

November 6, 2020

Jake Janicek
EH&S Specialist
143 Diamond Avenue
Parachute, Colorado 81635

**RE: Partially Buried Vault Sampling Summary (Remediation Number 16015)
Puckett #251-1
Caerus Oil & Gas, LLC
Garfield County, Colorado**

Dear Mr. Janicek:

LT Environmental, Inc. (LTE) was contracted by Caerus Oil and Gas, LLC (Caerus) to conduct soil sampling associated with the removal of a partially buried vault (PBV) at the PUCKETT-67S97W/1NWN (Well Name: PUCKETT # 251-1) (Facility ID: 324328) (Site). Per the Colorado Oil and Gas Conservation Commission (COGCC) Document Number 402503736, representative confirmation soil samples have been collected from the sidewalls and base of the removed PBV footprint. The Site is located in Caerus's Logan Mesa area of operation in Garfield County, Colorado (Figure 1).

SOIL SAMPLING ACTIVITIES

On October 12, 2020, LTE personnel conducted soil sampling activities associated with the removal of the PBV at the Site. Pinyon Field Services (PFS) was onsite using an excavator to assist with the sample collection. One confirmation soil sample was collected from each sidewall and the base of the excavation. All five soil samples were collected from the excavator bucket due to safety concerns with accessing the sample locations. The confirmation soil samples were collected at depths ranging from 4 feet to 6 feet below ground surface (bgs). The soil sampling was conducted by an LTE geologist who inspected the soil for the presence or absence of petroleum hydrocarbon odor and/or staining. The soil was characterized by visual and olfactory inspection of the soil sample. Additionally, four background soil samples were collected in each cardinal direction, on and off the original pad disturbance from disturbed to undisturbed soil. The PBV soil samples were submitted for laboratory analysis of constituents listed in COGCC Table 910-1. All background soil samples were submitted for the analysis of arsenic, pH, electrical conductivity (EC), and sodium adsorption ratio (SAR). All soil samples were submitted to Pace of Mt. Juliet, Tennessee. The excavation extent, confirmation soil samples, and background soil sample locations are depicted on the attached Figure 2.

ANALYTICAL RESULTS

Laboratory analytical results of all excavation confirmation soil samples collected were either below the laboratory detection limit or within the COGCC Table 910-1 Concentration Levels except for arsenic. All of the five confirmation soil samples collected exceeded the COGCC Table 910-1 Concentration Level for arsenic with concentrations ranging from 3.53 milligrams per kilogram (mg/kg) in soil sample 20201012 – PUCKETT 251-1 (BOTTOM) @ 6' to 12.6 mg/kg in soil sample 20201012 – PUCKETT 251-1 (SWALL) @ 4'. Additionally, the four background soil samples collected were within the COGCC Table 910-1 Concentration Levels for pH, EC, and SAR. All four background soil samples exceeded the COGCC Table 910-1 Concentration Level for arsenic with concentrations ranging from 3.29 mg/kg in soil sample 20201012 – PUCKETT 251-1 (BG04) @ 6" to 13.9 mg/kg in soil sample 20201012 – PUCKETT 251-1 (BG01) @ 6". Laboratory analytical results are included as an attachment and summarized in Table 1.

Please call Dustin Held at (970) 433-8253 if you have any questions regarding this report or require additional information.

Sincerely,

LT ENVIRONMENTAL, INC.



Dustin Held
Project Geologist



Chris McKisson
Western Slope Manager

Attachments:

Figure 1 – Site Location Map

Figure 2 – Site Map

Table 1 -Laboratory Results Summary Table

Attachment – Laboratory Analytical Reports

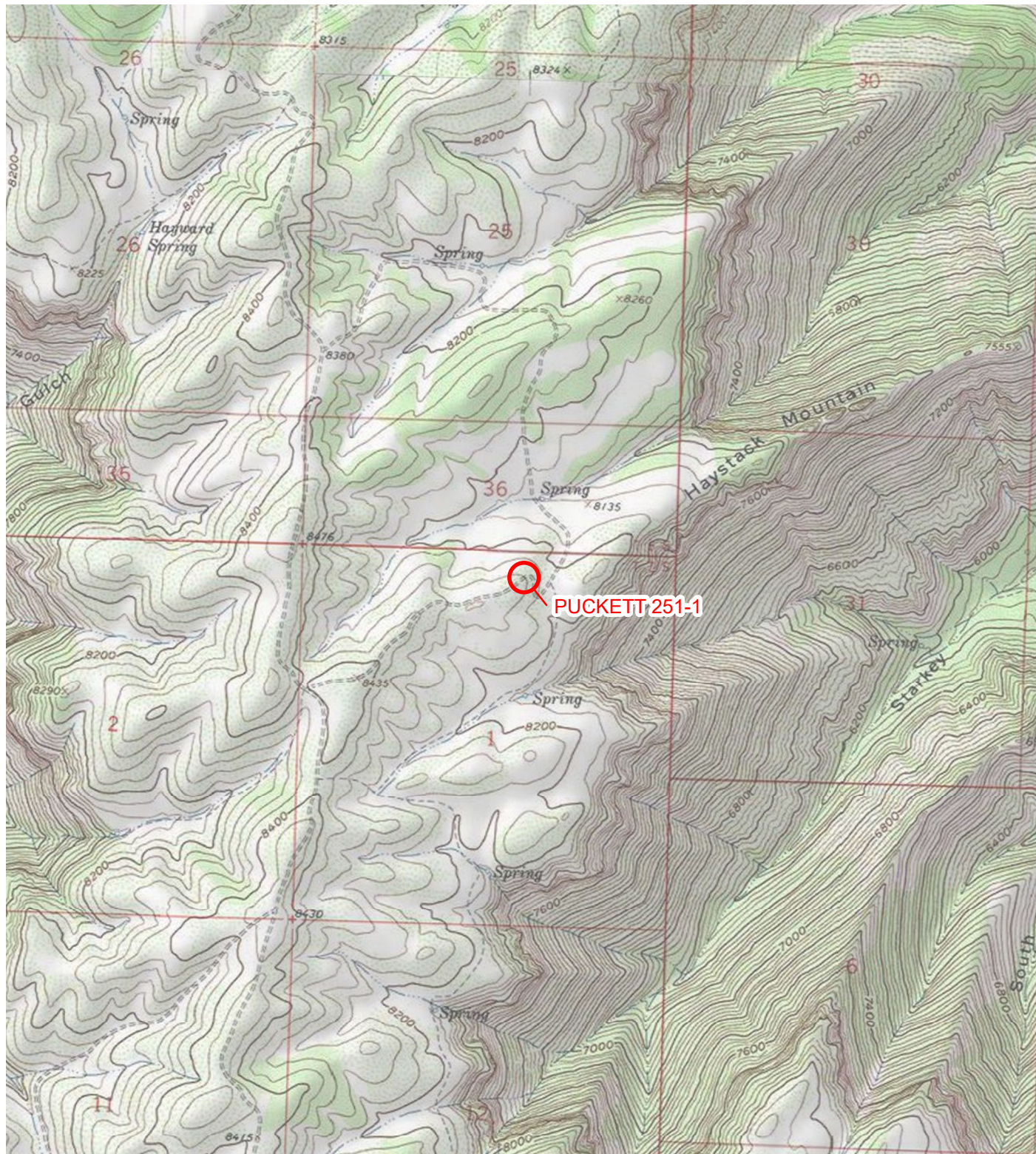


IMAGE COURTESY OF ESRI/USGS

LEGEND

 SITE LOCATION

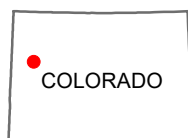
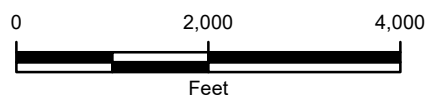


