-138*		*10/08/2022 03:53*	WG1939282
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*		*10/08/2022 03:53*	WG1939282

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	10/10/2022 21:31	WG1939751
C28-C36 Motor Oil Range	3.67	B J	0.274	4.00	1	10/10/2022 21:31	WG1939751
(S) o-Terphenyl	*70.0*			*18.0-148*		*10/10/2022 21:31*	WG1939751

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/10/2022 13:58	WG1939942
Anthracene	U		0.00230	0.00600	1	10/10/2022 13:58	WG1939942
Benzo(a)anthracene	U		0.00173	0.00600	1	10/10/2022 13:58	WG1939942
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/10/2022 13:58	WG1939942
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/10/2022 13:58	WG1939942
Benzo(a)pyrene	U		0.00179	0.00600	1	10/10/2022 13:58	WG1939942
Chrysene	U		0.00232	0.00600	1	10/10/2022 13:58	WG1939942
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/10/2022 13:58	WG1939942
Fluoranthene	U		0.00227	0.00600	1	10/10/2022 13:58	WG1939942
Fluorene	U		0.00205	0.00600	1	10/10/2022 13:58	WG1939942
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/10/2022 13:58	WG1939942
1-Methylnaphthalene	U		0.00449	0.0200	1	10/10/2022 13:58	WG1939942
2-Methylnaphthalene	U		0.00427	0.0200	1	10/10/2022 13:58	WG1939942
Naphthalene	U		0.00408	0.0200	1	10/10/2022 13:58	WG1939942
Pyrene	U		0.00200	0.00600	1	10/10/2022 13:58	WG1939942
(S) p-Terphenyl-d14	*68.4*			*23.0-120*		*10/10/2022 13:58*	WG1939942
(S) Nitrobenzene-d5	*62.2*			*14.0-149*		*10/10/2022 13:58*	WG1939942
(S) 2-Fluorobiphenyl	*66.2*			*34.0-125*		*10/10/2022 13:58*	WG1939942

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.44		1	10/24/2022 08:32	WG1944117

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.361	J	0.255	1.00	1	10/11/2022 23:58	WG1939411

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.79	T8	1	10/07/2022 14:00	WG1938326

Sample Narrative:

L1542584-10 WG1938326: 8.79 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	432		10.0	1	10/07/2022 09:00	WG1937494

Sample Narrative:

L1542584-10 WG1937494: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	2140		0.0852	0.500	1	10/13/2022 16:52	WG1938414
Cadmium	U		0.0471	0.500	1	10/13/2022 16:52	WG1938414
Copper	11.1		0.400	2.00	1	10/13/2022 16:52	WG1938414
Lead	6.60		0.208	0.500	1	10/13/2022 16:52	WG1938414
Nickel	12.0		0.132	2.00	1	10/13/2022 16:52	WG1938414
Selenium	U		0.764	2.00	1	10/13/2022 16:52	WG1938414
Silver	U		0.127	1.00	1	10/13/2022 16:52	WG1938414
Zinc	31.1		0.832	5.00	1	10/13/2022 16:52	WG1938414

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.95		0.0167	0.200	1	10/10/2022 21:38	WG1939698

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.90		0.100	1.00	5	10/13/2022 16:34	WG1938416

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0790	J	0.0217	0.100	1	10/06/2022 03:45	WG1937362
(S) a,a,a-Trifluorotoluene(FID)	*87.0*			*77.0-120*		*10/06/2022 03:45*	WG1937362

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00153		0.000467	0.00100	1	10/08/2022 04:12	WG1939282
Toluene	0.00448	J	0.00130	0.00500	1	10/08/2022 04:12	WG1939282
Ethylbenzene	0.00181	J	0.000737	0.00250	1	10/08/2022 04:12	WG1939282
Xylenes, Total	0.00619	J	0.000880	0.00650	1	10/08/2022 04:12	WG1939282
1,2,4-Trimethylbenzene	0.00168	J	0.00158	0.00500	1	10/08/2022 04:12	WG1939282
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/08/2022 04:12	WG1939282
(S) Toluene-d8	*101*			*75.0-131*		*10/08/2022 04:12*	WG1939282
(S) 4-Bromofluorobenzene	*97.8*			*67.0-138*		*10/08/2022 04:12*	WG1939282
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*10/08/2022 04:12*	WG1939282

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	9.27		1.61	4.00	1	10/10/2022 21:44	WG1939751
C28-C36 Motor Oil Range	17.0		0.274	4.00	1	10/10/2022 21:44	WG1939751
(S) o-Terphenyl	*67.8*			*18.0-148*		*10/10/2022 21:44*	WG1939751

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/10/2022 14:16	WG1939942
Anthracene	U		0.00230	0.00600	1	10/10/2022 14:16	WG1939942
Benzo(a)anthracene	U		0.00173	0.00600	1	10/10/2022 14:16	WG1939942
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/10/2022 14:16	WG1939942
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/10/2022 14:16	WG1939942
Benzo(a)pyrene	U		0.00179	0.00600	1	10/10/2022 14:16	WG1939942
Chrysene	U		0.00232	0.00600	1	10/10/2022 14:16	WG1939942
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/10/2022 14:16	WG1939942
Fluoranthene	U		0.00227	0.00600	1	10/10/2022 14:16	WG1939942
Fluorene	U		0.00205	0.00600	1	10/10/2022 14:16	WG1939942
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/10/2022 14:16	WG1939942
1-Methylnaphthalene	0.0123	J	0.00449	0.0200	1	10/10/2022 14:16	WG1939942
2-Methylnaphthalene	0.0236		0.00427	0.0200	1	10/10/2022 14:16	WG1939942
Naphthalene	0.0139	J	0.00408	0.0200	1	10/10/2022 14:16	WG1939942
Pyrene	U		0.00200	0.00600	1	10/10/2022 14:16	WG1939942
(S) p-Terphenyl-d14	*84.4*			*23.0-120*		*10/10/2022 14:16*	WG1939942
(S) Nitrobenzene-d5	*83.3*			*14.0-149*		*10/10/2022 14:16*	WG1939942
(S) 2-Fluorobiphenyl	*85.6*			*34.0-125*		*10/10/2022 14:16*	WG1939942

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.38		1	10/24/2022 08:35	WG1944117

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.530	J	0.255	1.00	1	10/12/2022 00:03	WG1939411

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.57	T8	1	10/07/2022 14:00	WG1938326

Sample Narrative:

L1542584-11 WG1938326: 8.57 at 20.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	181		10.0	1	10/07/2022 09:00	WG1937494

Sample Narrative:

L1542584-11 WG1937494: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	200		0.0852	0.500	1	10/13/2022 16:55	WG1938414
Cadmium	U		0.0471	0.500	1	10/13/2022 16:55	WG1938414
Copper	19.4		0.400	2.00	1	10/13/2022 16:55	WG1938414
Lead	10.1		0.208	0.500	1	10/13/2022 16:55	WG1938414
Nickel	19.4		0.132	2.00	1	10/13/2022 16:55	WG1938414
Selenium	U		0.764	2.00	1	10/13/2022 16:55	WG1938414
Silver	U		0.127	1.00	1	10/13/2022 16:55	WG1938414
Zinc	59.0		0.832	5.00	1	10/13/2022 16:55	WG1938414

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.293		0.0167	0.200	1	10/10/2022 21:46	WG1939698

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.71		0.100	1.00	5	10/13/2022 16:37	WG1938416

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	10/05/2022 11:39	WG1937191
(S) a,a,a-Trifluorotoluene(FID)	*94.5*			*77.0-120*		*10/05/2022 11:39*	WG1937191

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/08/2022 04:31	WG1939282
Toluene	U		0.00130	0.00500	1	10/08/2022 04:31	WG1939282
Ethylbenzene	U		0.000737	0.00250	1	10/08/2022 04:31	WG1939282
Xylenes, Total	U		0.000880	0.00650	1	10/08/2022 04:31	WG1939282
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/08/2022 04:31	WG1939282
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/08/2022 04:31	WG1939282
(S) Toluene-d8	*99.1*			*75.0-131*		*10/08/2022 04:31*	WG1939282
(S) 4-Bromofluorobenzene	*98.5*			*67.0-138*		*10/08/2022 04:31*	WG1939282
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*10/08/2022 04:31*	WG1939282

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	10/10/2022 21:58	WG1939751
C28-C36 Motor Oil Range	2.79	B J	0.274	4.00	1	10/10/2022 21:58	WG1939751
(S) o-Terphenyl	*64.1*			*18.0-148*		*10/10/2022 21:58*	WG1939751

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	10/10/2022 15:09	WG1939942
Anthracene	U		0.00230	0.00600	1	10/10/2022 15:09	WG1939942
Benzo(a)anthracene	U		0.00173	0.00600	1	10/10/2022 15:09	WG1939942
Benzo(b)fluoranthene	U		0.00153	0.00600	1	10/10/2022 15:09	WG1939942
Benzo(k)fluoranthene	U		0.00215	0.00600	1	10/10/2022 15:09	WG1939942
Benzo(a)pyrene	U		0.00179	0.00600	1	10/10/2022 15:09	WG1939942
Chrysene	U		0.00232	0.00600	1	10/10/2022 15:09	WG1939942
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	10/10/2022 15:09	WG1939942
Fluoranthene	U		0.00227	0.00600	1	10/10/2022 15:09	WG1939942
Fluorene	U		0.00205	0.00600	1	10/10/2022 15:09	WG1939942
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	10/10/2022 15:09	WG1939942
1-Methylnaphthalene	U		0.00449	0.0200	1	10/10/2022 15:09	WG1939942
2-Methylnaphthalene	U		0.00427	0.0200	1	10/10/2022 15:09	WG1939942
Naphthalene	U		0.00408	0.0200	1	10/10/2022 15:09	WG1939942
Pyrene	U		0.00200	0.00600	1	10/10/2022 15:09	WG1939942
(S) p-Terphenyl-d14	*77.5*			*23.0-120*		*10/10/2022 15:09*	WG1939942
(S) Nitrobenzene-d5	*70.4*			*14.0-149*		*10/10/2022 15:09*	WG1939942
(S) 2-Fluorobiphenyl	*75.4*			*34.0-125*		*10/10/2022 15:09*	WG1939942

Method Blank (MB)

(MB) R3847566-1 10/11/22 21:57

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

L1541484-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1541484-01 10/11/22 22:38 • (DUP) R3847566-3 10/11/22 22:46

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

L1543035-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1543035-01 10/12/22 00:29 • (DUP) R3847566-4 10/12/22 00:45

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

Laboratory Control Sample (LCS)

(LCS) R3847566-2 10/11/22 22:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	9.74	97.4	80.0-120	

L1543551-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1543551-01 10/12/22 01:00 • (MS) R3847566-6 10/12/22 01:11 • (MSD) R3847566-7 10/12/22 01:16

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	U	16.1	15.2	80.4	75.8	1	75.0-125			5.94	20

L1543551-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1543551-01 10/12/22 01:00 • (MS) R3847566-8 10/12/22 01:21

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	643	U	493	76.6	50	75.0-125	

L1542584-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1542584-04 10/07/22 14:00 • (DUP) R3845908-2 10/07/22 14:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	pH	su		%		%
pH	9.21	9.17	1	0.435		1

Sample Narrative:

OS: 9.21 at 20.6C

DUP: 9.17 at 20.4C

L1542780-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1542780-01 10/07/22 14:00 • (DUP) R3845908-3 10/07/22 14:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.97	8.97	1	0.000		1

Sample Narrative:

OS: 8.97 at 20.5C

DUP: 8.97 at 20.5C

Laboratory Control Sample (LCS)

(LCS) R3845908-1 10/07/22 14:00

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 20.8C

Method Blank (MB)

(MB) R3845723-1 10/07/22 09:00

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

L1541862-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1541862-02 10/07/22 09:00 • (DUP) R3845723-3 10/07/22 09:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	246	246	1	0.244		20

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

L1542584-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1542584-08 10/07/22 09:00 • (DUP) R3845723-4 10/07/22 09:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	199	197	1	0.759		20

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

Laboratory Control Sample (LCS)

(LCS) R3845723-2 10/07/22 09:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1120	100	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3847163-1 10/11/22 15:00

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

L1541823-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1541823-06 10/11/22 15:00 • (DUP) R3847163-3 10/11/22 15:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	108	106	1	1.68		20

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

L1544043-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1544043-06 10/11/22 15:00 • (DUP) R3847163-4 10/11/22 15:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2350	2350	1	0.341		20

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

Laboratory Control Sample (LCS)

(LCS) R3847163-2 10/11/22 15:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1080	96.1	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3851935-1 10/23/22 17:13

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) R3851935-2 10/23/22 17:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	104	104	80.0-120	
Cadmium	100	98.5	98.5	80.0-120	
Copper	100	104	104	80.0-120	
Lead	100	99.1	99.1	80.0-120	
Nickel	100	100	100	80.0-120	
Selenium	100	98.6	98.6	80.0-120	
Silver	20.0	17.7	88.3	80.0-120	
Zinc	100	96.4	96.4	80.0-120	

L1542584-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1542584-07 10/21/22 01:35 • (MS) R3851937-3 10/21/22 01:44 • (MSD) R3851937-4 10/21/22 01:47

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	584	888	700	304	116	1	75.0-125	V	J3	23.7	20
Cadmium	100	U	103	93.9	103	93.9	1	75.0-125			8.96	20
Copper	100	11.4	119	108	108	96.3	1	75.0-125			10.3	20
Lead	100	6.96	110	101	103	93.6	1	75.0-125			8.58	20
Nickel	100	16.8	121	111	104	94.6	1	75.0-125			8.24	20
Selenium	100	U	101	93.2	101	93.2	1	75.0-125			7.85	20
Silver	20.0	U	18.5	17.1	92.7	85.4	1	75.0-125			8.13	20
Zinc	100	31.9	131	118	99.1	85.6	1	75.0-125			10.9	20

Method Blank (MB)

(MB) R3848268-1 10/13/22 16:32

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) R3848268-2 10/13/22 16:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	92.9	92.9	80.0-120	
Cadmium	100	90.0	90.0	80.0-120	
Copper	100	92.1	92.1	80.0-120	
Lead	100	89.4	89.4	80.0-120	
Nickel	100	91.1	91.1	80.0-120	
Selenium	100	91.8	91.8	80.0-120	
Silver	20.0	16.8	84.1	80.0-120	
Zinc	100	89.6	89.6	80.0-120	

L1542584-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1542584-09 10/13/22 16:37 • (MS) R3848268-5 10/13/22 16:46 • (MSD) R3848268-6 10/13/22 16:49

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	329	393	428	64.1	99.0	1	75.0-125	J6		8.49	20
Cadmium	100	U	78.0	86.1	78.0	86.1	1	75.0-125			9.89	20
Copper	100	14.7	96.6	109	81.8	93.8	1	75.0-125			11.7	20
Lead	100	9.83	87.5	94.1	77.6	84.2	1	75.0-125			7.28	20
Nickel	100	19.5	97.5	105	78.0	85.9	1	75.0-125			7.70	20
Selenium	100	U	78.3	86.8	78.3	86.8	1	75.0-125			10.3	20
Silver	20.0	U	14.7	16.4	73.5	81.8	1	75.0-125	J6		10.7	20
Zinc	100	50.7	117	129	66.1	78.3	1	75.0-125	J6		9.97	20

Method Blank (MB)

(MB) R3846866-1 10/10/22 20:55

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) R3846866-2 10/10/22 20:58 • (LCSD) R3846866-3 10/10/22 21:01

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	0.938	0.947	93.8	94.7	80.0-120			0.983	20

Method Blank (MB)

(MB) R3853022-1 10/26/22 05:04

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) R3853022-2 10/26/22 05:06 • (LCSD) R3853022-3 10/26/22 05:09

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	0.973	1.01	97.3	101	80.0-120			3.84	20

Method Blank (MB)

(MB) R3851647-1 10/21/22 15:55

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) R3851647-2 10/21/22 15:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	90.4	90.4	80.0-120	

L1542584-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1542584-07 10/21/22 16:01 • (MS) R3851647-5 10/21/22 16:11 • (MSD) R3851647-6 10/21/22 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 %
Arsenic	100	3.63	88.8	88.5	85.1	84.8	5	75.0-125			0.330	20

Method Blank (MB)

(MB) R3848200-1 10/13/22 16:07

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) R3848200-2 10/13/22 16:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	86.3	86.3	80.0-120	

L1542584-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1542584-09 10/13/22 16:14 • (MS) R3848200-5 10/13/22 16:24 • (MSD) R3848200-6 10/13/22 16:27

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	3.91	73.2	83.7	69.3	79.8	5	75.0-125	J6		13.5	20

Method Blank (MB)

(MB) R3845118-2 10/05/22 05:50

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)	*95.4*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3845118-1 10/05/22 04:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.18	94.2	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*77.0-120*	

L1541709-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1541709-01 10/05/22 09:15 • (MS) R3845118-3 10/05/22 13:21 • (MSD) R3845118-4 10/05/22 13:41

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	0.126	3.88	3.23	68.9	57.6	1	10.0-151			18.3	28
(S) a,a,a-Trifluorotoluene(FID)					*104*	*103*		*77.0-120*				

Method Blank (MB)

(MB) R3846125-2 10/05/22 19:36

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)	*88.4*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3846125-1 10/05/22 17:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.83	87.8	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*94.5*	*77.0-120*	

L1541890-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1541890-04 10/05/22 20:51 • (MS) R3846125-3 10/06/22 04:08 • (MSD) R3846125-4 10/06/22 04:31

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	U	2.73	2.56	50.1	46.5	1	10.0-151			6.43	28
(S) a,a,a-Trifluorotoluene(FID)					*88.4*	*88.8*		*77.0-120*				

Method Blank (MB)

(MB) R3847076-2 10/08/22 01:02

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	*96.8*			*75.0-131*
(S) 4-Bromofluorobenzene	*106*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3847076-1 10/08/22 00:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.130	104	70.0-123	
Toluene	0.125	0.125	100	75.0-121	
Ethylbenzene	0.125	0.124	99.2	74.0-126	
Xylenes, Total	0.375	0.383	102	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.142	114	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.146	117	73.0-127	
(S) Toluene-d8			*97.5*	*75.0-131*	
(S) 4-Bromofluorobenzene			*96.5*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*109*	*70.0-130*	

Method Blank (MB)

(MB) R3846974-1 10/10/22 15:51

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	0.708	J	0.274	4.00
(S) o-Terphenyl	*85.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3846974-2 10/10/22 16:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	39.5	79.0	50.0-150	
(S) o-Terphenyl			*108*	*18.0-148*	

L1541807-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1541807-01 10/10/22 19:32 • (MS) R3846974-3 10/10/22 19:45 • (MSD) R3846974-4 10/10/22 19:58

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	50.0	6.84	41.2	40.8	68.7	67.9	1	50.0-150			0.976	20
(S) o-Terphenyl					*67.1*	*68.6*		*18.0-148*				

Method Blank (MB)

(MB) R3847153-1 10/10/22 21:31

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	0.630	J	0.274	4.00
(S) o-Terphenyl	*94.3*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3847153-2 10/10/22 21:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	44.5	89.0	50.0-150	
(S) o-Terphenyl			*100*	*18.0-148*	

L1543809-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1543809-01 10/10/22 21:58 • (MS) R3847153-3 10/10/22 22:11 • (MSD) R3847153-4 10/10/22 22:24

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	48.9	2.36	41.8	44.9	80.7	88.3	1	50.0-150			7.15	20
(S) o-Terphenyl					*84.7*	*78.0*		*18.0-148*				

Method Blank (MB)

(MB) R3846695-2 10/10/22 14:52

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	*88.6*			*23.0-120*
(S) Nitrobenzene-d5	*79.0*			*14.0-149*
(S) 2-Fluorobiphenyl	*87.4*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R3846695-1 10/10/22 10:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0777	97.1	50.0-120	
Anthracene	0.0800	0.0778	97.3	50.0-126	
Benzo(a)anthracene	0.0800	0.0801	100	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0730	91.3	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0694	86.8	49.0-125	
Benzo(a)pyrene	0.0800	0.0691	86.4	42.0-120	
Chrysene	0.0800	0.0808	101	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0717	89.6	47.0-125	
Fluoranthene	0.0800	0.0819	102	49.0-129	
Fluorene	0.0800	0.0795	99.4	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0755	94.4	46.0-125	
1-Methylnaphthalene	0.0800	0.0764	95.5	51.0-121	
2-Methylnaphthalene	0.0800	0.0784	98.0	50.0-120	
Naphthalene	0.0800	0.0763	95.4	50.0-120	
Pyrene	0.0800	0.0753	94.1	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3846695-1 10/10/22 10:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			*87.2*	*23.0-120*	
(S) Nitrobenzene-d5			*105*	*14.0-149*	
(S) 2-Fluorobiphenyl			*95.4*	*34.0-125*	

L1543057-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1543057-04 10/10/22 16:56 • (MS) R3846695-3 10/10/22 17:14 • (MSD) R3846695-4 10/10/22 17:31

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	0.0784	U	0.0735	0.0724	93.8	92.3	1	14.0-127			1.51	27
Anthracene	0.0784	U	0.0780	0.0768	99.5	98.0	1	10.0-145			1.55	30
Benzo(a)anthracene	0.0784	U	0.0819	0.0806	104	103	1	10.0-139			1.60	30
Benzo(b)fluoranthene	0.0784	U	0.0629	0.0578	80.2	73.7	1	10.0-140			8.45	36
Benzo(k)fluoranthene	0.0784	U	0.0603	0.0593	76.9	75.6	1	10.0-137			1.67	31
Benzo(a)pyrene	0.0784	U	0.0742	0.0726	94.6	92.6	1	10.0-141			2.18	31
Chrysene	0.0784	U	0.0773	0.0748	98.6	95.4	1	10.0-145			3.29	30
Dibenz(a,h)anthracene	0.0784	U	0.0688	0.0640	87.8	81.6	1	10.0-132			7.23	31
Fluoranthene	0.0784	0.00302	0.0833	0.0826	102	102	1	10.0-153			0.844	33
Fluorene	0.0784	U	0.0819	0.0818	104	104	1	11.0-130			0.122	29
Indeno(1,2,3-cd)pyrene	0.0784	U	0.0703	0.0682	89.7	87.0	1	10.0-137			3.03	32
1-Methylnaphthalene	0.0784	U	0.0755	0.0752	96.3	95.9	1	10.0-142			0.398	28
2-Methylnaphthalene	0.0784	U	0.0800	0.0796	102	102	1	10.0-137			0.501	28
Naphthalene	0.0784	U	0.0729	0.0726	93.0	92.6	1	10.0-135			0.412	27
Pyrene	0.0784	U	0.0743	0.0739	94.8	94.3	1	10.0-148			0.540	35
(S) p-Terphenyl-d14					*83.4*	*74.8*		*23.0-120*				
(S) Nitrobenzene-d5					*129*	*124*		*14.0-149*				
(S) 2-Fluorobiphenyl					*90.1*	*83.4*		*34.0-125*				

GLOSSARY OF TERMS

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.
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
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

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	LA000356
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.