FIGURE 1
SITE LOCATION MAP
PUCKETT 251-1
 NWNE SEC 1-T7S-R97W
 GARFIELD COUNTY, COLORADO
CAERUS OIL AND GAS, LLC





IMAGE COURTESY OF ESRI

LEGEND

- SOIL SAMPLE
- ▲ BACKGROUND SOIL SAMPLE
- EXCAVATION EXTENT

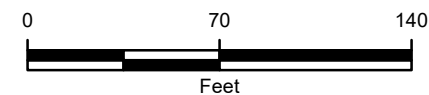


FIGURE 2
SITE MAP
PUCKETT 251-1
NWNE SEC 1-T7S-R97W
GARFIELD COUNTY, COLORADO
CAERUS OIL AND GAS, LLC



TABLE 1
LABORATORY RESULTS SUMMARY TABLE

PUCKETT 251-1
GARFIELD COUNTY, COLORADO
CAERUS OIL GAS, LLC

PARAMETER	COGCC CONCENTRATION LEVELS	UNITS	CONFIRMATION SOIL SAMPLES					BACKGROUND SOIL SAMPLES			
			20201012- PUCKETT 251-1 (WWALL) @ 4'	20201012- PUCKETT 251-1 (NWALL) @ 4'	20201012- PUCKETT 251-1 (EWALL) @ 4'	20201012- PUCKETT 251-1 (SWALL) @ 4'	20201012- PUCKETT 251-1 (BOTTOM) @ 6'	20201012- PUCKETT 251-1 (BG01) @ 6"	20201012- PUCKETT 251-1 (BG02) @ 6"	20201012- PUCKETT 251-1 (BG03) @ 6"	20201012- PUCKETT 251-1 (BG04) @ 6"
Sample Date			10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020	10/12/2020
Sample Depth		FEET	4'	4'	4'	4'	6'	0.5'	0.5'	0.5'	0.5'
Arsenic	0.39	mg/kg	8.24	7.80	7.01	12.6	3.53	13.9	5.29	4.88	3.29
Barium	15,000	mg/kg	296	304	301	221	203	NA	NA	NA	NA
Cadmium	70	mg/kg	0.674	0.867	0.719	ND	ND	NA	NA	NA	NA
Chromium (III)	120,000	mg/kg	38.5	41.0	35.1	35.9	30.8	NA	NA	NA	NA
Chromium (VI)	23	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Copper	3,100	mg/kg	19.0	21.9	22.0	20.4	15.0	NA	NA	NA	NA
Lead	400	mg/kg	17.8	15.4	11.2	14.1	10.2	NA	NA	NA	NA
Mercury	23	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Nickel	1,600	mg/kg	32.2	47.4	25.7	22.1	18.8	NA	NA	NA	NA
Selenium	390	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Silver	390	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Zinc	23,000	mg/kg	65.2	71.9	77.1	59.5	50.1	NA	NA	NA	NA
EC	4.0	mmhos/cm	0.137	0.104	0.122	0.104	0.122	0.0639	0.0973	0.115	0.0709
pH	6 - 9	SU	8.24	8.25	8.38	8.23	7.79	6.49	7.25	6.70	8.78
SAR	12	unitless	0.480	0.330	0.686	0.230	0.920	0.0826	0.102	0.0470	0.0472
TPH-GRO		mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
TPH-DRO		mg/kg	8.73	29.4	10.8	4.24	13.7	NA	NA	NA	NA
TPH	500	mg/kg	8.73	29.4	10.8	4.24	13.7	NA	NA	NA	NA
Benzene	0.17	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Toluene	85	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Ethylbenzene	100	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Total Xylenes	175	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Acenaphthene	1000	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Anthracene	1000	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Benzo(A)anthracene	0.22	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Benzo(B)fluoranthene	0.22	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Benzo(K)fluoranthene	2.2	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Benzo(A)pyrene	0.022	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Chrysene	22	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Dibenzo(A,H)anthracene	0.022	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Fluoranthene	1000	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Fluorene	1000	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Indeno(1,2,3,C,D)pyrene	0.22	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Naphthalene	23	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA
Pyrene	1000	mg/kg	ND	ND	ND	ND	ND	NA	NA	NA	NA

NOTES:
ND - analyte not detected above the stated reporting limit
COGCC - Colorado Oil and Gas Conservation Commission
BOLD - indicates result exceeds the COGCC concentration level
EC- electrical conductivity
mmhos/cm - millimhos per centimeter
NA - not analyzed
SU - standard unit
mg/kg - milligrams per kilogram
SAR - sodium adsorption ratio
-- sample depth not associated with sample



October 23, 2020

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Caerus Oil and Gas

Sample Delivery Group: L1273327
Samples Received: 10/14/2020
Project Number: PUCKETT 251-1
Description: PUCKETT 251-1
Site: PUCKETT 251-1
Report To: Jake Janicek
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



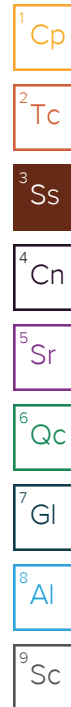
20201012- PUCKETT 251-1 (WWALL) @ 4' L1273327-01 Solid

Collected by
Evan Mason

Collected date/time
10/12/20 08:45

Received date/time
10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561067	1	10/19/20 17:49	10/19/20 17:49	CCE	Mt. Juliet, TN
Calculated Results	WG1560871	1	10/17/20 09:24	10/20/20 01:51	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1561330	1	10/18/20 17:16	10/19/20 20:55	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561493	1	10/19/20 09:33	10/19/20 12:25	KLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1561981	1	10/20/20 13:09	10/20/20 16:04	MMF	Mt. Juliet, TN
Mercury by Method 7471A	WG1561129	1	10/18/20 13:49	10/19/20 11:40	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560871	1	10/17/20 09:24	10/20/20 01:51	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1560873	5	10/17/20 09:29	10/19/20 00:04	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1561394	1	10/17/20 21:42	10/19/20 06:58	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1562727	1	10/17/20 21:42	10/22/20 01:05	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1561264	1	10/18/20 16:35	10/20/20 16:49	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1561699	1	10/20/20 11:47	10/21/20 01:07	JNJ	Mt. Juliet, TN



20201012- PUCKETT 251-1 (NWALL) @ 4' L1273327-02 Solid

Collected by
Evan Mason

Collected date/time
10/12/20 08:55

Received date/time
10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561067	1	10/20/20 02:54	10/20/20 02:54	CCE	Mt. Juliet, TN
Calculated Results	WG1560871	1	10/17/20 09:24	10/20/20 01:54	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1561330	1	10/18/20 17:16	10/19/20 20:57	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561493	1	10/19/20 09:33	10/19/20 12:25	KLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1561981	1	10/20/20 13:09	10/20/20 16:04	MMF	Mt. Juliet, TN
Mercury by Method 7471A	WG1561129	1	10/18/20 13:49	10/19/20 11:42	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560871	1	10/17/20 09:24	10/20/20 01:54	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1560873	5	10/17/20 09:29	10/19/20 00:07	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1561394	1	10/17/20 21:42	10/19/20 07:27	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1562727	1	10/17/20 21:42	10/22/20 01:26	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1561264	1	10/18/20 16:35	10/20/20 17:01	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1561699	1	10/20/20 11:47	10/21/20 03:24	JNJ	Mt. Juliet, TN