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

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

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 Drill Mud Release	State: CO / County/City: Rio Blanco / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET
Phone: / Email:	Site/Facility ID #: J14 496 / Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Andrew Smith	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature): A Smith	Turnaround Date Required: Standard Turnaround / 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	Boron (Hot Water Soluble Soil)	Lab Sample # / Comments:
20220929-J14_496-PH01@ 6" - 12"	SL	G	9/29/2022	0900				2	G	X	X	X	X	X	X	-01
20220929-J14_496-PH01@ 24"	SL	G	9/29/2022	0910				2	G	X	X	X	X	X	X	-02
20220929-J14_496-PH02@ 6" - 12"	SL	G	9/29/2022	0920				2	G	X	X	X	X	X	X	-03
20220929-J14_496-PH02@36"	SL	G	9/29/2022	0930				2	G	X	X	X	X	X	X	-04
20220929-J14_496-PH03@ 6" - 12"	SL	G	9/29/2022	0940				2	G	X	X	X	X	X	X	-05
20220929-J14_496-PH03@ 28"	SL	G	9/29/2022	0950				2	G	X	X	X	X	X	X	-06
20220929-J14_496-PH04@ 6" - 12"	SL	G	9/29/2022	1005				2	G	X	X	X	X	X	X	-07
20220929-J14_496-PH04@24"	SL	G	9/29/2022	1015				2	G	X	X	X	X	X	X	-08
20220929-J14_496-PH05@ 6" - 12"	SL	G	9/29/2022	1030				2	G	X	X	X	X	X	X	-09
20220929-J14_496-PH06@ 6" - 12"	SL	G	9/29/2022	1045				2	G	X	X	X	X	X	X	-10
20220929-J14_496-PH06@ 36"	SL	G	9/29/2022	1055				2	G	X	X	X	X	X	X	-11

Analyses

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:	L1542584

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 #: 575580850709

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

LAB Sample Temperature Info:
Temp Blank Received: Y (N) NA
Therm ID#: GBA7
Cooler 1 Temp Upon Receipt: __oC
Cooler 1 Therm Corr. Factor: __oC
Cooler 1 Corrected Temp: _____oC
Comments:

C081

1.8 + 0 = 1.8

Relinquished by/Company: (Signature) A Smith	Date/Time: 10/3/22 1230	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time: 10/3/22 1500	Received by/Company: (Signature)	Date/Time: 10.4.22 0900
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

Acctnum:
Template:
Prelogin:
PM:
PB:

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

Non Conformance(s): YES / (NO)

Page: ____ of: ____

ANALYTICAL REPORT

July 18, 2022

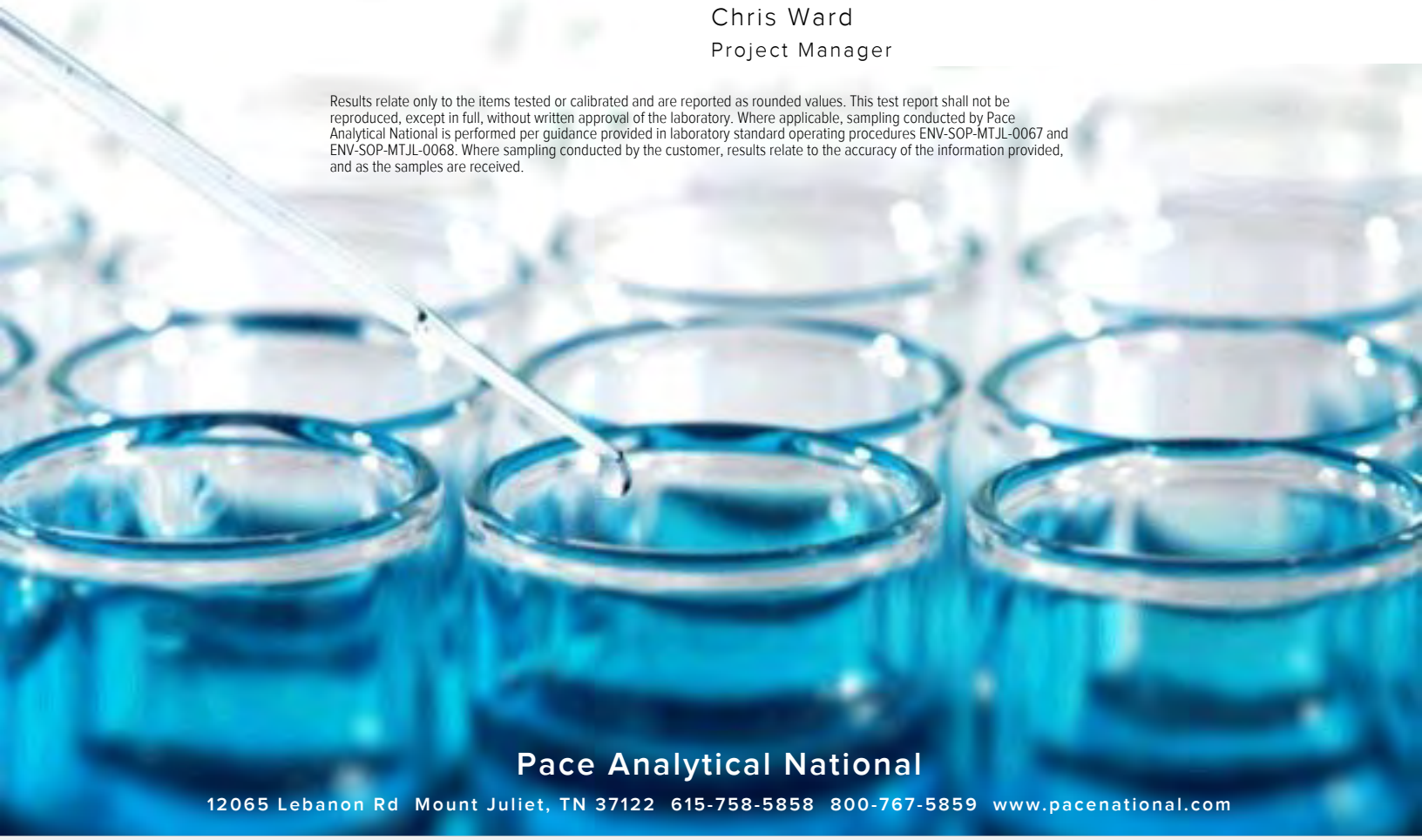
Caerus Oil and Gas

Sample Delivery Group:	L1507638
Samples Received:	06/22/2022
Project Number:	J14 496
Description:	J14 496 Background

Report To: Blair Rollins
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

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

SAMPLE SUMMARY

20220620-J14_496BGE(1510)@20' L1507638-01 Solid

Collected by: A. Smith
Collected date/time: 06/20/22 15:10
Received date/time: 06/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1891382	1	07/14/22 15:12	07/14/22 15:12	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1887036	1	06/29/22 20:00	07/01/22 13:46	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1887564	1	06/30/22 08:00	07/01/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1885637	1	07/02/22 07:00	07/02/22 10:13	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1885831	1	06/29/22 17:06	07/09/22 02:28	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1891380	1	07/13/22 21:05	07/15/22 16:33	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1885832	5	06/29/22 17:11	06/30/22 17:56	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1888058	1	06/24/22 14:55	07/01/22 20:18	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1887500	1	06/30/22 01:01	06/30/22 15:06	JAS	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

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.16		1	07/14/2022 15:12	WG1891382

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	07/01/2022 13:46	WG1887036

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.43	T8	1	07/01/2022 10:00	WG1887564

Sample Narrative:

L1507638-01 WG1887564: 8.43 at 23.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	216		10.0	1	07/02/2022 10:13	WG1885637

Sample Narrative:

L1507638-01 WG1885637: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	164		0.500	1	07/09/2022 02:28	WG1885831
Cadmium	ND		0.500	1	07/09/2022 02:28	WG1885831
Copper	10.1		2.00	1	07/09/2022 02:28	WG1885831
Lead	7.24		0.500	1	07/09/2022 02:28	WG1885831
Nickel	25.2		2.00	1	07/09/2022 02:28	WG1885831
Selenium	ND		2.00	1	07/09/2022 02:28	WG1885831
Silver	ND		1.00	1	07/09/2022 02:28	WG1885831
Zinc	37.3		5.00	1	07/09/2022 02:28	WG1885831

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	ND		0.200	1	07/15/2022 16:33	WG1891380

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.84		1.00	5	06/30/2022 17:56	WG1885832

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	ND		0.100	1	07/01/2022 20:18	WG1888058
(S) a,a,a-Trifluorotoluene(FID)	*93.3*		*77.0-120*		*07/01/2022 20:18*	WG1888058

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	ND		4.00	1	06/30/2022 15:06	WG1887500
C28-C36 Motor Oil Range	ND		4.00	1	06/30/2022 15:06	WG1887500
(S) o-Terphenyl	*54.1*		*18.0-148*		*06/30/2022 15:06*	WG1887500

Method Blank (MB)

(MB) R3810285-1 07/01/22 12:57

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

L1506558-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1506558-05 07/01/22 13:10 • (DUP) R3810285-3 07/01/22 13:15

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

L1508027-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1508027-04 07/01/22 15:35 • (DUP) R3810285-8 07/01/22 15:40

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) R3810285-2 07/01/22 13:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.6	106	80.0-120	

L1507648-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-4 07/01/22 14:17 • (MSD) R3810285-5 07/01/22 14:22

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	15.3	14.5	76.3	72.6	1	75.0-125		J6	5.02	20

Sample Narrative:

MSD: Matrix spike failure due to matrix; sample is a reducer.

L1507648-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-7 07/01/22 14:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	665	ND	548	82.5	50	75.0-125	

L1507206-17 Original Sample (OS) • Duplicate (DUP)

(OS) L1507206-17 07/01/22 10:00 • (DUP) R3809868-2 07/01/22 10:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.52	7.50	1	0.266		1

Sample Narrative:

OS: 7.52 at 22.7C

DUP: 7.5 at 22.7C

L1507206-48 Original Sample (OS) • Duplicate (DUP)

(OS) L1507206-48 07/01/22 10:00 • (DUP) R3809868-3 07/01/22 10:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.19	8.16	1	0.367		1

Sample Narrative:

OS: 8.19 at 23.1C

DUP: 8.16 at 23.1C

Laboratory Control Sample (LCS)

(LCS) R3809868-1 07/01/22 10:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.92	99.2	99.0-101	

Sample Narrative:

LCS: 9.92 at 23C

Method Blank (MB)

(MB) R3810271-1 07/02/22 10:13

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

L1507648-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1507648-06 07/02/22 10:13 • (DUP) R3810271-3 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	839	784	1	6.78		20

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

L1507900-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1507900-01 07/02/22 10:13 • (DUP) R3810271-4 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	14500	14900	1	2.11		20

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

Laboratory Control Sample (LCS)

(LCS) R3810271-2 07/02/22 10:13

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	280	104	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3812803-1 07/09/22 01:41

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	0.159	J	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) R3812803-2 07/09/22 01:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	103	103	80.0-120	
Cadmium	100	98.4	98.4	80.0-120	
Copper	100	98.1	98.1	80.0-120	
Lead	100	97.2	97.2	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	96.5	96.5	80.0-120	
Silver	20.0	16.8	84.2	80.0-120	
Zinc	100	100	100	80.0-120	

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 07/09/22 01:47 • (MS) R3812803-5 07/09/22 01:56 • (MSD) R3812803-6 07/09/22 01:58

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	316	438	445	123	129	1	75.0-125		J5	1.54	20
Cadmium	100	0.535	111	102	110	102	1	75.0-125			8.00	20
Copper	100	39.7	154	143	114	103	1	75.0-125			7.46	20
Lead	100	24.8	131	121	106	96.5	1	75.0-125			7.31	20
Nickel	100	21.9	131	122	109	99.8	1	75.0-125			7.48	20
Selenium	100	ND	111	103	109	102	1	75.0-125			7.00	20
Silver	20.0	ND	17.8	16.6	89.0	83.0	1	75.0-125			6.99	20
Zinc	100	59.3	158	142	99.2	83.0	1	75.0-125			10.8	20

Method Blank (MB)

(MB) R3815649-1 07/15/22 16:17

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) R3815649-2 07/15/22 16:20 • (LCSD) R3815649-3 07/15/22 16:23

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	0.986	1.01	98.6	101	80.0-120			2.12	20

Method Blank (MB)

(MB) R3809750-1 06/30/22 16:54

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) R3809750-2 06/30/22 16:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	89.1	89.1	80.0-120	

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 06/30/22 17:01 • (MS) R3809750-5 06/30/22 17:11 • (MSD) R3809750-6 06/30/22 17:14

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 %
Arsenic	100	44.6	151	135	106	90.3	5	75.0-125			11.0	20

Method Blank (MB)

(MB) R3810610-2 07/01/22 18:00

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)	*94.3*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3810610-1 07/01/22 16:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.55	101	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*101*	*77.0-120*	

Method Blank (MB)

(MB) R3809476-1 06/30/22 06:27

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	0.316	J	0.274	4.00
(S) o-Terphenyl	*61.1*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3809476-2 06/30/22 06:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.5	65.0	50.0-150	
(S) o-Terphenyl			*61.3*	*18.0-148*	

L1507339-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507339-05 06/30/22 14:10 • (MS) R3809476-3 06/30/22 14:24 • (MSD) R3809476-4 06/30/22 14:38

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	50.0	ND	25.1	31.8	50.2	63.6	1	50.0-150		J3	23.6	20
(S) o-Terphenyl					*43.1*	*50.3*		*18.0-148*				

GLOSSARY OF TERMS

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
J	The identification of the analyte is acceptable; the reported value is an estimate.
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.
T8	Sample(s) received past/too close to holding time expiration.

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

F239

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 Background	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): Andrew Smith	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature): A Smith	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 **

** 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 ____

Lab Project Manager:

* 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)					Lab Sample # / Comments
20220620-J14_496-BGE(1510)@20'	SL	G	6/20/2022	1510				1	P		X	X		X	X					L1507638 -01

Analyses

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:

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 8084 8503

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: 0.6 oC

Cooler 1 Therm Corr. Factor: 0.0 oC

Cooler 1 Corrected Temp: 0.6 oC

Comments: DRY

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
A Smith	06/21/22 1200		6/21 1200
	6/21 1700		
			6/22/22 900

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: ____

ANALYTICAL REPORT

July 18, 2022

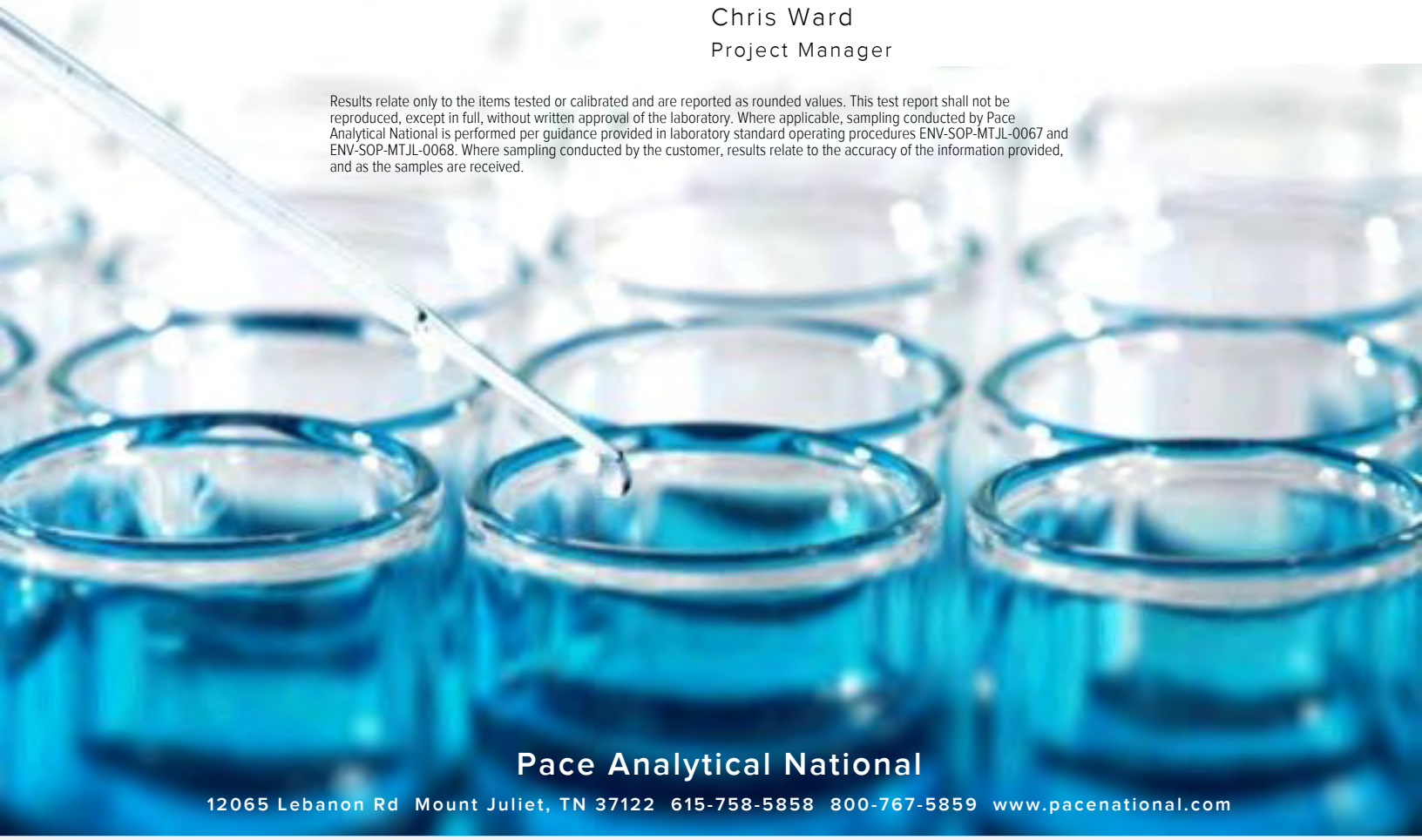
Caerus Oil and Gas

Sample Delivery Group:	L1507636
Samples Received:	06/22/2022
Project Number:	J14 496
Description:	J14 496 Background

Report To: Blair Rollins
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

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

SAMPLE SUMMARY

20220620-J14_496BGE(1455)@10'-12' L1507636-01 Solid

Collected by: A. Smith
Collected date/time: 06/20/22 14:55
Received date/time: 06/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1891382	1	07/14/22 15:10	07/14/22 15:10	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1887036	1	06/29/22 20:00	07/01/22 13:41	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1887564	1	06/30/22 08:00	07/01/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1885637	1	07/02/22 07:00	07/02/22 10:13	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1885831	1	06/29/22 17:06	07/09/22 02:25	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1891380	1	07/13/22 21:05	07/15/22 16:31	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1885832	5	06/29/22 17:11	06/30/22 17:52	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1885475	1	06/24/22 14:55	06/27/22 04:49	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1887500	1	06/30/22 01:01	06/30/22 16:44	JAS	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

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.38		1	07/14/2022 15:10	WG1891382

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	07/01/2022 13:41	WG1887036

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.35	T8	1	07/01/2022 10:00	WG1887564

Sample Narrative:
L1507636-01 WG1887564: 8.35 at 22.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	262		10.0	1	07/02/2022 10:13	WG1885637

Sample Narrative:
L1507636-01 WG1885637: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	296		0.500	1	07/09/2022 02:25	WG1885831
Cadmium	ND		0.500	1	07/09/2022 02:25	WG1885831
Copper	18.8		2.00	1	07/09/2022 02:25	WG1885831
Lead	11.7		0.500	1	07/09/2022 02:25	WG1885831
Nickel	20.2		2.00	1	07/09/2022 02:25	WG1885831
Selenium	ND		2.00	1	07/09/2022 02:25	WG1885831
Silver	ND		1.00	1	07/09/2022 02:25	WG1885831
Zinc	54.7		5.00	1	07/09/2022 02:25	WG1885831

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	ND		0.200	1	07/15/2022 16:31	WG1891380

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.66		1.00	5	06/30/2022 17:52	WG1885832

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	ND		0.100	1	06/27/2022 04:49	WG1885475
(S) a,a,a-Trifluorotoluene(FID)	*95.6*		*77.0-120*		*06/27/2022 04:49*	WG1885475

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	ND		4.00	1	06/30/2022 16:44	WG1887500
C28-C36 Motor Oil Range	ND		4.00	1	06/30/2022 16:44	WG1887500
(S) o-Terphenyl	*50.3*		*18.0-148*		*06/30/2022 16:44*	WG1887500

Method Blank (MB)

(MB) R3810285-1 07/01/22 12:57

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

L1506558-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1506558-05 07/01/22 13:10 • (DUP) R3810285-3 07/01/22 13:15

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

L1508027-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1508027-04 07/01/22 15:35 • (DUP) R3810285-8 07/01/22 15:40

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) R3810285-2 07/01/22 13:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.6	106	80.0-120	

L1507648-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-4 07/01/22 14:17 • (MSD) R3810285-5 07/01/22 14:22

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	15.3	14.5	76.3	72.6	1	75.0-125		J6	5.02	20

Sample Narrative:

MSD: Matrix spike failure due to matrix; sample is a reducer.