20201012- PUCKETT 251-1 (EWALL) @ 4' L1273327-03 Solid

Collected by
Evan Mason

Collected date/time
10/12/20 09:05

Received date/time
10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561067	1	10/19/20 18:24	10/19/20 18:24	CCE	Mt. Juliet, TN
Calculated Results	WG1560871	1	10/17/20 09:24	10/20/20 01:37	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1561330	1	10/18/20 17:16	10/19/20 20:58	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561493	1	10/19/20 09:33	10/19/20 12:25	KLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1561981	1	10/20/20 13:09	10/20/20 16:04	MMF	Mt. Juliet, TN
Mercury by Method 7471A	WG1561129	1	10/18/20 13:49	10/19/20 11:45	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560871	1	10/17/20 09:24	10/20/20 01:37	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1560873	5	10/17/20 09:29	10/18/20 23:47	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1561394	1	10/17/20 21:42	10/19/20 07:49	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1562727	1	10/17/20 21:42	10/22/20 01:46	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1561264	1	10/18/20 16:35	10/20/20 16:36	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1561699	1	10/20/20 11:47	10/21/20 01:30	JNJ	Mt. Juliet, TN

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



20201012- PUCKETT 251-1 (SWALL) @ 4' L1273327-04 Solid

Collected by
Evan Mason

Collected date/time
10/12/20 09:15

Received date/time
10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 02:57	10/20/20 02:57	CCE	Mt. Juliet, TN
Calculated Results	WG1560871	1	10/17/20 09:24	10/20/20 01:56	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1561330	1	10/18/20 17:16	10/19/20 20:59	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561493	1	10/19/20 09:33	10/19/20 12:25	KLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1561981	1	10/20/20 13:09	10/20/20 16:04	MMF	Mt. Juliet, TN
Mercury by Method 7471A	WG1561129	1	10/18/20 13:49	10/19/20 11:47	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560871	1	10/17/20 09:24	10/20/20 01:56	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1560873	5	10/17/20 09:29	10/19/20 00:10	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1561394	1	10/17/20 21:42	10/19/20 08:11	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1562727	1	10/17/20 21:42	10/22/20 02:06	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1561264	1	10/18/20 16:35	10/20/20 17:40	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1561699	1	10/20/20 11:47	10/21/20 04:10	JNJ	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

20201012- PUCKETT 251-1 (BOTTOM) @ 6' L1273327-05 Solid

Collected by
Evan Mason

Collected date/time
10/12/20 09:25

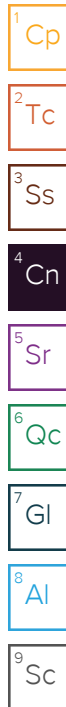
Received date/time
10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 00:03	10/20/20 00:03	CCE	Mt. Juliet, TN
Calculated Results	WG1560871	1	10/17/20 09:24	10/20/20 02:05	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1561330	1	10/18/20 17:16	10/19/20 20:59	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561493	1	10/19/20 09:33	10/19/20 12:25	KLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1561981	1	10/20/20 13:09	10/20/20 16:04	MMF	Mt. Juliet, TN
Mercury by Method 7471A	WG1561129	1	10/18/20 13:49	10/19/20 11:50	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560871	1	10/17/20 09:24	10/20/20 02:05	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1560873	5	10/17/20 09:29	10/19/20 00:21	TM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1561394	1	10/17/20 21:42	10/19/20 08:33	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1562727	1	10/17/20 21:42	10/22/20 02:26	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1561264	1	10/18/20 16:35	10/20/20 15:19	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1561699	1	10/20/20 11:47	10/21/20 01:53	JNJ	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	0.480		1	10/19/2020 17:49	WG1561067

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	38.5		1.00	1	10/20/2020 01:51	WG1560871

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	10/19/2020 20:55	WG1561330

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.24	T8	1	10/19/2020 12:25	WG1561493

Sample Narrative:

L1273327-01 WG1561493: 8.24 at 22.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	137		10.0	1	10/20/2020 16:04	WG1561981

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	10/19/2020 11:40	WG1561129

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	296		0.500	1	10/20/2020 01:51	WG1560871
Cadmium	0.674		0.500	1	10/20/2020 01:51	WG1560871
Chromium	38.5		1.00	1	10/20/2020 01:51	WG1560871
Copper	19.0		2.00	1	10/20/2020 01:51	WG1560871
Lead	17.8		0.500	1	10/20/2020 01:51	WG1560871
Nickel	32.2		2.00	1	10/20/2020 01:51	WG1560871
Selenium	ND		2.00	1	10/20/2020 01:51	WG1560871
Silver	ND		1.00	1	10/20/2020 01:51	WG1560871
Zinc	65.2		5.00	1	10/20/2020 01:51	WG1560871

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.24		1.00	5	10/19/2020 00:04	WG1560873

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	10/19/2020 06:58	WG1561394



Collected date/time: 10/12/20 08:45

L1273327

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	97.3		77.0-120		10/19/2020 06:58	WG1561394

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/22/2020 01:05	WG1562727
Toluene	ND		0.00500	1	10/22/2020 01:05	WG1562727
Ethylbenzene	ND		0.00250	1	10/22/2020 01:05	WG1562727
Total Xylenes	ND		0.00650	1	10/22/2020 01:05	WG1562727
(S) Toluene-d8	108		75.0-131		10/22/2020 01:05	WG1562727
(S) 4-Bromofluorobenzene	94.1		67.0-138		10/22/2020 01:05	WG1562727
(S) 1,2-Dichloroethane-d4	83.5		70.0-130		10/22/2020 01:05	WG1562727

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	8.73		4.00	1	10/20/2020 16:49	WG1561264
(S) <i>o</i> -Terphenyl	49.7		18.0-148		10/20/2020 16:49	WG1561264

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2020 01:07	WG1561699
Acenaphthene	ND		0.00600	1	10/21/2020 01:07	WG1561699
Acenaphthylene	ND		0.00600	1	10/21/2020 01:07	WG1561699
Benzo(a)anthracene	ND	J4	0.00600	1	10/21/2020 01:07	WG1561699
Benzo(a)pyrene	ND		0.00600	1	10/21/2020 01:07	WG1561699
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2020 01:07	WG1561699
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2020 01:07	WG1561699
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2020 01:07	WG1561699
Chrysene	ND		0.00600	1	10/21/2020 01:07	WG1561699
Dibenz(a,h)anthracene	ND	J4	0.00600	1	10/21/2020 01:07	WG1561699
Fluoranthene	ND		0.00600	1	10/21/2020 01:07	WG1561699
Fluorene	ND		0.00600	1	10/21/2020 01:07	WG1561699
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2020 01:07	WG1561699
Naphthalene	ND		0.0200	1	10/21/2020 01:07	WG1561699
Phenanthrene	ND		0.00600	1	10/21/2020 01:07	WG1561699
Pyrene	ND		0.00600	1	10/21/2020 01:07	WG1561699
1-Methylnaphthalene	ND		0.0200	1	10/21/2020 01:07	WG1561699
2-Methylnaphthalene	ND		0.0200	1	10/21/2020 01:07	WG1561699
2-Chloronaphthalene	ND		0.0200	1	10/21/2020 01:07	WG1561699
(S) <i>p</i> -Terphenyl-d14	89.7		23.0-120		10/21/2020 01:07	WG1561699
(S) Nitrobenzene-d5	79.5		14.0-149		10/21/2020 01:07	WG1561699
(S) 2-Fluorobiphenyl	82.7		34.0-125		10/21/2020 01:07	WG1561699



Collected date/time: 10/12/20 08:55

L1273327

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.330		1	10/20/2020 02:54	WG1561067

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	41.0		1.00	1	10/20/2020 01:54	WG1560871

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/19/2020 20:57	WG1561330

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.25	T8	1	10/19/2020 12:25	WG1561493

Sample Narrative:

L1273327-02 WG1561493: 8.25 at 22C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	104		10.0	1	10/20/2020 16:04	WG1561981