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

L1507648-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-7 07/01/22 14:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	665	ND	548	82.5	50	75.0-125	

L1507206-17 Original Sample (OS) • Duplicate (DUP)

(OS) L1507206-17 07/01/22 10:00 • (DUP) R3809868-2 07/01/22 10:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.52	7.50	1	0.266		1

Sample Narrative:

OS: 7.52 at 22.7C

DUP: 7.5 at 22.7C

L1507206-48 Original Sample (OS) • Duplicate (DUP)

(OS) L1507206-48 07/01/22 10:00 • (DUP) R3809868-3 07/01/22 10:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.19	8.16	1	0.367		1

Sample Narrative:

OS: 8.19 at 23.1C

DUP: 8.16 at 23.1C

Laboratory Control Sample (LCS)

(LCS) R3809868-1 07/01/22 10:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.92	99.2	99.0-101	

Sample Narrative:

LCS: 9.92 at 23C

Method Blank (MB)

(MB) R3810271-1 07/02/22 10:13

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

L1507648-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1507648-06 07/02/22 10:13 • (DUP) R3810271-3 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	839	784	1	6.78		20

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

L1507900-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1507900-01 07/02/22 10:13 • (DUP) R3810271-4 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	14500	14900	1	2.11		20

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

Laboratory Control Sample (LCS)

(LCS) R3810271-2 07/02/22 10:13

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	280	104	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3812803-1 07/09/22 01:41

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	0.159	J	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) R3812803-2 07/09/22 01:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	103	103	80.0-120	
Cadmium	100	98.4	98.4	80.0-120	
Copper	100	98.1	98.1	80.0-120	
Lead	100	97.2	97.2	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	96.5	96.5	80.0-120	
Silver	20.0	16.8	84.2	80.0-120	
Zinc	100	100	100	80.0-120	

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 07/09/22 01:47 • (MS) R3812803-5 07/09/22 01:56 • (MSD) R3812803-6 07/09/22 01:58

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	316	438	445	123	129	1	75.0-125		J5	1.54	20
Cadmium	100	0.535	111	102	110	102	1	75.0-125			8.00	20
Copper	100	39.7	154	143	114	103	1	75.0-125			7.46	20
Lead	100	24.8	131	121	106	96.5	1	75.0-125			7.31	20
Nickel	100	21.9	131	122	109	99.8	1	75.0-125			7.48	20
Selenium	100	ND	111	103	109	102	1	75.0-125			7.00	20
Silver	20.0	ND	17.8	16.6	89.0	83.0	1	75.0-125			6.99	20
Zinc	100	59.3	158	142	99.2	83.0	1	75.0-125			10.8	20

Method Blank (MB)

(MB) R3815649-1 07/15/22 16:17

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) R3815649-2 07/15/22 16:20 • (LCSD) R3815649-3 07/15/22 16:23

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	0.986	1.01	98.6	101	80.0-120			2.12	20

Method Blank (MB)

(MB) R3809750-1 06/30/22 16:54

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) R3809750-2 06/30/22 16:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	89.1	89.1	80.0-120	

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 06/30/22 17:01 • (MS) R3809750-5 06/30/22 17:11 • (MSD) R3809750-6 06/30/22 17:14

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 %
Arsenic	100	44.6	151	135	106	90.3	5	75.0-125			11.0	20

Method Blank (MB)

(MB) R3809354-2 06/26/22 19:57

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)	*97.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3809354-1 06/26/22 18:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.51	82.0	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*97.2*	*77.0-120*	

Method Blank (MB)

(MB) R3809476-1 06/30/22 06:27

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	0.316	J	0.274	4.00
(S) o-Terphenyl	*61.1*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3809476-2 06/30/22 06:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.5	65.0	50.0-150	
(S) o-Terphenyl			*61.3*	*18.0-148*	

L1507339-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507339-05 06/30/22 14:10 • (MS) R3809476-3 06/30/22 14:24 • (MSD) R3809476-4 06/30/22 14:38

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	50.0	ND	25.1	31.8	50.2	63.6	1	50.0-150		J3	23.6	20
(S) o-Terphenyl					*43.1*	*50.3*		*18.0-148*				

GLOSSARY OF TERMS

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
J	The identification of the analyte is acceptable; the reported value is an estimate.
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.
T8	Sample(s) received past/too close to holding time expiration.

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

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 Background	State: CO / County/City: Garfield / Time Zone Collected: [ ]PT [X]MT [ ]CT [ ]ET

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 _____

Phone: Email:	Site/Facility ID #: J14 496	Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Andrew Smith	Purchase Order # : Quote #:	DW PWS ID #: DW Location Code:
Collected By (signature): A Smith	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: _____

* 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)	Lab Sample # / Comments
20220620-J14_496-BGE(1455)@10'-12'	SL	G	6/20/2022	1455				1	P		X	X		X	X	L1507436

Analyses

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:

L1507436

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 8084 8503

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: 0.6 oC

Cooler 1 Therm Corr. Factor: 0 oC

Cooler 1 Corrected Temp: 0.6 oC

Comments: DRAFT

Relinquished by/Company: (Signature) A Smith	Date/Time: 06/21/22 1200	Received by/Company: (Signature)	Date/Time: 6/21 1200
Relinquished by/Company: (Signature)	Date/Time: 6/21 1700	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 6/22/22 900

F230

Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

ANALYTICAL REPORT

July 18, 2022

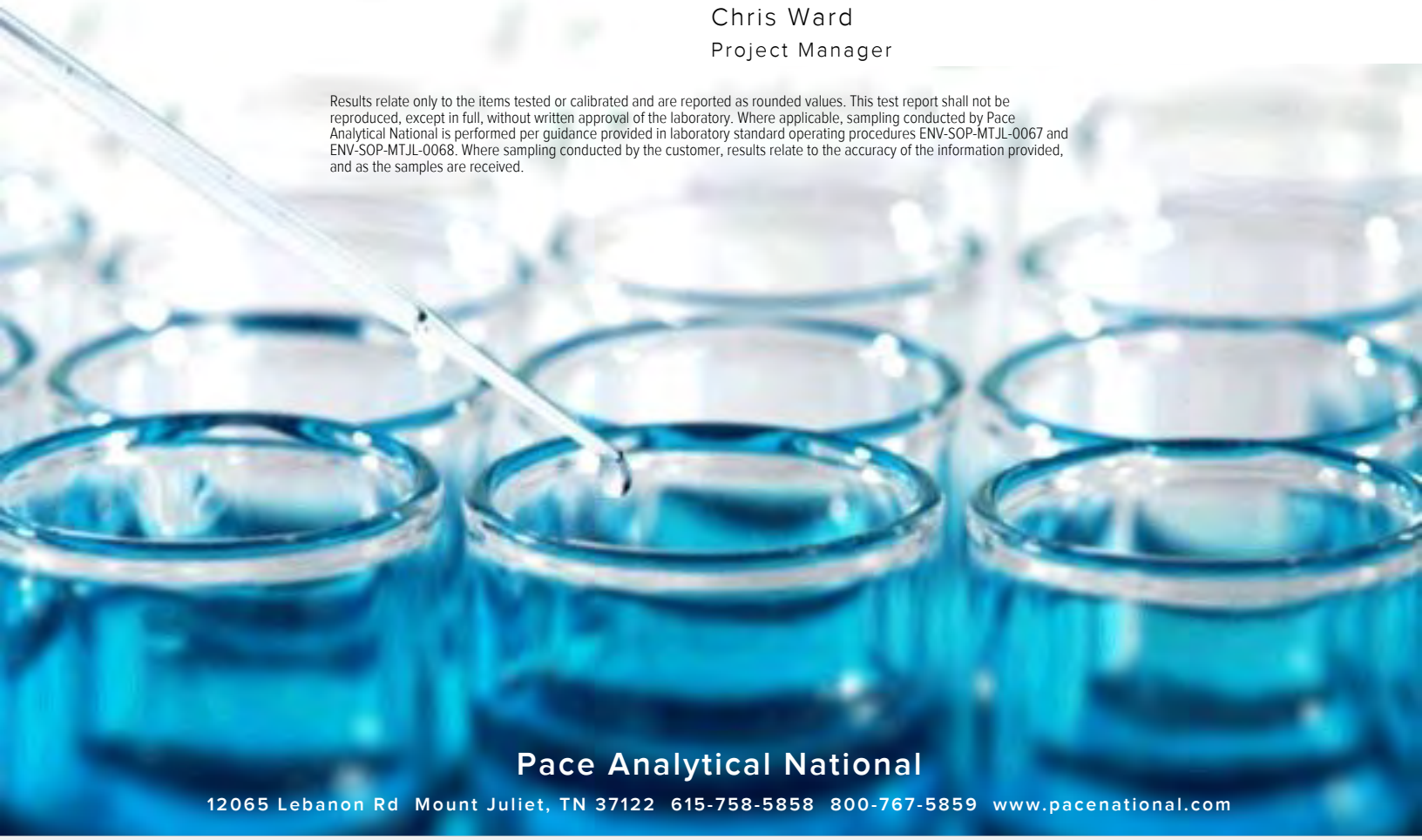
Caerus Oil and Gas

Sample Delivery Group:	L1507629
Samples Received:	06/22/2022
Project Number:	J14 496
Description:	J14 496 Background

Report To: Blair Rollins
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

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

SAMPLE SUMMARY

20220620-J14_496BGE(1640)@40' L1507629-01 Solid

Collected by: A. Smith
Collected date/time: 06/20/22 16:40
Received date/time: 06/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1891382	1	07/14/22 15:07	07/14/22 15:07	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1887036	1	06/29/22 20:00	07/01/22 13:36	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1887564	1	06/30/22 08:00	07/01/22 10:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1885637	1	07/02/22 07:00	07/02/22 10:13	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1885831	1	06/29/22 17:06	07/09/22 02:22	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1891380	1	07/13/22 21:05	07/15/22 16:28	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1885832	5	06/29/22 17:11	06/30/22 17:49	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1885475	1	06/24/22 14:55	06/27/22 04:28	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1887500	1	06/30/22 01:01	06/30/22 16:58	JAS	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

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	0.441		1	07/14/2022 15:07	WG1891382

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Hexavalent Chromium	ND		1.00	1	07/01/2022 13:36	WG1887036

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	pH				
pH	8.34	T8	1	07/01/2022 10:00	WG1887564

Sample Narrative:

L1507629-01 WG1887564: 8.34 at 23C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	279		10.0	1	07/02/2022 10:13	WG1885637

Sample Narrative:

L1507629-01 WG1885637: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	513		0.500	1	07/09/2022 02:22	WG1885831
Cadmium	ND		0.500	1	07/09/2022 02:22	WG1885831
Copper	13.3		2.00	1	07/09/2022 02:22	WG1885831
Lead	8.29		0.500	1	07/09/2022 02:22	WG1885831
Nickel	16.2		2.00	1	07/09/2022 02:22	WG1885831
Selenium	ND		2.00	1	07/09/2022 02:22	WG1885831
Silver	ND		1.00	1	07/09/2022 02:22	WG1885831
Zinc	42.2		5.00	1	07/09/2022 02:22	WG1885831

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	ND		0.200	1	07/15/2022 16:28	WG1891380

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	3.23		1.00	5	06/30/2022 17:49	WG1885832

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	ND		0.100	1	06/27/2022 04:28	WG1885475
(S) a,a,a-Trifluorotoluene(FID)	*95.3*		*77.0-120*		*06/27/2022 04:28*	WG1885475

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	ND		4.00	1	06/30/2022 16:58	WG1887500
C28-C36 Motor Oil Range	14.7		4.00	1	06/30/2022 16:58	WG1887500
(S) o-Terphenyl	*53.7*		*18.0-148*		*06/30/2022 16:58*	WG1887500

Method Blank (MB)

(MB) R3810285-1 07/01/22 12:57

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

L1506558-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1506558-05 07/01/22 13:10 • (DUP) R3810285-3 07/01/22 13:15

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

L1508027-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1508027-04 07/01/22 15:35 • (DUP) R3810285-8 07/01/22 15:40

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) R3810285-2 07/01/22 13:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.6	106	80.0-120	

L1507648-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-4 07/01/22 14:17 • (MSD) R3810285-5 07/01/22 14:22

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	15.3	14.5	76.3	72.6	1	75.0-125		J6	5.02	20

Sample Narrative:

MSD: Matrix spike failure due to matrix; sample is a reducer.

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

L1507648-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-7 07/01/22 14:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	665	ND	548	82.5	50	75.0-125	

L1507206-17 Original Sample (OS) • Duplicate (DUP)

(OS) L1507206-17 07/01/22 10:00 • (DUP) R3809868-2 07/01/22 10:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.52	7.50	1	0.266		1

Sample Narrative:

OS: 7.52 at 22.7C

DUP: 7.5 at 22.7C

L1507206-48 Original Sample (OS) • Duplicate (DUP)

(OS) L1507206-48 07/01/22 10:00 • (DUP) R3809868-3 07/01/22 10:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.19	8.16	1	0.367		1

Sample Narrative:

OS: 8.19 at 23.1C

DUP: 8.16 at 23.1C

Laboratory Control Sample (LCS)

(LCS) R3809868-1 07/01/22 10:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.92	99.2	99.0-101	

Sample Narrative:

LCS: 9.92 at 23C

Method Blank (MB)

(MB) R3810271-1 07/02/22 10:13

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

L1507648-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1507648-06 07/02/22 10:13 • (DUP) R3810271-3 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	839	784	1	6.78		20

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

L1507900-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1507900-01 07/02/22 10:13 • (DUP) R3810271-4 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	14500	14900	1	2.11		20

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

Laboratory Control Sample (LCS)

(LCS) R3810271-2 07/02/22 10:13

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	280	104	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3812803-1 07/09/22 01:41

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	0.159	J	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) R3812803-2 07/09/22 01:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	103	103	80.0-120	
Cadmium	100	98.4	98.4	80.0-120	
Copper	100	98.1	98.1	80.0-120	
Lead	100	97.2	97.2	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	96.5	96.5	80.0-120	
Silver	20.0	16.8	84.2	80.0-120	
Zinc	100	100	100	80.0-120	

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 07/09/22 01:47 • (MS) R3812803-5 07/09/22 01:56 • (MSD) R3812803-6 07/09/22 01:58

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	316	438	445	123	129	1	75.0-125		J5	1.54	20
Cadmium	100	0.535	111	102	110	102	1	75.0-125			8.00	20
Copper	100	39.7	154	143	114	103	1	75.0-125			7.46	20
Lead	100	24.8	131	121	106	96.5	1	75.0-125			7.31	20
Nickel	100	21.9	131	122	109	99.8	1	75.0-125			7.48	20
Selenium	100	ND	111	103	109	102	1	75.0-125			7.00	20
Silver	20.0	ND	17.8	16.6	89.0	83.0	1	75.0-125			6.99	20
Zinc	100	59.3	158	142	99.2	83.0	1	75.0-125			10.8	20

Method Blank (MB)

(MB) R3815649-1 07/15/22 16:17

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) R3815649-2 07/15/22 16:20 • (LCSD) R3815649-3 07/15/22 16:23

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	0.986	1.01	98.6	101	80.0-120			2.12	20

Method Blank (MB)

(MB) R3809750-1 06/30/22 16:54

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) R3809750-2 06/30/22 16:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	89.1	89.1	80.0-120	

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 06/30/22 17:01 • (MS) R3809750-5 06/30/22 17:11 • (MSD) R3809750-6 06/30/22 17:14

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 %
Arsenic	100	44.6	151	135	106	90.3	5	75.0-125			11.0	20

Method Blank (MB)

(MB) R3809354-2 06/26/22 19:57

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)	*97.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3809354-1 06/26/22 18:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.51	82.0	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*97.2*	*77.0-120*	

Method Blank (MB)

(MB) R3809476-1 06/30/22 06:27

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	0.316	J	0.274	4.00
(S) o-Terphenyl	*61.1*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3809476-2 06/30/22 06:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.5	65.0	50.0-150	
(S) o-Terphenyl			*61.3*	*18.0-148*	

L1507339-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507339-05 06/30/22 14:10 • (MS) R3809476-3 06/30/22 14:24 • (MSD) R3809476-4 06/30/22 14:38

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	50.0	ND	25.1	31.8	50.2	63.6	1	50.0-150		J3	23.6	20
(S) o-Terphenyl					*43.1*	*50.3*		*18.0-148*				

GLOSSARY OF TERMS

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
J	The identification of the analyte is acceptable; the reported value is an estimate.
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.
T8	Sample(s) received past/too close to holding time expiration.

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

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 Background	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): Andrew Smith	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature): A Smith	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)
20220620-J14_496-BGE(1640)@40'	SL	G	6/20/2022	1640				1	P		X	X		X	X

Analyses

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:
L1507629
-01

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 8084 8503

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: 0.6 oC
Cooler 1 Therm Corr. Factor: 0.0 oC
Cooler 1 Corrected Temp: 0.6 oC
Comments: DRAFT

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
A Smith	06/21/22 1200		6/21 1200
	6/21 1700		
			6/22/22 900

F229

Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: ____ of: ____

06/22-L1507629-NCF CAERUSPCO

R3/R4/RX/EX

Time estimate: oh **Time spent:** oh **Grouping date:** 22 June 2022

Members

Cole Medley (responsible) Chris Ward

~~Due on *25 June 2022 5:00 PM* for target *Done*~~ (Was done by Cole Medley at 22 June 2022 5:30 PM)

- [x] Login Clarification needed
- [ ] Chain of custody is incomplete
- [ ] Please specify Metals requested
- [ ] Please specify TCLP requested
- [ ] Received additional samples not listed on COC
- [ ] Sample IDs on containers do not match IDs on COC
- [ ] Client did not "X" analysis
- [ ] Chain of Custody is missing
- [ ] If no COC: Received by:_____
- [ ] If no COC: Date/Time:_____
- [ ] If no COC: Temp./Cont.Rec./pH:_____
- [ ] If no COC: Carrier:_____
- [ ] If no COC: Tracking #:_____
- [ ] Client informed by call
- [x] Client informed by Email
- [ ] Client informed by Voicemail
- [x] Date/Time:_____6/22/22@1530_____
- [x] PM initials:_____CMW_____
- [x] Client Contact:_____Chris McKisson_____

Comments

Cole Medley *22 June 2022 3:15 PM*

Collection Time listed as 1640 on COC but container has time listed as 1440.
Logged per COC.

Chris Ward *22 June 2022 3:30 PM*

1640 please

Cole Medley *22 June 2022 5:30 PM*

Done.

ANALYTICAL REPORT

July 18, 2022

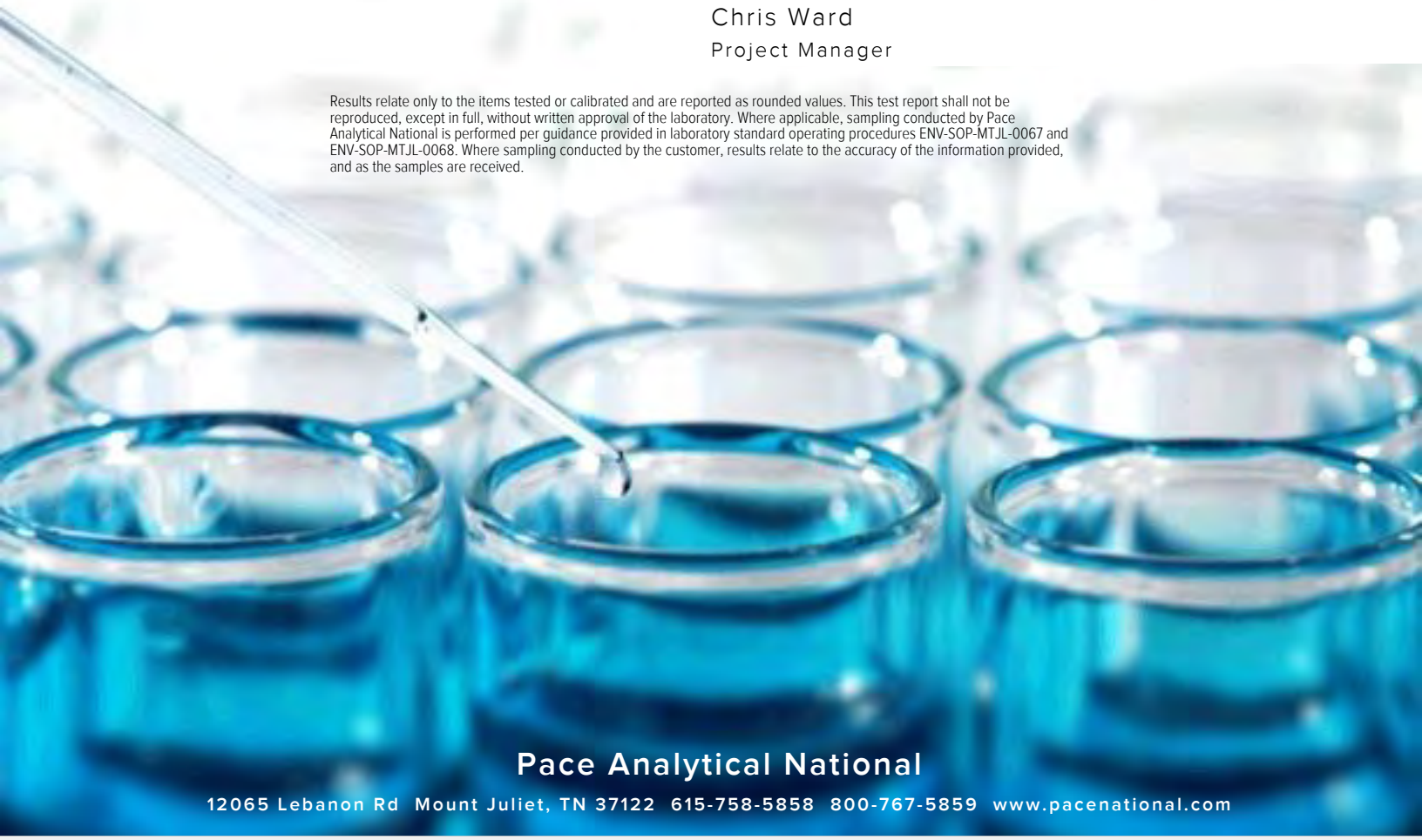
Caerus Oil and Gas

Sample Delivery Group:	L1507626
Samples Received:	06/22/2022
Project Number:	J14 496
Description:	J14 496 Background

Report To: Blair Rollins
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager



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

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SAMPLE SUMMARY

20220620-J14_496-BGE(1520)@30' L1507626-01 Solid

Collected by: A. Smith
Collected date/time: 06/20/22 15:20
Received date/time: 06/22/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1891382	1	07/14/22 15:04	07/14/22 15:04	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1887036	1	06/29/22 20:00	07/01/22 13:30	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1888292	1	06/30/22 12:00	07/01/22 13:49	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1885637	1	07/02/22 07:00	07/02/22 10:13	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1885831	1	06/29/22 17:06	07/09/22 02:19	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1891380	1	07/13/22 21:05	07/15/22 16:25	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1885832	5	06/29/22 17:11	06/30/22 17:46	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1885475	1	06/24/22 14:55	06/27/22 04:08	MGF	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1887497	1	06/30/22 03:23	06/30/22 12:27	JAS	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

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	SAR				
Sodium Adsorption Ratio	0.0738		1	07/14/2022 15:04	WG1891382

Wet Chemistry by Method 7199

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Hexavalent Chromium	ND		1.00	1	07/01/2022 13:30	WG1887036

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
	pH				
pH	8.66	T8	1	07/01/2022 13:49	WG1888292

Sample Narrative:

L1507626-01 WG1888292: 8.66 at 23.6C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	umhos/cm		umhos/cm			
Specific Conductance	300		10.0	1	07/02/2022 10:13	WG1885637

Sample Narrative:

L1507626-01 WG1885637: at 25C

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Barium	381		0.500	1	07/09/2022 02:19	WG1885831
Cadmium	ND		0.500	1	07/09/2022 02:19	WG1885831
Copper	15.4		2.00	1	07/09/2022 02:19	WG1885831
Lead	9.44		0.500	1	07/09/2022 02:19	WG1885831
Nickel	16.5		2.00	1	07/09/2022 02:19	WG1885831
Selenium	ND		2.00	1	07/09/2022 02:19	WG1885831
Silver	ND		1.00	1	07/09/2022 02:19	WG1885831
Zinc	40.7		5.00	1	07/09/2022 02:19	WG1885831

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	ND		0.200	1	07/15/2022 16:25	WG1891380

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	2.67		1.00	5	06/30/2022 17:46	WG1885832

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	ND		0.100	1	06/27/2022 04:08	WG1885475
(S) a,a,a-Trifluorotoluene(FID)	*95.0*		*77.0-120*		*06/27/2022 04:08*	WG1885475

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	ND		4.00	1	06/30/2022 12:27	WG1887497
C28-C36 Motor Oil Range	5.75		4.00	1	06/30/2022 12:27	WG1887497
(S) o-Terphenyl	*68.7*		*18.0-148*		*06/30/2022 12:27*	WG1887497

Method Blank (MB)

(MB) R3810285-1 07/01/22 12:57

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

L1506558-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1506558-05 07/01/22 13:10 • (DUP) R3810285-3 07/01/22 13:15

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

L1508027-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1508027-04 07/01/22 15:35 • (DUP) R3810285-8 07/01/22 15:40

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) R3810285-2 07/01/22 13:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.6	106	80.0-120	

L1507648-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-4 07/01/22 14:17 • (MSD) R3810285-5 07/01/22 14:22

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	15.3	14.5	76.3	72.6	1	75.0-125		J6	5.02	20

Sample Narrative:

MSD: Matrix spike failure due to matrix; sample is a reducer.