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	10/19/2020 11:42	WG1561129

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	304		0.500	1	10/20/2020 01:54	WG1560871
Cadmium	0.867		0.500	1	10/20/2020 01:54	WG1560871
Chromium	41.0		1.00	1	10/20/2020 01:54	WG1560871
Copper	21.9		2.00	1	10/20/2020 01:54	WG1560871
Lead	15.4		0.500	1	10/20/2020 01:54	WG1560871
Nickel	47.4		2.00	1	10/20/2020 01:54	WG1560871
Selenium	ND		2.00	1	10/20/2020 01:54	WG1560871
Silver	ND		1.00	1	10/20/2020 01:54	WG1560871
Zinc	71.9		5.00	1	10/20/2020 01:54	WG1560871

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	7.80		1.00	5	10/19/2020 00:07	WG1560873

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/19/2020 07:27	WG1561394



Collected date/time: 10/12/20 08:55

L1273327

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	97.1		77.0-120		10/19/2020 07:27	WG1561394

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/22/2020 01:26	WG1562727
Toluene	ND		0.00500	1	10/22/2020 01:26	WG1562727
Ethylbenzene	ND		0.00250	1	10/22/2020 01:26	WG1562727
Total Xylenes	ND		0.00650	1	10/22/2020 01:26	WG1562727
(S) <i>Toluene-d8</i>	107		75.0-131		10/22/2020 01:26	WG1562727
(S) <i>4-Bromofluorobenzene</i>	91.2		67.0-138		10/22/2020 01:26	WG1562727
(S) <i>1,2-Dichloroethane-d4</i>	85.9		70.0-130		10/22/2020 01:26	WG1562727

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	29.4		4.00	1	10/20/2020 17:01	WG1561264
(S) <i>o</i> -Terphenyl	49.8		18.0-148		10/20/2020 17:01	WG1561264

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2020 03:24	WG1561699
Acenaphthene	ND		0.00600	1	10/21/2020 03:24	WG1561699
Acenaphthylene	ND		0.00600	1	10/21/2020 03:24	WG1561699
Benzo(a)anthracene	ND	J4	0.00600	1	10/21/2020 03:24	WG1561699
Benzo(a)pyrene	ND		0.00600	1	10/21/2020 03:24	WG1561699
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2020 03:24	WG1561699
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2020 03:24	WG1561699
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2020 03:24	WG1561699
Chrysene	ND		0.00600	1	10/21/2020 03:24	WG1561699
Dibenz(a,h)anthracene	ND	J4	0.00600	1	10/21/2020 03:24	WG1561699
Fluoranthene	ND		0.00600	1	10/21/2020 03:24	WG1561699
Fluorene	ND		0.00600	1	10/21/2020 03:24	WG1561699
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2020 03:24	WG1561699
Naphthalene	ND		0.0200	1	10/21/2020 03:24	WG1561699
Phenanthrene	ND		0.00600	1	10/21/2020 03:24	WG1561699
Pyrene	ND		0.00600	1	10/21/2020 03:24	WG1561699
1-Methylnaphthalene	ND		0.0200	1	10/21/2020 03:24	WG1561699
2-Methylnaphthalene	ND		0.0200	1	10/21/2020 03:24	WG1561699
2-Chloronaphthalene	ND		0.0200	1	10/21/2020 03:24	WG1561699
(S) <i>p</i> -Terphenyl-d14	101		23.0-120		10/21/2020 03:24	WG1561699
(S) Nitrobenzene-d5	85.1		14.0-149		10/21/2020 03:24	WG1561699
(S) <i>2</i> -Fluorobiphenyl	92.8		34.0-125		10/21/2020 03:24	WG1561699



Collected date/time: 10/12/20 09:05

L1273327

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.686		1	10/19/2020 18:24	WG1561067

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	35.1		1.00	1	10/20/2020 01:37	WG1560871

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	10/19/2020 20:58	WG1561330

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.38	T8	1	10/19/2020 12:25	WG1561493

Sample Narrative:

L1273327-03 WG1561493: 8.38 at 21.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	122		10.0	1	10/20/2020 16:04	WG1561981

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	10/19/2020 11:45	WG1561129

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	301	J6	0.500	1	10/20/2020 01:37	WG1560871
Cadmium	0.719		0.500	1	10/20/2020 01:37	WG1560871
Chromium	35.1		1.00	1	10/20/2020 01:37	WG1560871
Copper	22.0		2.00	1	10/20/2020 01:37	WG1560871
Lead	11.2		0.500	1	10/20/2020 01:37	WG1560871
Nickel	25.7		2.00	1	10/20/2020 01:37	WG1560871
Selenium	ND		2.00	1	10/20/2020 01:37	WG1560871
Silver	ND		1.00	1	10/20/2020 01:37	WG1560871
Zinc	77.1	O1	5.00	1	10/20/2020 01:37	WG1560871

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.01		1.00	5	10/18/2020 23:47	WG1560873

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	10/19/2020 07:49	WG1561394



Collected date/time: 10/12/20 09:05

L1273327

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	96.9		77.0-120		10/19/2020 07:49	WG1561394

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/22/2020 01:46	WG1562727
Toluene	ND		0.00500	1	10/22/2020 01:46	WG1562727
Ethylbenzene	ND		0.00250	1	10/22/2020 01:46	WG1562727
Total Xylenes	ND		0.00650	1	10/22/2020 01:46	WG1562727
(S) Toluene-d8	105		75.0-131		10/22/2020 01:46	WG1562727
(S) 4-Bromofluorobenzene	90.3		67.0-138		10/22/2020 01:46	WG1562727
(S) 1,2-Dichloroethane-d4	84.7		70.0-130		10/22/2020 01:46	WG1562727

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	10.8		4.00	1	10/20/2020 16:36	WG1561264
(S) <i>o</i> -Terphenyl	48.5		18.0-148		10/20/2020 16:36	WG1561264

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2020 01:30	WG1561699
Acenaphthene	ND		0.00600	1	10/21/2020 01:30	WG1561699
Acenaphthylene	ND		0.00600	1	10/21/2020 01:30	WG1561699
Benzo(a)anthracene	ND	J4	0.00600	1	10/21/2020 01:30	WG1561699
Benzo(a)pyrene	ND		0.00600	1	10/21/2020 01:30	WG1561699
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2020 01:30	WG1561699
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2020 01:30	WG1561699
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2020 01:30	WG1561699
Chrysene	ND		0.00600	1	10/21/2020 01:30	WG1561699
Dibenz(a,h)anthracene	ND	J4	0.00600	1	10/21/2020 01:30	WG1561699
Fluoranthene	ND		0.00600	1	10/21/2020 01:30	WG1561699
Fluorene	ND		0.00600	1	10/21/2020 01:30	WG1561699
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2020 01:30	WG1561699
Naphthalene	ND		0.0200	1	10/21/2020 01:30	WG1561699
Phenanthrene	ND		0.00600	1	10/21/2020 01:30	WG1561699
Pyrene	ND		0.00600	1	10/21/2020 01:30	WG1561699
1-Methylnaphthalene	ND		0.0200	1	10/21/2020 01:30	WG1561699
2-Methylnaphthalene	ND		0.0200	1	10/21/2020 01:30	WG1561699
2-Chloronaphthalene	ND		0.0200	1	10/21/2020 01:30	WG1561699
(S) <i>p</i> -Terphenyl-d14	104		23.0-120		10/21/2020 01:30	WG1561699
(S) Nitrobenzene-d5	85.5		14.0-149		10/21/2020 01:30	WG1561699
(S) 2-Fluorobiphenyl	93.2		34.0-125		10/21/2020 01:30	WG1561699



Collected date/time: 10/12/20 09:15

L1273327

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.230		1	10/20/2020 02:57	WG1561068

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	35.9		1.00	1	10/20/2020 01:56	WG1560871

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	10/19/2020 20:59	WG1561330

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.23	T8	1	10/19/2020 12:25	WG1561493

Sample Narrative:

L1273327-04 WG1561493: 8.23 at 21.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	104		10.0	1	10/20/2020 16:04	WG1561981

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	10/19/2020 11:47	WG1561129

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	221		0.500	1	10/20/2020 01:56	WG1560871
Cadmium	ND		0.500	1	10/20/2020 01:56	WG1560871
Chromium	35.9		1.00	1	10/20/2020 01:56	WG1560871
Copper	20.4		2.00	1	10/20/2020 01:56	WG1560871
Lead	14.1		0.500	1	10/20/2020 01:56	WG1560871
Nickel	22.1		2.00	1	10/20/2020 01:56	WG1560871
Selenium	ND		2.00	1	10/20/2020 01:56	WG1560871
Silver	ND		1.00	1	10/20/2020 01:56	WG1560871
Zinc	59.5		5.00	1	10/20/2020 01:56	WG1560871

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	12.6		1.00	5	10/19/2020 00:10	WG1560873

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	10/19/2020 08:11	WG1561394



Collected date/time: 10/12/20 09:15

L1273327

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	97.2		77.0-120		10/19/2020 08:11	WG1561394

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/22/2020 02:06	WG1562727
Toluene	ND		0.00500	1	10/22/2020 02:06	WG1562727
Ethylbenzene	ND		0.00250	1	10/22/2020 02:06	WG1562727
Total Xylenes	ND		0.00650	1	10/22/2020 02:06	WG1562727
(S) <i>Toluene-d8</i>	107		75.0-131		10/22/2020 02:06	WG1562727
(S) <i>4-Bromofluorobenzene</i>	92.8		67.0-138		10/22/2020 02:06	WG1562727
(S) <i>1,2-Dichloroethane-d4</i>	83.2		70.0-130		10/22/2020 02:06	WG1562727

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	4.24		4.00	1	10/20/2020 17:40	WG1561264
(S) <i>o</i> -Terphenyl	56.1		18.0-148		10/20/2020 17:40	WG1561264

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2020 04:10	WG1561699
Acenaphthene	ND		0.00600	1	10/21/2020 04:10	WG1561699
Acenaphthylene	ND		0.00600	1	10/21/2020 04:10	WG1561699
Benzo(a)anthracene	ND	J4	0.00600	1	10/21/2020 04:10	WG1561699
Benzo(a)pyrene	ND		0.00600	1	10/21/2020 04:10	WG1561699
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2020 04:10	WG1561699
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2020 04:10	WG1561699
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2020 04:10	WG1561699
Chrysene	ND		0.00600	1	10/21/2020 04:10	WG1561699
Dibenz(a,h)anthracene	ND	J4	0.00600	1	10/21/2020 04:10	WG1561699
Fluoranthene	ND		0.00600	1	10/21/2020 04:10	WG1561699
Fluorene	ND		0.00600	1	10/21/2020 04:10	WG1561699
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2020 04:10	WG1561699
Naphthalene	ND		0.0200	1	10/21/2020 04:10	WG1561699
Phenanthrene	ND		0.00600	1	10/21/2020 04:10	WG1561699
Pyrene	ND		0.00600	1	10/21/2020 04:10	WG1561699
1-Methylnaphthalene	ND		0.0200	1	10/21/2020 04:10	WG1561699
2-Methylnaphthalene	ND		0.0200	1	10/21/2020 04:10	WG1561699
2-Chloronaphthalene	ND		0.0200	1	10/21/2020 04:10	WG1561699
(S) <i>p</i> -Terphenyl-d14	97.5		23.0-120		10/21/2020 04:10	WG1561699
(S) Nitrobenzene-d5	81.1		14.0-149		10/21/2020 04:10	WG1561699
(S) <i>2</i> -Fluorobiphenyl	85.9		34.0-125		10/21/2020 04:10	WG1561699



Collected date/time: 10/12/20 09:25

L1273327

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.920		1	10/20/2020 00:03	WG1561068

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	30.8		1.00	1	10/20/2020 02:05	WG1560871

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/19/2020 20:59	WG1561330

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.79	T8	1	10/19/2020 12:25	WG1561493

Sample Narrative:

L1273327-05 WG1561493: 7.79 at 22.5C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	122		10.0	1	10/20/2020 16:04	WG1561981

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	10/19/2020 11:50	WG1561129

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	203		0.500	1	10/20/2020 02:05	WG1560871
Cadmium	ND		0.500	1	10/20/2020 02:05	WG1560871
Chromium	30.8		1.00	1	10/20/2020 02:05	WG1560871
Copper	15.0		2.00	1	10/20/2020 02:05	WG1560871
Lead	10.2		0.500	1	10/20/2020 02:05	WG1560871
Nickel	18.8		2.00	1	10/20/2020 02:05	WG1560871
Selenium	ND		2.00	1	10/20/2020 02:05	WG1560871
Silver	ND		1.00	1	10/20/2020 02:05	WG1560871
Zinc	50.1		5.00	1	10/20/2020 02:05	WG1560871

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.53		1.00	5	10/19/2020 00:21	WG1560873

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/19/2020 08:33	WG1561394



Collected date/time: 10/12/20 09:25

L1273327

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	97.9		77.0-120		10/19/2020 08:33	WG1561394

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/22/2020 02:26	WG1562727
Toluene	ND		0.00500	1	10/22/2020 02:26	WG1562727
Ethylbenzene	ND		0.00250	1	10/22/2020 02:26	WG1562727
Total Xylenes	ND		0.00650	1	10/22/2020 02:26	WG1562727
(S) <i>Toluene-d8</i>	104		75.0-131		10/22/2020 02:26	WG1562727
(S) <i>4-Bromofluorobenzene</i>	94.2		67.0-138		10/22/2020 02:26	WG1562727
(S) <i>1,2-Dichloroethane-d4</i>	84.3		70.0-130		10/22/2020 02:26	WG1562727

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	13.7		4.00	1	10/20/2020 15:19	WG1561264
(S) <i>o</i> -Terphenyl	43.6		18.0-148		10/20/2020 15:19	WG1561264

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2020 01:53	WG1561699
Acenaphthene	ND		0.00600	1	10/21/2020 01:53	WG1561699
Acenaphthylene	ND		0.00600	1	10/21/2020 01:53	WG1561699
Benzo(a)anthracene	ND	J4	0.00600	1	10/21/2020 01:53	WG1561699
Benzo(a)pyrene	ND		0.00600	1	10/21/2020 01:53	WG1561699
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2020 01:53	WG1561699
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2020 01:53	WG1561699
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2020 01:53	WG1561699
Chrysene	ND		0.00600	1	10/21/2020 01:53	WG1561699
Dibenz(a,h)anthracene	ND	J4	0.00600	1	10/21/2020 01:53	WG1561699
Fluoranthene	ND		0.00600	1	10/21/2020 01:53	WG1561699
Fluorene	ND		0.00600	1	10/21/2020 01:53	WG1561699
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2020 01:53	WG1561699
Naphthalene	ND		0.0200	1	10/21/2020 01:53	WG1561699
Phenanthrene	ND		0.00600	1	10/21/2020 01:53	WG1561699
Pyrene	ND		0.00600	1	10/21/2020 01:53	WG1561699
1-Methylnaphthalene	ND		0.0200	1	10/21/2020 01:53	WG1561699
2-Methylnaphthalene	ND		0.0200	1	10/21/2020 01:53	WG1561699
2-Chloronaphthalene	ND		0.0200	1	10/21/2020 01:53	WG1561699
(S) <i>p</i> -Terphenyl-d14	87.9		23.0-120		10/21/2020 01:53	WG1561699
(S) Nitrobenzene-d5	72.9		14.0-149		10/21/2020 01:53	WG1561699
(S) <i>2</i> -Fluorobiphenyl	74.7		34.0-125		10/21/2020 01:53	WG1561699

Method Blank (MB)

(MB) R3583232-1 10/19/20 20:48

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1273327-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1273327-01 10/19/20 20:55 • (DUP) R3583232-7 10/19/20 20:56

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

L1273331-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1273331-02 10/19/20 21:01 • (DUP) R3583232-8 10/19/20 21:02

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

Laboratory Control Sample (LCS)

(LCS) R3583232-2 10/19/20 20:48

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	23.0	96.0	80.0-120	



L1273327-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1273327-01 10/19/20 12:25 • (DUP) R3583019-3 10/19/20 12:25

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.24	8.24	1	0.000		1

Sample Narrative:

OS: 8.24 at 22.2C

DUP: 8.24 at 22C

Laboratory Control Sample (LCS)

(LCS) R3583019-1 10/19/20 12:25

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.1	101	99.0-101	

Sample Narrative:

LCS: 10.05 at 20.6C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3583533-1 10/20/20 16:04

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

Laboratory Control Sample (LCS)

(LCS) R3583533-2 10/20/20 16:04

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	326	326	100	85.0-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3583106-1 10/19/20 11:22

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3583106-2 10/19/20 11:25

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Mercury	0.500	0.516	103	80.0-120	

L1273411-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1273411-01 10/19/20 11:32 • (MS) R3583106-3 10/19/20 11:35 • (MSD) R3583106-4 10/19/20 11:37

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.500	ND	0.482	0.461	96.5	92.3	1	75.0-125			4.48	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3583269-7 10/20/20 01:31

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.240	0.500
Cadmium	U		0.0810	0.500
Chromium	U		0.250	1.00
Copper	U		0.506	2.00
Lead	U		0.208	0.500
Nickel	U		0.490	2.00
Selenium	U		0.617	2.00
Silver	U		0.228	1.00
Zinc	1.44	J	0.939	5.00

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3583269-8 10/20/20 01:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	101	101	80.0-120	
Cadmium	100	95.6	95.6	80.0-120	
Chromium	100	97.0	97.0	80.0-120	
Copper	100	95.9	95.9	80.0-120	
Lead	100	97.1	97.1	80.0-120	
Nickel	100	100	100	80.0-120	
Selenium	100	94.3	94.3	80.0-120	
Silver	20.0	18.0	89.8	80.0-120	
Zinc	100	98.9	98.9	80.0-120	

L1273327-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1273327-03 10/20/20 01:37 • (MS) R3583269-11 10/20/20 01:45 • (MSD) R3583269-12 10/20/20 01:48

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	301	384	366	82.3	64.8	1	75.0-125		J6	4.65	20
Cadmium	100	0.719	91.0	93.4	90.3	92.6	1	75.0-125			2.52	20
Chromium	100	35.1	127	129	91.4	94.1	1	75.0-125			2.06	20
Copper	100	22.0	113	117	91.4	95.3	1	75.0-125			3.38	20
Lead	100	11.2	108	111	97.2	99.9	1	75.0-125			2.43	20
Nickel	100	25.7	128	130	102	104	1	75.0-125			1.63	20
Selenium	100	ND	89.4	91.8	89.4	91.8	1	75.0-125			2.72	20
Silver	20.0	ND	16.5	17.3	82.6	86.5	1	75.0-125			4.56	20
Zinc	100	77.1	156	158	79.3	80.6	1	75.0-125			0.784	20



Method Blank (MB)

(MB) R3582852-1 10/18/20 23:40

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS)

(LCS) R3582852-2 10/18/20 23:43

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Arsenic	100	89.8	89.8	80.0-120	

⁷Gl

⁸Al

⁹Sc

L1273327-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1273327-03 10/18/20 23:47 • (MS) R3582852-5 10/18/20 23:57 • (MSD) R3582852-6 10/19/20 00:00

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Arsenic	20.0	7.01	91.1	95.1	84.1	88.0	5	75.0-125			4.26	20



Method Blank (MB)

(MB) R3584619-1 10/18/20 15:06

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)	100			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3584619-2 10/18/20 16:09

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)			99.9	77.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



Method Blank (MB)

(MB) R3584445-2 10/21/20 23:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	109			75.0-131
(S) 4-Bromofluorobenzene	93.1			67.0-138
(S) 1,2-Dichloroethane-d4	84.4			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3584445-1 10/21/20 22:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.133	106	70.0-123	
Ethylbenzene	0.125	0.113	90.4	74.0-126	
Toluene	0.125	0.122	97.6	75.0-121	
Xylenes, Total	0.375	0.351	93.6	72.0-127	
(S) Toluene-d8			104	75.0-131	
(S) 4-Bromofluorobenzene			98.1	67.0-138	
(S) 1,2-Dichloroethane-d4			90.9	70.0-130	

L1273409-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1273409-02 10/22/20 05:50 • (MS) R3584445-3 10/22/20 06:30 • (MSD) R3584445-4 10/22/20 06:51

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	1.00	0.0272	0.902	1.02	87.5	99.3	8	10.0-149			12.3	37
Ethylbenzene	1.00	0.520	1.34	1.40	82.0	88.0	8	10.0-160			4.38	38
Toluene	1.00	ND	0.842	0.954	81.4	92.6	8	10.0-156			12.5	38
Xylenes, Total	3.00	8.46	11.0	11.2	84.7	91.3	8	10.0-160			1.80	38
(S) Toluene-d8					102	105		75.0-131				
(S) 4-Bromofluorobenzene					109	103		67.0-138				
(S) 1,2-Dichloroethane-d4					90.0	86.9		70.0-130				



Method Blank (MB)

(MB) R3583691-1 10/20/20 13:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	77.2			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3583691-2 10/20/20 13:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	41.9	83.8	50.0-150	
(S) o-Terphenyl			88.0	18.0-148	

L1274676-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1274676-08 10/20/20 13:50 • (MS) R3583691-3 10/20/20 14:02 • (MSD) R3583691-4 10/20/20 14:15

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) High Fraction	49.8	ND	39.2	40.4	78.7	81.6	1	50.0-150			3.02	20
(S) o-Terphenyl					83.7	83.2		18.0-148				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3583854-2 10/20/20 20:09

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	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
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	87.9			14.0-149
(S) 2-Fluorobiphenyl	97.8			34.0-125
(S) p-Terphenyl-d14	110			23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3583854-1 10/20/20 19:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0890	111	50.0-126	
Acenaphthene	0.0800	0.0940	117	50.0-120	
Acenaphthylene	0.0800	0.0839	105	50.0-120	
Benzo(a)anthracene	0.0800	0.0979	122	45.0-120	J4
Benzo(a)pyrene	0.0800	0.0739	92.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0841	105	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0991	124	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0884	111	49.0-125	
Chrysene	0.0800	0.0965	121	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.101	126	47.0-125	J4
Fluoranthene	0.0800	0.0891	111	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3583854-1 10/20/20 19:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Fluorene	0.0800	0.0933	117	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0985	123	46.0-125	
Naphthalene	0.0800	0.0872	109	50.0-120	
Phenanthrene	0.0800	0.0935	117	47.0-120	
Pyrene	0.0800	0.0962	120	43.0-123	
1-Methylnaphthalene	0.0800	0.0827	103	51.0-121	
2-Methylnaphthalene	0.0800	0.0779	97.4	50.0-120	
2-Chloronaphthalene	0.0800	0.0908	114	50.0-120	
(S) Nitrobenzene-d5			100	14.0-149	
(S) 2-Fluorobiphenyl			112	34.0-125	
(S) p-Terphenyl-d14			127	23.0-120	J1

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



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.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J4	The associated batch QC was outside the established quality control range for accuracy.
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.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



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	LA000356
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

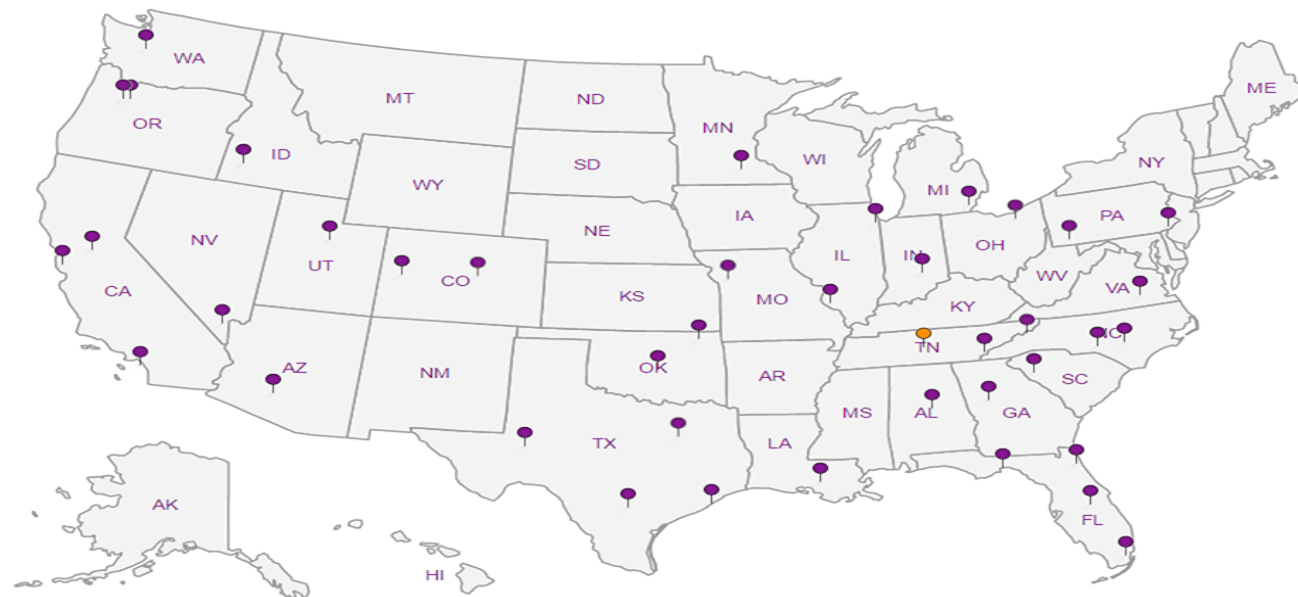
Third Party Federal Accreditations

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

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page ____ of ____

Report to:
jjanicek@caerusoilandgas.com

Email To:
jjanicek@caerusoilandgas.com

Project
Description: Puckett 251-1

City/State
Collected: Piceance, CO

Phone:
Fax:
Client Project #
Puckett 251-1

Lab Project #
Puckett 251-1

Collected by (print):
Evan Mason

Site/Facility ID #
Puckett 251-1

P.O. #
Puckett 251-1

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

Same Day Five Day
Next Day 5 Day (Rad Only)
~~Two Day~~ 10 Day (Rad Only)
Three Day

Date Results Needed

Standard TAT

Immediately
Packed on Ice N ____ Y ____ X

No.
of
Cntrs

TPH - GRO/DRO

BTEX

TABLE 910- PAH's

SAR, EC, pH

TABLE 910- Metals

L #

127337
H028

Acctnum:

Template:

Prelogin:

TSR:

PB:

Shipped Via:

Remarks

Sample # (lab only)

20201012-Puckett 251-1 (NWALL) @ 4'

Grab

SS

4'

10/12/20

845

2

X

X

X

X

X

01

20201012-Puckett 251-1 (NWALL) @ 4'

↓

↓

4'

↓

855

2

X

X

X

X

X

02

20201012-Puckett 251-1 (EWALL) @ 4'

↓

↓

4'

↓

905

2

X

X

X

X

X

03

20201012-Puckett 251-1 (SWALL) @ 4'

↓

↓

4'

↓

915

2

X

X

X

X

X

04

20201012-Puckett 251-1 (BOTTOM) @ 6'

↓

↓

6'

↓

925

2

X

X

X

X

X

05

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

Remarks:

Standard TAT

Samples returned via:

UPS FedEx Courier

Tracking #

1676 2750 5825 / 6501

pH Temp

Flow Other

Sample Receipt Checklist

COC Seal Present/Intact: ☒ 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:

10/13/20

Time:

1130

Received by: (Signature)

Trip Blank Received: Yes ☒ No ☐
HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

10/13/20

Time:

Received by: (Signature)

Temp: 13.3 °C
1.0 + 1.1 = 1.1
Bottles Received: 10

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: 10-14-20 Time: 200

Hold:

Condition:
NCF / OK

October 22, 2020

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Caerus Oil and Gas

Sample Delivery Group: L1273333
Samples Received: 10/14/2020
Project Number: PUCKETT 251-1
Description: PUCKETT 251-1
Site: PUCKETT 251-1
Report To: Jake Janicek
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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20201012-PUCKETT 251-1 (BG01) @ 6" L1273333-01 Solid

Collected by
Evan Mason

Collected date/time
10/12/20 09:45

Received date/time
10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 03:23	10/20/20 03:23	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561781	1	10/19/20 16:20	10/19/20 18:43	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1562691	1	10/21/20 13:48	10/21/20 17:46	MMF	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560550	1	10/16/20 14:38	10/17/20 10:52	EL	Mt. Juliet, TN

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

20201012-PUCKETT 251-1 (BG02) @ 6" L1273333-02 Solid

Collected by
Evan Mason

Collected date/time
10/12/20 10:00

Received date/time
10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 03:26	10/20/20 03:26	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561781	1	10/19/20 16:20	10/19/20 18:43	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1562691	1	10/21/20 13:48	10/21/20 17:46	MMF	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560550	1	10/16/20 14:38	10/17/20 10:59	EL	Mt. Juliet, TN

20201012-PUCKETT 251-1 (BG03) @ 6" L1273333-03 Solid

Collected by
Evan Mason

Collected date/time
10/12/20 10:15

Received date/time
10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 03:28	10/20/20 03:28	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561781	1	10/19/20 16:20	10/19/20 18:43	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1562691	1	10/21/20 13:48	10/21/20 17:46	MMF	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560550	1	10/16/20 14:38	10/17/20 11:02	EL	Mt. Juliet, TN

20201012-PUCKETT 251-1 (BG04) @ 6" L1273333-04 Solid

Collected by
Evan Mason

Collected date/time
10/12/20 10:30

Received date/time
10/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1561068	1	10/20/20 03:31	10/20/20 03:31	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1561781	1	10/19/20 16:20	10/19/20 18:43	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1562691	1	10/21/20 13:48	10/21/20 17:46	MMF	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1560550	1	10/16/20 14:38	10/17/20 11:05	EL	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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0826		1	10/20/2020 03:23	WG1561068

¹ Cp

² Tc

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.49	T8	1	10/19/2020 18:43	WG1561781

³ Ss

⁴ Cn

Sample Narrative:

L1273333-01 WG1561781: 6.49 at 22.6C

⁵ Sr

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	63.9		10.0	1	10/21/2020 17:46	WG1562691

⁶ Qc

⁷ Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg			
Arsenic	13.9		2.00	1	10/17/2020 10:52	WG1560550

⁸ Al

⁹ Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.102		1	10/20/2020 03:26	WG1561068

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.25	<u>T8</u>	1	10/19/2020 18:43	WG1561781

Sample Narrative:

L1273333-02 WG1561781: 7.25 at 22.6C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	97.3		10.0	1	10/21/2020 17:46	WG1562691

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	mg/kg		mg/kg			
Arsenic	5.29		2.00	1	10/17/2020 10:59	WG1560550

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0470		1	10/20/2020 03:28	WG1561068

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.70	<u>T8</u>	1	10/19/2020 18:43	WG1561781

Sample Narrative:

L1273333-03 WG1561781: 6.7 at 22.4C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	115		10.0	1	10/21/2020 17:46	WG1562691

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	mg/kg		mg/kg			
Arsenic	4.88		2.00	1	10/17/2020 11:02	WG1560550

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.0472		1	10/20/2020 03:31	WG1561068

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.78	T8	1	10/19/2020 18:43	WG1561781

Sample Narrative:

L1273333-04 WG1561781: 8.78 at 22.1C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	70.9		10.0	1	10/21/2020 17:46	WG1562691

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	mg/kg		mg/kg			
Arsenic	3.29		2.00	1	10/17/2020 11:05	WG1560550

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1273331-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1273331-02 10/19/20 18:43 • (DUP) R3583205-2 10/19/20 18:43

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.67	8.69	1	0.230		1

Sample Narrative:
OS: 8.67 at 22.3C
DUP: 8.69 at 22.7C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1273333-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1273333-02 10/19/20 18:43 • (DUP) R3583205-3 10/19/20 18:43

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.25	7.24	1	0.138		1

Sample Narrative:
OS: 7.25 at 22.6C
DUP: 7.24 at 22.6C

Laboratory Control Sample (LCS)

(LCS) R3583205-1 10/19/20 18:43

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

Sample Narrative:
LCS: 10.01 at 21.1C



Method Blank (MB)

(MB) R3584073-1 10/21/20 17:46

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1273332-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1273332-01 10/21/20 17:46 • (DUP) R3584073-3 10/21/20 17:46

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	52.6	52.0	1	1.15		20

L1273336-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1273336-01 10/21/20 17:46 • (DUP) R3584073-4 10/21/20 17:46

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	88.4	85.0	1	3.92		20

Laboratory Control Sample (LCS)

(LCS) R3584073-2 10/21/20 17:46

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	326	326	100	85.0-115	

Method Blank (MB)

(MB) R3582797-1 10/17/20 09:58				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Arsenic	U		0.460	2.00

Laboratory Control Sample (LCS)

(LCS) R3582797-2 10/17/20 10:00					
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Arsenic	100	93.8	93.8	80.0-120	

L1273324-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1273324-01 10/17/20 10:03 • (MS) R3582797-5 10/17/20 10:10 • (MSD) R3582797-6 10/17/20 10:13												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Arsenic	100	16.1	111	110	94.7	94.1	1	75.0-125			0.598	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



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.
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

T8	Sample(s) received past/too close to holding time expiration.
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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



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	LA000356
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

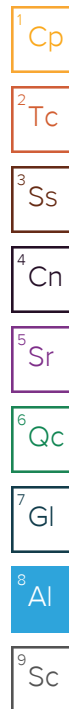
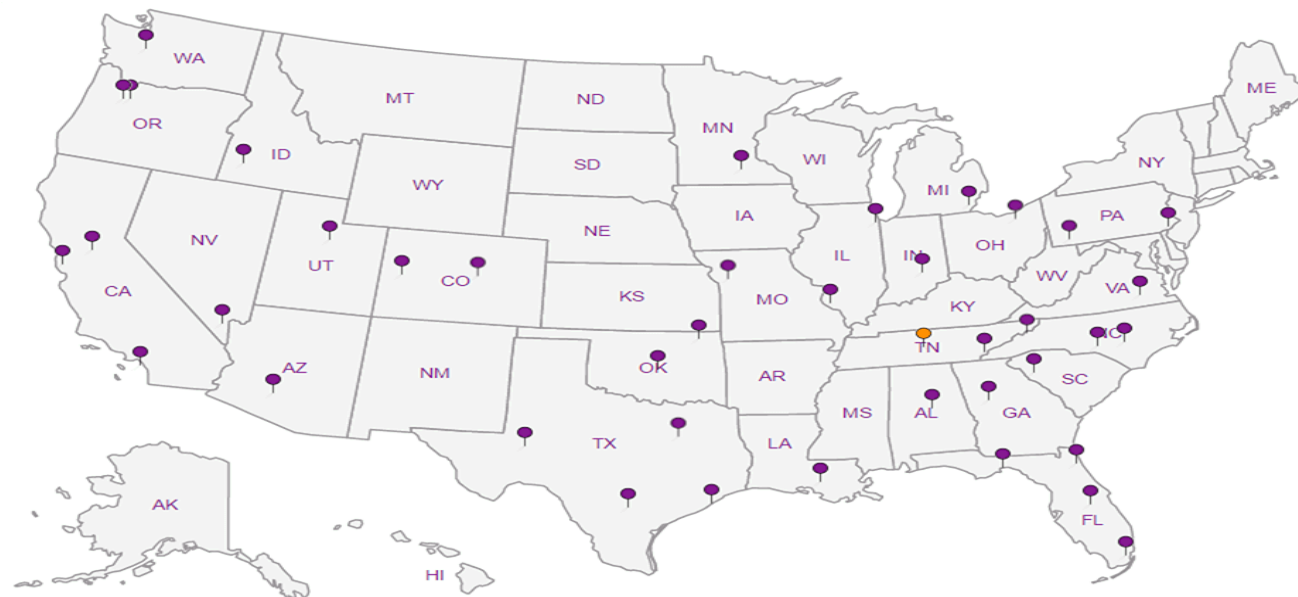
Third Party Federal Accreditations

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

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page ____ of ____



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



L #

H031

Acctnum:

Template:

Prelogin:

TSR:

PB:

Shipped Via:

Remarks

Sample # (lab only)

Report to:

jjanicek@caerusoilandgas.com

Email To:

jjanicek@caerusoilandgas.com

Project

Description: Puckett 251-1

City/State

Collected: Piceance, CO

Phone:

Fax:

Client Project #

Puckett 251-1

Lab Project #

Puckett 251-1

Collected by (print):

Evan Mason

Site/Facility ID #

Puckett 251-1

P.O. #

Puckett 251-1

Collected by (signature):

[Signature]

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

No.
of
Cntrs

Immediately

Packed on Ice N ___ Y ☒

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

20201012-Puckett 251-1 (BG01) @ 6" Grab

SS

10/12/20

945

1

X

X

20201012-Puckett 251-1 (BG02) @ 6" ↓

↓

↓

1000

1

X

X

20201012-Puckett 251-1 (BG03) @ 6" ↓

↓

↓

1015

1

X

X

20201012-Puckett 251-1 (BG04) @ 6" ↓

↓

↓

1030

1

X

X

* Matrix:

SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Standard TAT

Samples returned via:

UPS FedEx Courier

Tracking #

1676 2750 5825 / 6501

pH Temp

Flow Other

Sample Receipt Checklist

COC Seal Present/Intact: ☒ 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)

[Signature]

Date:

10/13/20

Time:

1130

Received by: (Signature)

[Signature]

Trip Blank Received: Yes ☒ No
HCL / MeOH
TBR

Relinquished by: (Signature)

[Signature]

Date:

10/13/20

Time:

1701

Received by: (Signature)

[Signature]

Temp: 13°C
1.0 + 1 = 1.1
Bottles Received: 4

If preservation required by Login: Date/Time

Relinquished by: (Signature)

[Signature]

Date:

10-14-20

Time:

900

Received for lab by: (Signature)

[Signature]

Date: 10-14-20
Time: 900

Hold:

Condition:
NCF / OK