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

L1507648-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1507648-03 07/01/22 14:12 • (MS) R3810285-7 07/01/22 14:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	665	ND	548	82.5	50	75.0-125	

L1508027-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1508027-03 07/01/22 13:49 • (DUP) R3810098-2 07/01/22 13:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.73	7.71	1	0.259		1

Sample Narrative:

OS: 7.73 at 23.7C

DUP: 7.71 at 23.8C

L1508868-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1508868-01 07/01/22 13:49 • (DUP) R3810098-3 07/01/22 13:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.68	8.67	1	0.115		1

Sample Narrative:

OS: 8.68 at 23.7C

DUP: 8.67 at 23.8C

Laboratory Control Sample (LCS)

(LCS) R3810098-1 07/01/22 13:49

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.92	99.2	99.0-101	

Sample Narrative:

LCS: 9.92 at 23.3C

Method Blank (MB)

(MB) R3810271-1 07/02/22 10:13

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

L1507648-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1507648-06 07/02/22 10:13 • (DUP) R3810271-3 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	839	784	1	6.78		20

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

L1507900-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1507900-01 07/02/22 10:13 • (DUP) R3810271-4 07/02/22 10:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	14500	14900	1	2.11		20

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

Laboratory Control Sample (LCS)

(LCS) R3810271-2 07/02/22 10:13

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	280	104	85.0-115	

Sample Narrative:
LCS: at 25C

Method Blank (MB)

(MB) R3812803-1 07/09/22 01:41

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	0.159	J	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) R3812803-2 07/09/22 01:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	103	103	80.0-120	
Cadmium	100	98.4	98.4	80.0-120	
Copper	100	98.1	98.1	80.0-120	
Lead	100	97.2	97.2	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	96.5	96.5	80.0-120	
Silver	20.0	16.8	84.2	80.0-120	
Zinc	100	100	100	80.0-120	

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 07/09/22 01:47 • (MS) R3812803-5 07/09/22 01:56 • (MSD) R3812803-6 07/09/22 01:58

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	316	438	445	123	129	1	75.0-125		J5	1.54	20
Cadmium	100	0.535	111	102	110	102	1	75.0-125			8.00	20
Copper	100	39.7	154	143	114	103	1	75.0-125			7.46	20
Lead	100	24.8	131	121	106	96.5	1	75.0-125			7.31	20
Nickel	100	21.9	131	122	109	99.8	1	75.0-125			7.48	20
Selenium	100	ND	111	103	109	102	1	75.0-125			7.00	20
Silver	20.0	ND	17.8	16.6	89.0	83.0	1	75.0-125			6.99	20
Zinc	100	59.3	158	142	99.2	83.0	1	75.0-125			10.8	20

Method Blank (MB)

(MB) R3815649-1 07/15/22 16:17

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) R3815649-2 07/15/22 16:20 • (LCSD) R3815649-3 07/15/22 16:23

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	0.986	1.01	98.6	101	80.0-120			2.12	20

Method Blank (MB)

(MB) R3809750-1 06/30/22 16:54

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) R3809750-2 06/30/22 16:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	89.1	89.1	80.0-120	

L1507241-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507241-05 06/30/22 17:01 • (MS) R3809750-5 06/30/22 17:11 • (MSD) R3809750-6 06/30/22 17:14

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 %
Arsenic	100	44.6	151	135	106	90.3	5	75.0-125			11.0	20

Method Blank (MB)

(MB) R3809354-2 06/26/22 19:57

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)	*97.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3809354-1 06/26/22 18:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.51	82.0	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*97.2*	*77.0-120*	

Method Blank (MB)

(MB) R3809610-1 06/30/22 12:02

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	0.559	J	0.274	4.00
(S) o-Terphenyl	*84.4*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3809610-2 06/30/22 12:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.8	65.6	50.0-150	
(S) o-Terphenyl			*57.5*	*18.0-148*	

L1507192-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1507192-01 06/30/22 16:12 • (MS) R3809610-3 06/30/22 16:25 • (MSD) R3809610-4 06/30/22 16:38

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	48.3	4.03	35.8	27.8	65.8	48.6	1	50.0-150		J3 J6	25.2	20
(S) o-Terphenyl					*52.6*	*39.7*		*18.0-148*				

GLOSSARY OF TERMS

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
J	The identification of the analyte is acceptable; the reported value is an estimate.
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.
T8	Sample(s) received past/too close to holding time expiration.

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

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 Background	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): Andrew Smith	Purchase Order # : / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (Signature): A Smith	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 _____

Analyses

* 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)	Lab Sample # / Comments
20220620-J14_496-BGE(1520)@30'	SL	G	6/20/2022	1520				1	P		X	X		X	X	L1507626 -01

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:

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 #: 575580848503

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: 0.6 oC
Cooler 1 Therm Corr. Factor: 0 oC
Cooler 1 Corrected Temp: 0.6 oC
Comments: DRAFT

Relinquished by/Company: (Signature) A Smith	Date/Time: 06/21/22 1200	Received by/Company: (Signature)	Date/Time: 6/21 1200	F228
Relinquished by/Company: (Signature)	Date/Time: 6/21 1700	Received by/Company: (Signature)	Date/Time:	Acctnum: / Template: / Prelogin: / PM: / PB:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 6/22/22 900	

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

ANALYTICAL REPORT

May 17, 2022

Revised Report

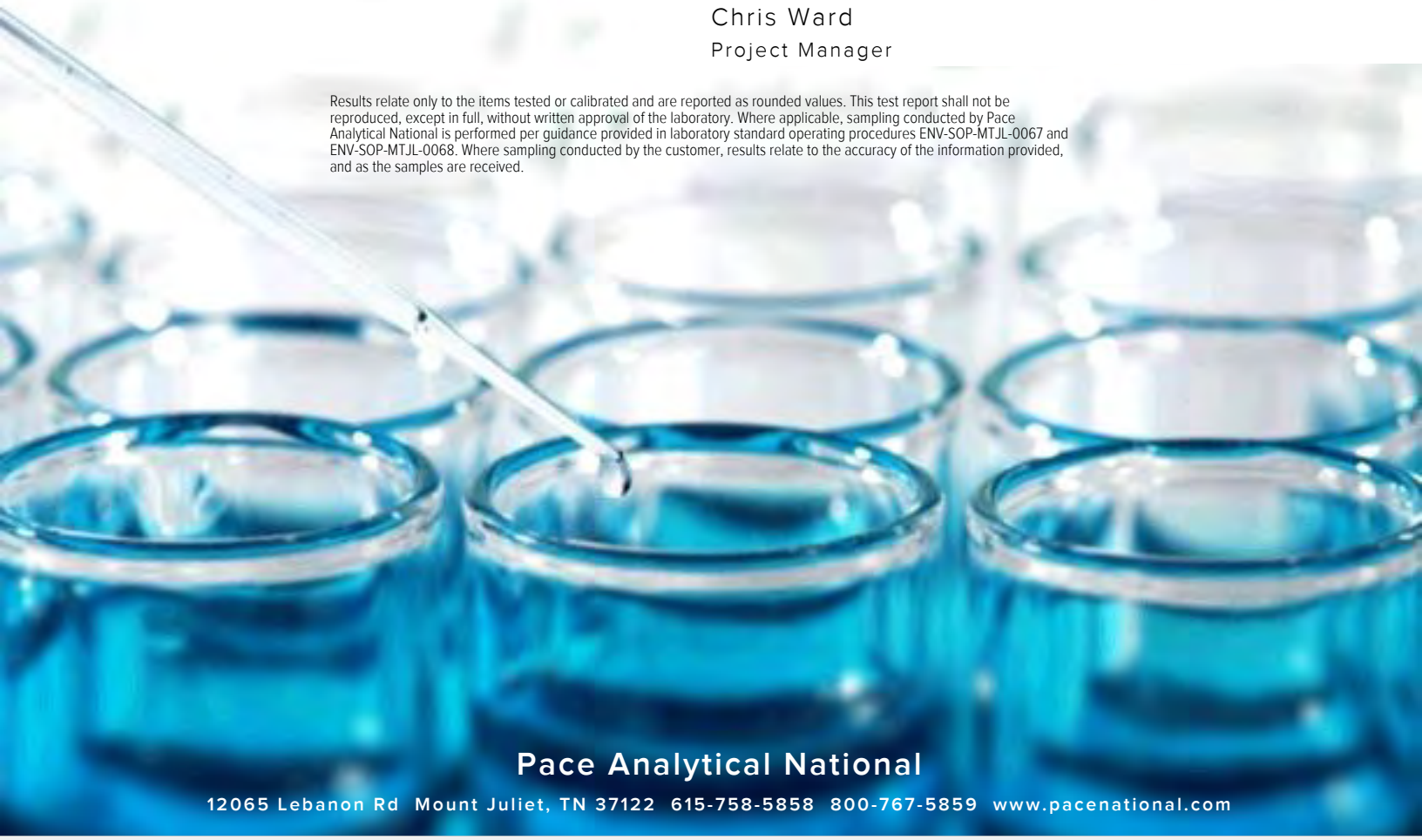
Caerus Oil and Gas

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
	SAR				
Sodium Adsorption Ratio	15.6		1	05/10/2022 18:24	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 21:06	WG1860696

Wet Chemistry by Method 9045D

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

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	5.17		1.00	5	05/09/2022 16:30	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	0.434		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
	SAR				
Sodium Adsorption Ratio	11.7		1	05/10/2022 18:26	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 21:11	WG1860696

Wet Chemistry by Method 9045D

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

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	6.26		1.00	5	05/09/2022 16:33	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	0.337		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
	SAR				
Sodium Adsorption Ratio	10.7		1	05/10/2022 18:29	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 21:16	WG1860696

Wet Chemistry by Method 9045D

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

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	7.45		1.00	5	05/09/2022 16:51	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	0.316		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*				

GLOSSARY OF TERMS

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	LA000356
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)	Lab Sample # / Comments
20220429-J14_496-SS_SE@0.5'	SL	G	4/29/2022	1315				2	G	X	X	X	X	X	X	-12
20220429-J14_496-SS_NE@0.5'	SL	G	4/29/2022	1325				2	G	X	X	X	X	X	X	-13
20220429-J14_496-SS_NW@0.5'	SL	G	4/29/2022	1330				2	G	X	X	X	X	X	X	-14
20220429-J14_496-SS_SW@0.5'	SL	G	4/29/2022	1335				2	G	X	X	X	X	X	X	-15

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

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: ____

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

December 03, 2020

Caerus Oil and Gas

Sample Delivery Group:	L1288879
Samples Received:	11/21/2020
Project Number:	J14-496
Description:	J14-496
Site:	J14-496
Report To:	Jake Janicek 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

TABLE OF CONTENTS

2020119-J14-496 (BG01) L1288879-01 Solid

Collected by: Evan Mason | Collected date/time: 11/19/20 11:00 | Received date/time: 11/21/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1583854	1	12/02/20 16:53	12/02/20 16:53	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1583386	1	11/29/20 12:38	11/30/20 12:20	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1584820	1	12/01/20 18:34	12/01/20 20:02	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1584860	1	12/01/20 14:18	12/02/20 14:00	JRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1583982	1	11/30/20 07:58	12/02/20 15:47	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1583983	5	11/30/20 07:59	11/30/20 19:28	LD	Mt. Juliet, TN

2020119-J14-496 (BG02) L1288879-02 Solid

Collected by: Evan Mason | Collected date/time: 11/19/20 11:10 | Received date/time: 11/21/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1583854	1	12/02/20 16:56	12/02/20 16:56	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1583386	1	11/29/20 12:38	11/30/20 12:22	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1584820	1	12/01/20 18:34	12/01/20 20:02	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1584289	1	11/30/20 15:27	12/01/20 14:00	JRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1583982	1	11/30/20 07:58	12/02/20 16:02	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1583983	5	11/30/20 07:59	11/30/20 19:45	LD	Mt. Juliet, TN

2020119-J14-496 (BG03) L1288879-03 Solid

Collected by: Evan Mason | Collected date/time: 11/19/20 11:20 | Received date/time: 11/21/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1583854	1	12/02/20 16:59	12/02/20 16:59	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1583386	1	11/29/20 12:38	11/30/20 12:22	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1584820	1	12/01/20 18:34	12/01/20 20:02	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1584289	1	11/30/20 15:27	12/01/20 14:00	JRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1583982	1	11/30/20 07:58	12/02/20 16:05	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1583983	5	11/30/20 07:59	11/30/20 19:48	LD	Mt. Juliet, TN

2020119-J14-496 (BG04) L1288879-04 Solid

Collected by: Evan Mason | Collected date/time: 11/19/20 11:30 | Received date/time: 11/21/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1583854	1	12/02/20 17:01	12/02/20 17:01	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1583386	1	11/29/20 12:38	11/30/20 12:23	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1584820	1	12/01/20 18:34	12/01/20 20:02	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1584289	1	11/30/20 15:27	12/01/20 14:00	JRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1583982	1	11/30/20 07:58	12/02/20 16:08	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1583983	5	11/30/20 07:59	11/30/20 19:51	LD	Mt. Juliet, TN

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

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.639		1	12/02/2020 16:53	WG1583854

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	11/30/2020 12:20	WG1583386

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.74	T8	1	12/01/2020 20:02	WG1584820

Sample Narrative:

L1288879-01 WG1584820: 8.74 at 23C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	110		10.0	1	12/02/2020 14:00	WG1584860

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Boron	ND		10.0	1	12/02/2020 15:47	WG1583982

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.31		1.00	5	11/30/2020 19:28	WG1583983

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.36		1	12/02/2020 16:56	WG1583854

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	11/30/2020 12:22	WG1583386

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.81	T8	1	12/01/2020 20:02	WG1584820

Sample Narrative:

L1288879-02 WG1584820: 8.81 at 21.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	268		10.0	1	12/01/2020 14:00	WG1584289

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Boron	ND		10.0	1	12/02/2020 16:02	WG1583982

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.41		1.00	5	11/30/2020 19:45	WG1583983

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.84		1	12/02/2020 16:59	WG1583854

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	11/30/2020 12:22	WG1583386

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.59	T8	1	12/01/2020 20:02	WG1584820

Sample Narrative:

L1288879-03 WG1584820: 8.59 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	289		10.0	1	12/01/2020 14:00	WG1584289

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Boron	ND		10.0	1	12/02/2020 16:05	WG1583982

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.62		1.00	5	11/30/2020 19:48	WG1583983

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.63		1	12/02/2020 17:01	WG1583854

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND		2.00	1	11/30/2020 12:23	WG1583386

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.49	T8	1	12/01/2020 20:02	WG1584820

Sample Narrative:

L1288879-04 WG1584820: 8.49 at 20.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	500		10.0	1	12/01/2020 14:00	WG1584289

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Boron	ND		10.0	1	12/02/2020 16:08	WG1583982

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.45		1.00	5	11/30/2020 19:51	WG1583983

Method Blank (MB)

(MB) R3598475-1 11/30/20 12:16

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chromium,Hexavalent	U		0.640	2.00

L1288377-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1288377-01 11/30/20 12:16 • (DUP) R3598475-3 11/30/20 12:16

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

L1288875-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1288875-01 11/30/20 12:20 • (DUP) R3598475-4 11/30/20 12:20

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

Laboratory Control Sample (LCS)

(LCS) R3598475-2 11/30/20 12:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium,Hexavalent	24.0	22.6	94.0	80.0-120	

L1290336-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1290336-01 11/30/20 12:23 • (MS) R3598475-5 11/30/20 12:23 • (MSD) R3598475-6 11/30/20 12:23

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 %
Chromium,Hexavalent	20.0	ND	ND	ND	0.000	0.000	1	75.0-125	J6	J6	0.000	20

L1289541-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1289541-01 12/01/20 20:02 • (DUP) R3599213-2 12/01/20 20:02

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	10.2	10.2	1	0.295		1

Sample Narrative:

OS: 10.19 at 20.8C

DUP: 10.16 at 19.9C

Laboratory Control Sample (LCS)

(LCS) R3599213-1 12/01/20 20:02

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.04 at 19.1C

Method Blank (MB)

(MB) R3599054-1 12/01/20 14:00

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

L1288377-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1288377-02 12/01/20 14:00 • (DUP) R3599054-3 12/01/20 14:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	226	225	1	0.443		20

L1288879-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1288879-03 12/01/20 14:00 • (DUP) R3599054-4 12/01/20 14:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	289	290	1	0.104		20

Laboratory Control Sample (LCS)

(LCS) R3599054-2 12/01/20 14:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	umhos/cm	umhos/cm	%	%	
Specific Conductance	483	481	99.6	85.0-115	

Method Blank (MB)

(MB) R3599629-1 12/02/20 14:00

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

L1288535-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1288535-05 12/02/20 14:00 • (DUP) R3599629-3 12/02/20 14:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	537	529	1	1.50		20

Laboratory Control Sample (LCS)

(LCS) R3599629-2 12/02/20 14:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	umhos/cm	umhos/cm	%	%	
Specific Conductance	483	483	100	85.0-115	

Method Blank (MB)

(MB) R3599765-1 12/02/20 15:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Boron	U		1.67	10.0

Laboratory Control Sample (LCS)

(LCS) R3599765-2 12/02/20 15:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	100	98.6	98.6	80.0-120	

L1288879-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1288879-01 12/02/20 15:47 • (MS) R3599765-5 12/02/20 15:55 • (MSD) R3599765-6 12/02/20 15:58

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 %
Boron	100	ND	96.0	87.6	96.0	87.6	1	75.0-125			9.07	20

Method Blank (MB)

(MB) R3598762-1 11/30/20 19:21

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) R3598762-2 11/30/20 19:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	96.0	96.0	80.0-120	

L1288879-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1288879-01 11/30/20 19:28 • (MS) R3598762-5 11/30/20 19:38 • (MSD) R3598762-6 11/30/20 19:41

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	20.0	3.31	96.4	87.6	93.1	84.3	5	75.0-125			9.56	20

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.
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
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* 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 National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
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	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

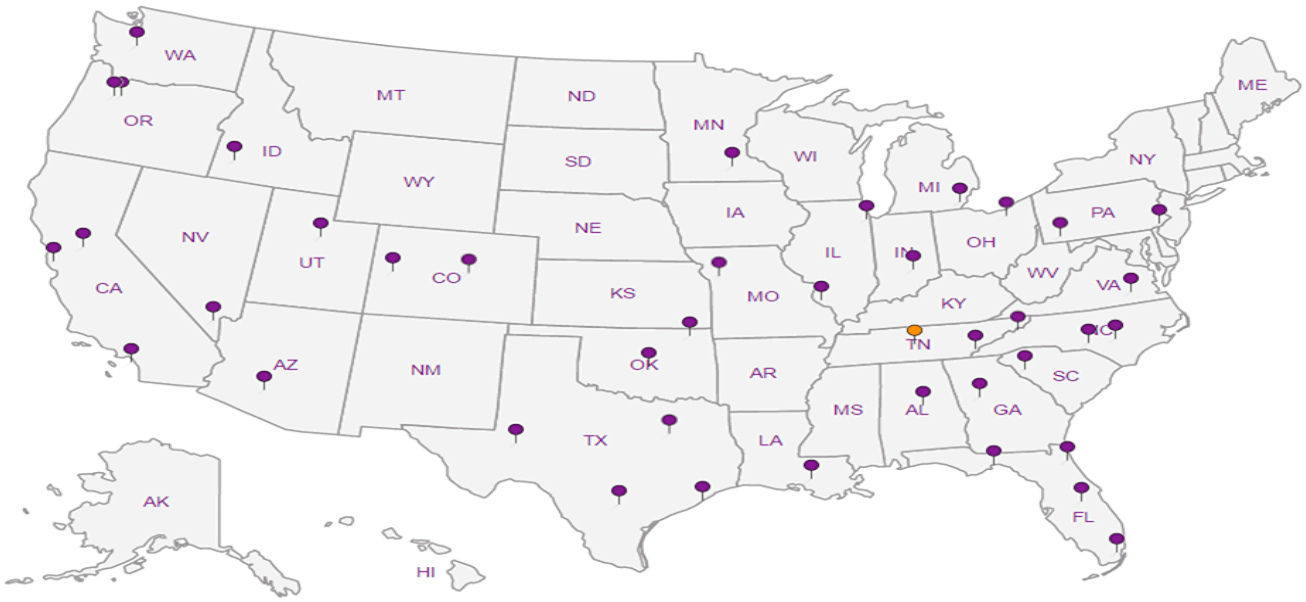
Third Party Federal Accreditations

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Caerus Oil & Gas LLC
143 Diamond Avenue
Parachute, CO 81635
970-285-9606

Billing Information: **Same as above**

Report to: **jjanicek@caerusoilandgas.com**

Email To: **jjanciek@caerusoilandgas.com**

Project Description: **J14 - 496**

City/State Collected: **Piceance, CO**

Phone:
Fax:

Client Project # **J14 - 496**

Lab Project # **J14 - 496**

Collected by (print): Evan Mason

Site/Facility ID # **J14 - 496**

P.O. # **J14 - 496**

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: **Standard TAT**

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Arsenic	Boron	Hexavalent Chromium [Cr(VI)]	SAR, EC, pH	Remarks	Sample # (lab only)
20201119-J14-496(BG01)@8'	Grab	SS	8'	11/19/20	1100	2	X	X	X	X		01
20201119-J14-496(BG02)@8'	"	"	8'	"	1110	2	X	X	X	X		02
20201119-J14-496(BG03)@8'	"	"	8'	"	1120	2	X	X	X	X		03
20201119-J14-496(BG04)@8'	"	"	8'	"	1130	2	X	X	X	X		04

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # L289879

C080

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	11/20/20	1300		
Relinquished by : (Signature)	Date: 11/20/20	Time: 1700	Received by: (Signature)	Temp: 0.8+1=1.7 Bottles Received: 8
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11/21/20 Time: 9:00

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK