June 23, 2020

Mr. Blair Rollins
Caerus Oil and Gas
143 Diamond Avenue
Parachute, Co 81635

RE: Investigation Report and No Further Action Request
F26 697
COGCC Remediation 15607
Garfield County, Colorado

Mr. Rollins,

Entrada Consulting Group (Entrada) has prepared this Investigation Report and No Further Action Request report for Caerus Oil and Gas (Caerus) in response to the F26 697 release located in Garfield County, Colorado. The pad location coordinates are approximately 39.495303, North latitude, and -108.190499, East longitude.

Entrada was contracted to delineate the release identified at the F26 697 that correspond with Colorado Oil and Gas Conservation Commission (COGCC) Remediation (REM) number 15607. Impacted soil areas were easily identified by odor and varying color of soils. Heavy equipment was used to remove all impacted soils. The duration of the excavation spanned over 2 weeks' time due to the size and difficult access to where the release occurred. During excavation, all soil that was removed was placed on the pad surface, surrounded by a berm, and sampled at the end of delineation.

SOIL ANALYSIS

Soil samples were collected in sample containers appropriate for the specified analyses, sealed, labeled and placed into an ice filled cooler for preservation. Soil samples were submitted to Pace Analytical in Mt. Juliet, TN following chain of custody procedures and analyzed for the following analyses:

- Total Petroleum Hydrocarbons – diesel range organics (TPH-DRO) by U.S. Environmental Protection Agency (EPA) Method 8015;
- TPH-gasoline range organics (GRO) by EPA Method 8015D;
- Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) by EPA Method 8260B; and
- Polycyclic Aromatic Hydrocarbons (PAHs) (COGCC Table 910-1) by EPA Method 8270C;

- pH by EPA Method 9045D;
- Metals (COGCC Table 910) by EPA Method 6010C
    - Mercury by EPA Method 7471B
    - Hexavalent chromium by EPA Method 7196A; and,
    - Trivalent chromium by calculation.
- Electrical conductivity (EC) by U.S. Department of Agriculture (USDA) Method H60;
- Sodium adsorption ratio (SAR) by USDA Method H60.

SOIL ANALYTICAL RESULTS

Soil grab samples from the walls and bottoms were collected with assistance of the track-hoe due to safety precautions within the excavation. Sample locations are demonstrated in **Figure 1**. Stockpiled soil from the excavation were estimated to be approximately 4,500 cubic yards. The stockpile was measured into 5 quadrants and 5 (5pt) composites were collected for each segment at depths from 6-12". During excavation clearance sampling, photoionization detector (PID) samples were collected prior to collection to confirm effectiveness of the excavation. One area of concern was identified after PID results (912ppm) and was scheduled to be removed and sampled after removal. The south east corner wall was removed, and clearance sampled two days after original clearance sampling efforts. Soil analytical results are summarized within **Table 1 – Table 3**. Arsenic was identified within multiple sample results but is within background data within the same geographic area. Background area soil samples have demonstrated naturally occurring arsenic in the soil to above the COGCC Table 910-1 concentration levels.

CONCLUSIONS AND RECOMMENDATIONS

Based upon excavation and soil sampling activities completed at the site and laboratory analytical data presented herein, petroleum hydrocarbon impacts and all other environmental concerns to soil have been demonstrated to be either not present or below the COGCC Table 910-1 allowable concentrations.

From the associated events and requests at the F26 697, Caerus should request No Further Action designation from the COGCC for this site and closure of REM 15607.

We appreciate the opportunity to assist Caerus Oil and Gas. Please contact me (970) 901-9007 if you have any questions.

Sincerely,

ENTRADA CONSULTING GROUP

Matt Kasten
Project Scientist

Attachments:

Figure 1 – Sample Location Map
Figure 2 – Background Area Map
Tables 1, 2, 3 – Soil Data Summary
Laboratory Analytical Reports

LEGEND

- Sample Location

0 100 200 Feet

1 inch = 100 ft

Project No:	020-020
Map By:	NDB
Date:	6/24/2020

F26 696 SITE DIAGRAM
CAERUS OIL AND GAS LLC
SENW SEC 26 T6S R97W 6TH PM
GARFIELD COUNTY, COLORADO

ENTRADA CONSULTING GROUP
330 Grand Avenue, Unit C
Grand Junction, CO 81501
970-579-1015

Figure
1

○ - Well Pad ✳ - Background pad reference ▭ - F26 Pad Location	CAERUS OIL AND GAS LLC	Pad: F26 696 / Mesa 16 Field Diagram Area: Garden Gulch Legal: SENW, Sec. 26, T6S, R97W, 6th PM

TABLE 1
F26 FILL SLOPE SPILL
SOIL ANALYTICAL RESULTS
CAERUS OIL AND GAS LLC
PICEANCE BASIN, COLORADO

PARAMETER	COGCC CONCENTRATION LEVELS	UNITS	F26 POR	F26 Spoil	F26 E BOT 25'	F26 W BOT 15'	F26 N Wall W 12'	F26 N Wall E 21'	F26 N Wall N 21'	F26 S Wall E 18'
Sample Date			6/3/2020	6/3/2020	6/15/2020	6/15/2020	6/15/2020	6/15/2020	6/15/2020	6/15/2020
Sample Matix			Spill	Spill	Spill	Spill	Spill	Spill	Spill	Spill
Arsenic	0.39	mg/kg	10.3	17.7	13.2	10	11.2	13.4	6.89	25.2
Barium	15,000	mg/kg	254	224	295	287	246	240	177	268
Cadmium	70	mg/kg	0.747	0.634	1.2	<0.500	<0.500	1.04	0.639	0.907
Chromium (III)	120,000	mg/kg	32.7	30.9	35.6	39.7	36.7	29.1	28	34.5
Chromium (VI)	23	mg/kg	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	4.58	<2.00
Copper	3,100	mg/kg	20.2	20.8	22.9	18.8	20.4	17.2	19.6	21.6
Lead	400	mg/kg	11.1	13	15.2	14.4	14.1	12.4	12.7	16.1
Mercury	23	mg/kg	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400
Nickel	1,600	mg/kg	26.4	25.2	28.9	23.4	28.9	23.8	21.5	29.5
Selenium	390	mg/kg	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Silver	390	mg/kg	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Zinc	23,000	mg/kg	61.1	62.5	62.7	59.8	60.1	52.6	60.5	66.3
EC	4 or 2x background	mmhos/cm	0.21	0.205	0.189	0.185	0.244	0.13	0.148	0.144
pH	6-9	SU	7.66	7.99	8.35	7.66	8.49	8.34	7.3	8.5
SAR	12	unitless	0.616	0.531	1.01	0.203	1.36	0.363	0.169	0.659
TPH-DRO			1630	708	38.2	239	6.83	75.7	7.71	9.53
TPH-GRO			1270	982	0.263	0.243	<0.100	1.64	<0.101	<0.100
TPH	500	mg/kg	2900	1690	38.463	239.243	<6.93	77.34	<7.811	<9.63
Benzene	0.17	mg/kg	<0.0200	<0.0200	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Toluene	85	mg/kg	<0.100	1.53	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	100	mg/kg	<0.0500	0.224	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250
Total Xylenes	175	mg/kg	15.2	27.8	<0.00650	<0.00650	<0.00650	<0.00650	<0.00650	<0.00650
Acenaphthene	1,000	mg/kg	<0.00600	0.0265	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Anthracene	1,000	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Benz(a)anthracene	0.22	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Benzo(b)fluoranthene	0.22	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Benzo(k)fluoranthene	2.2	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Benzo(a)pyrene	0.022	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Chrysene	22	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Dibenzo(a,h)anthracene	0.022	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Fluoranthene	1,000	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Fluorene	1,000	mg/kg	0.177	0.0704	0.00775	0.00659	<0.00600	<0.00600	<0.00600	<0.00600
Indeno(1,2,3,c,d)pyrene	0.22	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Naphthalene	23	mg/kg	0.574	<0.400	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Pyrene	1,000	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600

Notes:
< - less than the stated reporting limit
Highlight - indicates result exceeds the COGCC concentration level
COGCC - Colorado Oil and Gas Conservation Commission
EC - electrical conductivity
mg/kg - milligrams per kilogram
mmhos/cm - millimhos per centimeter
NA - not analyzed
ND - non detect
SAR - sodium adsorption ratio
SU - standard unit
TPH-GRO - total petroleum hydrocarbons-gasoline range organics
TPH-DRO - total petroleum hydrocarbons-diesel range organics
TPH - combination of TPH-GRO and TPH-DRO

TABLE 2
F26 FILL SLOPE SPILL
SOIL ANALYTICAL RESULTS
CAERUS OIL AND GAS LLC
PICEANCE BASIN, COLORADO

PARAMETER	COGCC CONCENTRATION LEVELS	UNITS	F26 S Wall W 12'	F26 W Wall S 10'	F26 W Wall N 10'	F26 SE Corner	F26 Stock 1	F26 Stock 2	F26 Stock 3	F26 Stock 4
Sample Date			6/15/2020	6/15/2020	6/15/2020	6/17/2020	6/15/2020	6/15/2020	6/15/2020	6/15/2020
Sample Matix			Spill	Spill	Spill	Spill	Spill	Spill	Spill	Spill
Arsenic	0.39	mg/kg	6.97	11.3	7.04	8.83	9	20.8	8.92	10.7
Barium	15,000	mg/kg	258	303	235	328	270	289	268	207
Cadmium	70	mg/kg	1.48	0.649	0.853	0.776	0.773	0.568	0.862	0.636
Chromium (III)	120,000	mg/kg	36.1	33.2	35.2	32.9	42	35.5	34.7	33.3
Chromium (VI)	23	mg/kg	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Copper	3,100	mg/kg	21.5	19.3	20.1	20.4	23.6	22.6	21.4	19.1
Lead	400	mg/kg	13.1	14.2	14.7	12.1	17.6	14.6	15.3	12.1
Mercury	23	mg/kg	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400
Nickel	1,600	mg/kg	27.5	27.3	28.8	24.8	29.9	25.8	29.9	25.7
Selenium	390	mg/kg	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Silver	390	mg/kg	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
Zinc	23,000	mg/kg	66.8	59.4	59.9	56	76	62.1	62.8	58.1
EC	4 or 2x background	mmhos/cm	0.183	0.187	0.213	0.177	0.297	0.211	0.214	0.226
pH	6-9	SU	8.45	8.35	8.63	8.97	8.55	8.7	8.6	8.56
SAR	12	unitless	1	0.871	1.38	0.838	1.01	0.695	0.726	0.778
TPH-DRO			<4.00	4.2	4.35	5.93	118	238	265	68.5
TPH-GRO			<0.100	<0.100	<0.100	<0.100	150	6.7	95.7	80.2
TPH	500	mg/kg	<4.100	<4.300	<4.45	<6.03	268	244.7	360.7	148.7
Benzene	0.17	mg/kg	<0.00100	<0.00100	<0.00100	0.0016	<0.0125	0.00223	<0.0125	0.00508
Toluene	85	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	0.127	0.00682	<0.125	0.022
Ethylbenzene	100	mg/kg	<0.00250	<0.00250	<0.00250	<0.000500	1.25	0.0684	0.921	0.112
Total Xylenes	175	mg/kg	<0.00650	<0.00650	<0.00650	0.00343	6.9	0.0818	0.924	0.103
Acenaphthene	1,000	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Anthracene	1,000	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	0.00715	<0.00600
Benz(a)anthracene	0.22	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Benzo(b)fluoranthene	0.22	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Benzo(k)fluoranthene	2.2	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Benzo(a)pyrene	0.022	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Chrysene	22	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Dibenzo(a,h)anthracene	0.022	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Fluoranthene	1,000	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Fluorene	1,000	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	0.0127	0.0121	0.0204	<0.00600
Indeno(1,2,3,c,d)pyrene	0.22	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600
Naphthalene	23	mg/kg	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200
Pyrene	1,000	mg/kg	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600	<0.00600

Notes:
< - less than the stated reporting limit
Highlight - indicates result exceeds the COGCC concentration level
COGCC - Colorado Oil and Gas Conservation Commission
EC - electrical conductivity
mg/kg - milligrams per kilogram
mmhos/cm - millimhos per centimeter
NA - not analyzed
ND - non detect
SAR - sodium adsorption ratio
SU - standard unit
TPH-GRO - total petroleum hydrocarbons-gasoline range organics
TPH-DRO - total petroleum hydrocarbons-diesel range organics
TPH - combination of TPH-GRO and TPH-DRO

TABLE 3
F26 FILL SLOPE SPILL
SOIL ANALYTICAL RESULTS
CAERUS OIL AND GAS LLC
PICEANCE BASIN, COLORADO

PARAMETER	COGCC CONCENTRATION LEVELS	UNITS	F26 Stock 5	PDC Mesa 16 Background AS-1	PDC Mesa 16 Background AS-2	PDC Mesa 16 Background AS-3	NA	NA	NA	NA
Sample Date			6/15/2020	5/4/2011	5/4/2011	5/4/2011	NA	NA	NA	NA
Sample Matix			Spill	Background	Background	Background	NA	NA	NA	NA
Arsenic	0.39	mg/kg	18.8	23	28	44	NA	NA	NA	NA
Barium	15,000	mg/kg	288	NA	NA	NA	NA	NA	NA	NA
Cadmium	70	mg/kg	0.87	NA	NA	NA	NA	NA	NA	NA
Chromium (III)	120,000	mg/kg	37.1	NA	NA	NA	NA	NA	NA	NA
Chromium (VI)	23	mg/kg	<2.00	NA	NA	NA	NA	NA	NA	NA
Copper	3,100	mg/kg	25.7	NA	NA	NA	NA	NA	NA	NA
Lead	400	mg/kg	18.4	NA	NA	NA	NA	NA	NA	NA
Mercury	23	mg/kg	<0.0400	NA	NA	NA	NA	NA	NA	NA
Nickel	1,600	mg/kg	33.7	NA	NA	NA	NA	NA	NA	NA
Selenium	390	mg/kg	<2.00	NA	NA	NA	NA	NA	NA	NA
Silver	390	mg/kg	<1.00	NA	NA	NA	NA	NA	NA	NA
Zinc	23,000	mg/kg	71.6	NA	NA	NA	NA	NA	NA	NA
EC	4 or 2x background	mmhos/cm	0.23	NA	NA	NA	NA	NA	NA	NA
pH	6-9	SU	8.49	NA	NA	NA	NA	NA	NA	NA
SAR	12	unitless	0.607	NA	NA	NA	NA	NA	NA	NA
TPH-DRO			220	NA	NA	NA	NA	NA	NA	NA
TPH-GRO			90	NA	NA	NA	NA	NA	NA	NA
TPH	500	mg/kg	310	NA	NA	NA	NA	NA	NA	NA
Benzene	0.17	mg/kg	<0.0125	NA	NA	NA	NA	NA	NA	NA
Toluene	85	mg/kg	<0.125	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100	mg/kg	0.733	NA	NA	NA	NA	NA	NA	NA
Total Xylenes	175	mg/kg	0.827	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	1,000	mg/kg	0.00627	NA	NA	NA	NA	NA	NA	NA
Anthracene	1,000	mg/kg	0.00792	NA	NA	NA	NA	NA	NA	NA
Benz(a)anthracene	0.22	mg/kg	<0.00600	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.22	mg/kg	<0.00600	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	2.2	mg/kg	<0.00600	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.022	mg/kg	<0.00600	NA	NA	NA	NA	NA	NA	NA
Chrysene	22	mg/kg	<0.00600	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.022	mg/kg	<0.00600	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	1,000	mg/kg	<0.00600	NA	NA	NA	NA	NA	NA	NA
Fluorene	1,000	mg/kg	0.0285	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3,c,d)pyrene	0.22	mg/kg	<0.00600	NA	NA	NA	NA	NA	NA	NA
Naphthalene	23	mg/kg	<0.0200	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,000	mg/kg	<0.00600	NA	NA	NA	NA	NA	NA	NA

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TPH-GRO - total petroleum hydrocarbons-gasoline range organics
TPH-DRO - total petroleum hydrocarbons-diesel range organics
TPH - combination of TPH-GRO and TPH-DRO

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

June 12, 2020

Caerus Oil and Gas

Sample Delivery Group:	L1225549
Samples Received:	06/04/2020
Project Number:	
Description:	F26 Fill Slope Spill

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

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

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20200603-F26 POR L1225549-01 Solid

Collected by: Blair K Rollins
Collected date/time: 06/03/20 11:00
Received date/time: 06/04/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1486400	1	06/09/20 14:27	06/09/20 14:27	EL	Mt. Juliet, TN
Calculated Results	WG1488339	1	06/07/20 08:57	06/10/20 17:06	KEG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1488608	1	06/09/20 19:00	06/10/20 17:06	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1488474	1	06/08/20 16:48	06/09/20 09:45	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1489254	1	06/09/20 22:00	06/09/20 23:30	CAT	Mt. Juliet, TN
Mercury by Method 7471A	WG1488626	1	06/08/20 09:37	06/08/20 18:38	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1488339	1	06/07/20 08:57	06/08/20 14:56	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1488153	250	06/05/20 16:00	06/06/20 19:33	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1488504	20	06/05/20 16:00	06/07/20 18:38	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1489750	10	06/09/20 19:30	06/10/20 06:53	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1489751	1	06/10/20 06:19	06/10/20 14:30	AAT	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1489751	20	06/10/20 06:19	06/10/20 22:34	AAT	Mt. Juliet, TN

20200603-F26 SPOIL L1225549-02 Solid

Collected by: Blair K Rollins
Collected date/time: 06/03/20 12:15
Received date/time: 06/04/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1486400	1	06/09/20 14:30	06/09/20 14:30	EL	Mt. Juliet, TN
Calculated Results	WG1488339	1	06/07/20 08:57	06/10/20 17:09	KEG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1488608	1	06/09/20 19:00	06/10/20 17:09	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1488474	1	06/08/20 16:48	06/09/20 09:45	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1489254	1	06/09/20 22:00	06/09/20 23:30	CAT	Mt. Juliet, TN
Mercury by Method 7471A	WG1488626	1	06/08/20 09:37	06/08/20 18:40	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1488339	1	06/07/20 08:57	06/08/20 15:28	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1488153	250	06/05/20 16:00	06/06/20 19:55	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1488504	20	06/05/20 16:00	06/07/20 18:57	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1489750	20	06/09/20 19:30	06/10/20 23:51	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1489751	1	06/10/20 06:19	06/10/20 14:53	AAT	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1489751	20	06/10/20 06:19	06/11/20 08:14	AAT	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	0.616		1	06/09/2020 14:27	WG1486400

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	32.7		1.00	1	06/10/2020 17:06	WG1488339

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	06/10/2020 17:06	WG1488608

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.66	J3 T8	1	06/09/2020 09:45	WG1488474

Sample Narrative:

L1225549-01 WG1488474: 7.66 at 23.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	210		10.0	1	06/09/2020 23:30	WG1489254

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/08/2020 18:38	WG1488626

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	10.3		2.00	1	06/08/2020 14:56	WG1488339
Barium	254	O1	0.500	1	06/08/2020 14:56	WG1488339
Cadmium	0.747		0.500	1	06/08/2020 14:56	WG1488339
Chromium	32.7	O1	1.00	1	06/08/2020 14:56	WG1488339
Copper	20.2		2.00	1	06/08/2020 14:56	WG1488339
Lead	11.1		0.500	1	06/08/2020 14:56	WG1488339
Nickel	26.4		2.00	1	06/08/2020 14:56	WG1488339
Selenium	ND		2.00	1	06/08/2020 14:56	WG1488339
Silver	ND		1.00	1	06/08/2020 14:56	WG1488339
Zinc	61.1		5.00	1	06/08/2020 14:56	WG1488339

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	1270		25.0	250	06/06/2020 19:33	WG1488153
(S) a,a,a-Trifluorotoluene(FID)	*82.9*		*77.0-120*		*06/06/2020 19:33*	WG1488153

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.0200	20	06/07/2020 18:38	WG1488504
Toluene	ND		0.100	20	06/07/2020 18:38	WG1488504
Ethylbenzene	ND		0.0500	20	06/07/2020 18:38	WG1488504
Total Xylenes	15.2		0.130	20	06/07/2020 18:38	WG1488504
(S) Toluene-d8	*85.3*		*75.0-131*		*06/07/2020 18:38*	WG1488504
(S) 4-Bromofluorobenzene	*95.0*		*67.0-138*		*06/07/2020 18:38*	WG1488504
(S) 1,2-Dichloroethane-d4	*115*		*70.0-130*		*06/07/2020 18:38*	WG1488504

Sample Narrative:

L1225549-01 WG1488504: Non-target compounds too high to run at a lower dilution.

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	1630		40.0	10	06/10/2020 06:53	WG1489750
(S) o-Terphenyl	*97.4*		*18.0-148*		*06/10/2020 06:53*	WG1489750

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	06/10/2020 14:30	WG1489751
Acenaphthene	ND		0.120	20	06/10/2020 22:34	WG1489751
Acenaphthylene	ND		0.120	20	06/10/2020 22:34	WG1489751
Benzo(a)anthracene	ND		0.00600	1	06/10/2020 14:30	WG1489751
Benzo(a)pyrene	ND		0.00600	1	06/10/2020 14:30	WG1489751
Benzo(b)fluoranthene	ND		0.00600	1	06/10/2020 14:30	WG1489751
Benzo(g,h,i)perylene	ND		0.00600	1	06/10/2020 14:30	WG1489751
Benzo(k)fluoranthene	ND		0.00600	1	06/10/2020 14:30	WG1489751
Chrysene	ND		0.00600	1	06/10/2020 14:30	WG1489751
Dibenz(a,h)anthracene	ND		0.00600	1	06/10/2020 14:30	WG1489751
Fluoranthene	ND		0.00600	1	06/10/2020 14:30	WG1489751
Fluorene	0.177		0.120	20	06/10/2020 22:34	WG1489751
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/10/2020 14:30	WG1489751
Naphthalene	0.574		0.400	20	06/10/2020 22:34	WG1489751
Phenanthrene	0.0740		0.00600	1	06/10/2020 14:30	WG1489751
Pyrene	ND		0.00600	1	06/10/2020 14:30	WG1489751
1-Methylnaphthalene	1.52		0.400	20	06/10/2020 22:34	WG1489751
2-Methylnaphthalene	3.41		0.400	20	06/10/2020 22:34	WG1489751
2-Chloronaphthalene	ND		0.400	20	06/10/2020 22:34	WG1489751
(S) p-Terphenyl-d14	*62.5*	J7	*23.0-120*		*06/10/2020 22:34*	WG1489751
(S) p-Terphenyl-d14	*87.2*		*23.0-120*		*06/10/2020 14:30*	WG1489751
(S) Nitrobenzene-d5	*0.000*	J2	*14.0-149*		*06/10/2020 14:30*	WG1489751
(S) Nitrobenzene-d5	*0.000*	J7	*14.0-149*		*06/10/2020 22:34*	WG1489751
(S) 2-Fluorobiphenyl	*0.000*	J2	*34.0-125*		*06/10/2020 14:30*	WG1489751
(S) 2-Fluorobiphenyl	*71.0*	J7	*34.0-125*		*06/10/2020 22:34*	WG1489751

Sample Narrative:

L1225549-01 WG1489751: Surrogate failure due to matrix interference

L1225549-01 WG1489751: IS/SURR failed on lower dilution.

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.531		1	06/09/2020 14:30	WG1486400

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	30.9		1.00	1	06/10/2020 17:09	WG1488339

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	06/10/2020 17:09	WG1488608

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.99	T8	1	06/09/2020 09:45	WG1488474

Sample Narrative:

L1225549-02 WG1488474: 7.99 at 23.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	205		10.0	1	06/09/2020 23:30	WG1489254

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/08/2020 18:40	WG1488626

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	17.7		2.00	1	06/08/2020 15:28	WG1488339
Barium	224		0.500	1	06/08/2020 15:28	WG1488339
Cadmium	0.634		0.500	1	06/08/2020 15:28	WG1488339
Chromium	30.9		1.00	1	06/08/2020 15:28	WG1488339
Copper	20.8		2.00	1	06/08/2020 15:28	WG1488339
Lead	13.0		0.500	1	06/08/2020 15:28	WG1488339
Nickel	25.2		2.00	1	06/08/2020 15:28	WG1488339
Selenium	ND		2.00	1	06/08/2020 15:28	WG1488339
Silver	ND		1.00	1	06/08/2020 15:28	WG1488339
Zinc	62.5		5.00	1	06/08/2020 15:28	WG1488339

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	982		25.0	250	06/06/2020 19:55	WG1488153
(S) a,a,a-Trifluorotoluene(FID)	*85.4*		*77.0-120*		*06/06/2020 19:55*	WG1488153

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.0200	20	06/07/2020 18:57	WG1488504
Toluene	1.53		0.100	20	06/07/2020 18:57	WG1488504
Ethylbenzene	0.224		0.0500	20	06/07/2020 18:57	WG1488504
Total Xylenes	27.8		0.130	20	06/07/2020 18:57	WG1488504
(S) Toluene-d8	*98.6*		*75.0-131*		*06/07/2020 18:57*	WG1488504
(S) 4-Bromofluorobenzene	*101*		*67.0-138*		*06/07/2020 18:57*	WG1488504
(S) 1,2-Dichloroethane-d4	*114*		*70.0-130*		*06/07/2020 18:57*	WG1488504

Sample Narrative:

L1225549-02 WG1488504: Non-target compounds too high to run at a lower dilution.

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	708		80.0	20	06/10/2020 23:51	WG1489750
(S) o-Terphenyl	*0.000*	J7	*18.0-148*		*06/10/2020 23:51*	WG1489750

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	06/10/2020 14:53	WG1489751
Acenaphthene	0.0265		0.00600	1	06/10/2020 14:53	WG1489751
Acenaphthylene	ND		0.00600	1	06/10/2020 14:53	WG1489751
Benzo(a)anthracene	ND		0.00600	1	06/10/2020 14:53	WG1489751
Benzo(a)pyrene	ND		0.00600	1	06/10/2020 14:53	WG1489751
Benzo(b)fluoranthene	ND		0.00600	1	06/10/2020 14:53	WG1489751
Benzo(g,h,i)perylene	ND		0.00600	1	06/10/2020 14:53	WG1489751
Benzo(k)fluoranthene	ND		0.00600	1	06/10/2020 14:53	WG1489751
Chrysene	ND		0.00600	1	06/10/2020 14:53	WG1489751
Dibenz(a,h)anthracene	ND		0.00600	1	06/10/2020 14:53	WG1489751
Fluoranthene	ND		0.00600	1	06/10/2020 14:53	WG1489751
Fluorene	0.0704		0.00600	1	06/10/2020 14:53	WG1489751
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/10/2020 14:53	WG1489751
Naphthalene	ND		0.400	20	06/11/2020 08:14	WG1489751
Phenanthrene	0.0316		0.00600	1	06/10/2020 14:53	WG1489751
Pyrene	ND		0.00600	1	06/10/2020 14:53	WG1489751
1-Methylnaphthalene	0.587		0.400	20	06/11/2020 08:14	WG1489751
2-Methylnaphthalene	1.53		0.400	20	06/11/2020 08:14	WG1489751
2-Chloronaphthalene	ND		0.0200	1	06/10/2020 14:53	WG1489751
(S) p-Terphenyl-d14	*60.1*		*23.0-120*		*06/10/2020 14:53*	WG1489751
(S) p-Terphenyl-d14	*58.4*	J7	*23.0-120*		*06/11/2020 08:14*	WG1489751
(S) Nitrobenzene-d5	*0.000*	J7	*14.0-149*		*06/11/2020 08:14*	WG1489751
(S) Nitrobenzene-d5	*0.000*	J2	*14.0-149*		*06/10/2020 14:53*	WG1489751
(S) 2-Fluorobiphenyl	*72.7*		*34.0-125*		*06/10/2020 14:53*	WG1489751
(S) 2-Fluorobiphenyl	*67.7*	J7	*34.0-125*		*06/11/2020 08:14*	WG1489751

Sample Narrative:

L1225549-02 WG1489751: Surrogate failure due to matrix interference

Method Blank (MB)

(MB) R3537228-1 06/10/20 16:59

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

Original Sample (OS) • Duplicate (DUP)

(OS) • (DUP) R3537228-3 06/10/20 17:01

Analyte	Original Result	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent		5.79	1	0.683		20

Original Sample (OS) • Duplicate (DUP)

(OS) • (DUP) R3537228-8 06/10/20 17:28

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

Laboratory Control Sample (LCS)

(LCS) R3537228-2 06/10/20 16:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium,Hexavalent	24.0	21.9	91.3	80.0-120	

Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) • (MS) R3537228-4 06/10/20 17:11 • (MSD) R3537228-5 06/10/20 17:11

Analyte	Spike Amount mg/kg	Original Result	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		16.9	16.7	84.3	83.4	1	75.0-125			1.10	20

Original Sample (OS) • Matrix Spike (MS)

(OS) • (MS) R3537228-6 06/10/20 17:12

Analyte	Spike Amount mg/kg	Original Result	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chromium,Hexavalent	651		625	96.0	50	75.0-125	

L1225549-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1225549-01 06/09/20 09:45 • (DUP) R3536500-2 06/09/20 09:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.66	7.74	1	1.04	J3	1

Sample Narrative:

OS: 7.66 at 23.7C

DUP: 7.74 at 23.7C

L1225915-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1225915-02 06/09/20 09:45 • (DUP) R3536500-3 06/09/20 09:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.14	8.08	1	0.740		1

Sample Narrative:

OS: 8.14 at 23.3C

DUP: 8.08 at 23.3C

Laboratory Control Sample (LCS)

(LCS) R3536500-1 06/09/20 09:45

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: 10.02 at 23.5C

Method Blank (MB)

(MB) R3536803-1 06/09/20 23:30

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

L1225549-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1225549-01 06/09/20 23:30 • (DUP) R3536803-3 06/09/20 23:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	210	209	1	0.717		20

L1226332-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1226332-01 06/09/20 23:30 • (DUP) R3536803-4 06/09/20 23:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	634	598	1	5.84		20

Laboratory Control Sample (LCS)

(LCS) R3536803-2 06/09/20 23:30

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	445	442	99.3	85.0-115	

Method Blank (MB)

(MB) R3536373-1 06/08/20 18:10

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

Laboratory Control Sample (LCS)

(LCS) R3536373-2 06/08/20 18:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.446	89.2	80.0-120	

Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) • (MS) R3536373-3 06/08/20 18:18 • (MSD) R3536373-4 06/08/20 18:20

Analyte	Spike Amount mg/kg	Original Result	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.500		0.442	0.424	83.2	79.6	1	75.0-125			4.13	20

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

Method Blank (MB)

(MB) R3536363-1 06/08/20 14:51

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		1.00	2.00
Barium	U		0.250	0.500
Cadmium	U		0.250	0.500
Chromium	U		0.500	1.00
Copper	U		1.00	2.00
Lead	U		0.250	0.500
Nickel	U		1.00	2.00
Selenium	U		1.00	2.00
Silver	U		0.500	1.00
Zinc	U		2.50	5.00

Laboratory Control Sample (LCS)

(LCS) R3536363-2 06/08/20 14:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	97.7	97.7	80.0-120	
Barium	100	103	103	80.0-120	
Cadmium	100	98.6	98.6	80.0-120	
Chromium	100	101	101	80.0-120	
Copper	100	102	102	80.0-120	
Lead	100	102	102	80.0-120	
Nickel	100	102	102	80.0-120	
Selenium	100	101	101	80.0-120	
Silver	20.0	19.2	96.2	80.0-120	
Zinc	100	99.8	99.8	80.0-120	

L1225549-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1225549-01 06/08/20 14:56 • (MS) R3536363-5 06/08/20 15:04 • (MSD) R3536363-6 06/08/20 15:07

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	10.3	106	114	95.7	104	1	75.0-125			7.60	20
Barium	100	254	360	375	106	121	1	75.0-125			4.33	20
Cadmium	100	0.747	97.9	99.8	97.1	99.0	1	75.0-125			1.91	20
Chromium	100	32.7	127	128	94.5	95.5	1	75.0-125			0.756	20
Copper	100	20.2	120	121	99.9	101	1	75.0-125			0.797	20
Lead	100	11.1	117	119	105	108	1	75.0-125			1.88	20
Nickel	100	26.4	134	138	107	111	1	75.0-125			2.89	20

L1225549-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1225549-01 06/08/20 14:56 • (MS) R3536363-5 06/08/20 15:04 • (MSD) R3536363-6 06/08/20 15:07

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 %
Selenium	100	ND	99.5	101	99.5	101	1	75.0-125			1.52	20
Silver	20.0	ND	18.3	18.8	91.6	94.1	1	75.0-125			2.78	20
Zinc	100	61.1	153	159	92.0	97.6	1	75.0-125			3.65	20

Method Blank (MB)

(MB) R3536582-3 06/06/20 13:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0496	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*94.7*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3536582-2 06/06/20 12:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.65	84.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*99.7*	*77.0-120*	

Method Blank (MB)

(MB) R3536160-3 06/07/20 11:28

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	*99.7*			*75.0-131*
(S) 4-Bromofluorobenzene	*94.4*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*

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

(LCS) R3536160-1 06/07/20 10:12 • (LCSD) R3536160-2 06/07/20 10:31

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	0.117	0.116	93.6	92.8	70.0-123			0.858	20
Ethylbenzene	0.125	0.110	0.107	88.0	85.6	74.0-126			2.76	20
Toluene	0.125	0.123	0.118	98.4	94.4	75.0-121			4.15	20
Xylenes, Total	0.375	0.332	0.318	88.5	84.8	72.0-127			4.31	20
(S) Toluene-d8				*100*	*98.4*	*75.0-131*				
(S) 4-Bromofluorobenzene				*103*	*97.8*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*116*	*116*	*70.0-130*				

Method Blank (MB)

(MB) R3536883-1 06/10/20 02:26

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	*77.9*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3536883-2 06/10/20 02:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	39.7	79.4	50.0-150	
(S) o-Terphenyl			*98.6*	*18.0-148*	

Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) • (MS) R3536883-3 06/10/20 03:30 • (MSD) R3536883-4 06/10/20 03:42

Analyte	Spike Amount mg/kg	Original Result	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		37.9	34.5	76.1	69.4	1	50.0-150			9.39	20
(S) o-Terphenyl					*91.0*	*81.6*		*18.0-148*				

Method Blank (MB)

(MB) R3537303-2 06/10/20 13:24

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	*96.2*			*14.0-149*
(S) 2-Fluorobiphenyl	*84.5*			*34.0-125*
(S) p-Terphenyl-d14	*85.0*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3537303-1 06/10/20 13:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0684	85.5	50.0-126	
Acenaphthene	0.0800	0.0695	86.9	50.0-120	
Acenaphthylene	0.0800	0.0719	89.9	50.0-120	
Benzo(a)anthracene	0.0800	0.0732	91.5	45.0-120	
Benzo(a)pyrene	0.0800	0.0627	78.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0645	80.6	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0619	77.4	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0701	87.6	49.0-125	
Chrysene	0.0800	0.0683	85.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0675	84.4	47.0-125	
Fluoranthene	0.0800	0.0690	86.3	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3537303-1 06/10/20 13:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0706	88.3	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0636	79.5	46.0-125	
Naphthalene	0.0800	0.0639	79.9	50.0-120	
Phenanthrene	0.0800	0.0642	80.3	47.0-120	
Pyrene	0.0800	0.0701	87.6	43.0-123	
1-Methylnaphthalene	0.0800	0.0673	84.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0673	84.1	50.0-120	
2-Chloronaphthalene	0.0800	0.0668	83.5	50.0-120	
(S) Nitrobenzene-d5			*96.5*	*14.0-149*	
(S) 2-Fluorobiphenyl			*88.2*	*34.0-125*	
(S) p-Terphenyl-d14			*83.0*	*23.0-120*	

Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) • (MS) R3537303-3 06/10/20 16:21 • (MSD) R3537303-4 06/10/20 16:43

Analyte	Spike Amount mg/kg	Original Result	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0796		0.0587	0.0593	73.7	74.5	1	10.0-145			1.02	30
Acenaphthene	0.0796		0.0580	0.0597	72.9	75.0	1	14.0-127			2.89	27
Acenaphthylene	0.0796		0.0599	0.0612	75.3	76.9	1	21.0-124			2.15	25
Benzo(a)anthracene	0.0796		0.0642	0.0646	80.7	81.2	1	10.0-139			0.621	30
Benzo(a)pyrene	0.0796		0.0586	0.0581	73.6	73.0	1	10.0-141			0.857	31
Benzo(b)fluoranthene	0.0796		0.0552	0.0551	69.3	69.2	1	10.0-140			0.181	36
Benzo(g,h,i)perylene	0.0796		0.0553	0.0547	66.6	65.9	1	10.0-140			1.09	33
Benzo(k)fluoranthene	0.0796		0.0573	0.0563	72.0	70.7	1	10.0-137			1.76	31
Chrysene	0.0796		0.0606	0.0616	76.1	77.4	1	10.0-145			1.64	30
Dibenz(a,h)anthracene	0.0796		0.0604	0.0602	75.9	75.6	1	10.0-132			0.332	31
Fluoranthene	0.0796		0.0545	0.0543	68.5	68.2	1	10.0-153			0.368	33
Fluorene	0.0796		0.0586	0.0592	73.6	74.4	1	11.0-130			1.02	29
Indeno(1,2,3-cd)pyrene	0.0796		0.0569	0.0554	71.5	69.6	1	10.0-137			2.67	32
Naphthalene	0.0796		0.0634	0.0595	79.6	74.7	1	10.0-135			6.35	27
Phenanthrene	0.0796		0.0542	0.0545	68.1	68.5	1	10.0-144			0.552	31
Pyrene	0.0796		0.0648	0.0655	81.4	82.3	1	10.0-148			1.07	35
1-Methylnaphthalene	0.0796		0.0605	0.0629	76.0	79.0	1	10.0-142			3.89	28
2-Methylnaphthalene	0.0796		0.0604	0.0615	75.9	77.3	1	10.0-137			1.80	28
2-Chloronaphthalene	0.0796		0.0551	0.0573	69.2	72.0	1	29.0-120			3.91	24
(S) Nitrobenzene-d5					*84.5*	*89.9*		*14.0-149*				
(S) 2-Fluorobiphenyl					*75.8*	*79.2*		*34.0-125*				
(S) p-Terphenyl-d14					*77.1*	*81.7*		*23.0-120*				

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.
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.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
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.

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

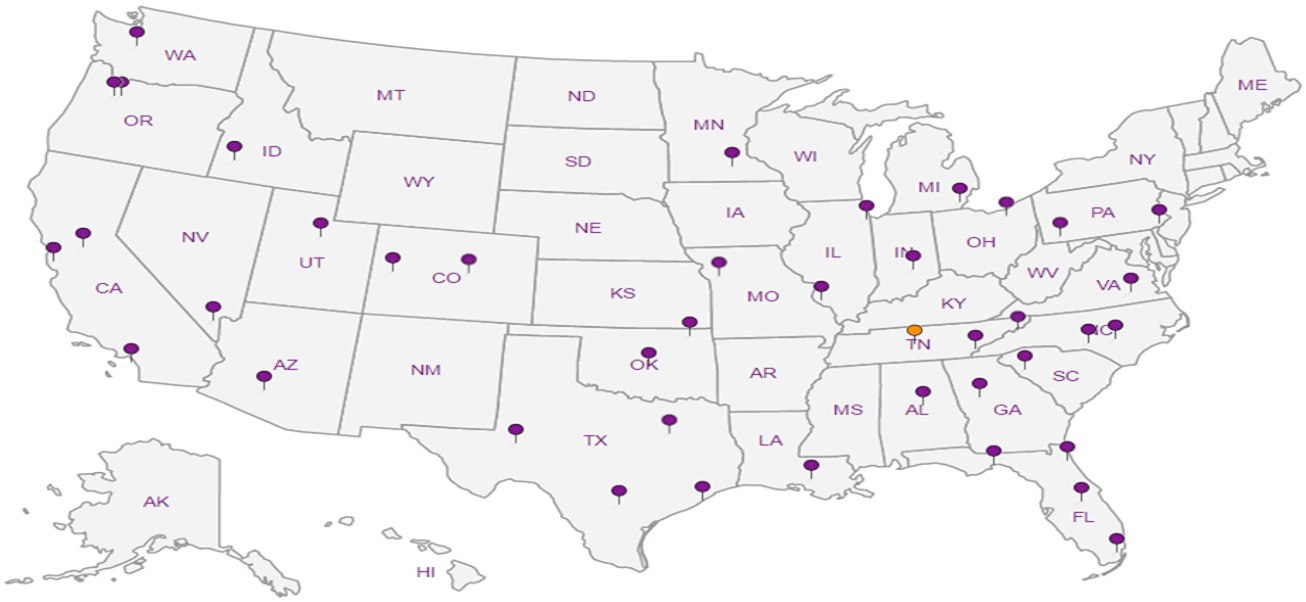
Third Party Federal Accreditations

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 and Gas
143 Diamond Avenue
Parachute, CO 81635

Billing Information:
Same as left

Report to: **Blair Rollins**

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

Project Description: F26 Fill Slope Spill

City/State Collected: **CO**

Phone: **(970) 640-6919**
Fax:

Client Project #

Lab Project #

Collected by (print): **Blair K. Rollins**

Site/Facility ID #

P.O. #

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

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH (DRO and GRO)	BTEX	Table 910-1 metals in soil	Table 910-1 PAHs	EC, SAR, pH	Remarks	Sample # (lab only)
20200603-F26 POR	G	SS	25'	6/3/20	1100	3	X	X	X	X	X		-01
20200603-F26 Spoil	G	SS		6/3/20	1215	3	X	X	X	X	X		02

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# L1225549
D153

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 # 167627506990

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
	6/3/20	1500		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1+1.1=1.2 °C Bottles Received: 3SW6
	6/3/2020	1700		
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 6/4/20 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Jeremy W. Watkins

Login #: L1225549	Client: CAERUSPCO	Date: 6/4/20	Evaluated by: Jeremy

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time	x	Login Clarification Needed		**If Broken Container:**
	Temperature not in range		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	pH not in range.		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Couri
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments: Received a bag per ID that was Submersed in Cooler water. Cooler water got into the sample.

Client informed by:		Call	x	Email		Voice Mail		Date: 6/5/20	Time: 1006
TSR Initials: CMW	Client Contact: Blair Rollins								

Login Instructions:

Please proceed with the other containers.

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

June 22, 2020

Caerus Oil and Gas

Sample Delivery Group:	L1229456
Samples Received:	06/16/2020
Project Number:	F26
Description:	F26

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

Entire Report Reviewed By:

Jason Romer
Project Manager

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20200615-F26-EBOT-25'-1310 L1229456-01 Solid

Collected by: Chance Holder | Collected date/time: 06/15/20 13:10 | Received date/time: 06/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494025	1	06/19/20 03:40	06/19/20 03:40	TRB	Mt. Juliet, TN
Calculated Results	WG1493911	1	06/17/20 07:21	06/19/20 18:26	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1495210	1	06/19/20 09:00	06/19/20 18:26	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1494806	1	06/18/20 11:08	06/19/20 14:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1495947	1	06/19/20 22:00	06/19/20 23:30	CAT	Mt. Juliet, TN
Mercury by Method 7471A	WG1493762	1	06/16/20 20:58	06/17/20 08:47	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1493911	1	06/17/20 07:21	06/17/20 22:45	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1494107	1	06/16/20 15:15	06/18/20 04:31	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1493824	1	06/16/20 15:15	06/17/20 03:47	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1494249	1	06/17/20 18:20	06/18/20 17:32	FM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1493830	1	06/17/20 05:42	06/17/20 14:07	AAT	Mt. Juliet, TN

20200615-F26-WBOT-15'-1300 L1229456-02 Solid

Collected by: Chance Holder | Collected date/time: 06/15/20 13:00 | Received date/time: 06/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494025	1	06/19/20 03:43	06/19/20 03:43	TRB	Mt. Juliet, TN
Calculated Results	WG1493911	1	06/17/20 07:21	06/19/20 18:27	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1495210	1	06/19/20 09:00	06/19/20 18:27	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1494806	1	06/18/20 11:08	06/19/20 14:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1495947	1	06/19/20 22:00	06/19/20 23:30	CAT	Mt. Juliet, TN
Mercury by Method 7471A	WG1493762	1	06/16/20 20:58	06/17/20 08:49	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1493911	1	06/17/20 07:21	06/17/20 22:50	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1494107	1	06/16/20 15:15	06/18/20 04:52	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1493824	1	06/16/20 15:15	06/17/20 04:07	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1494249	1	06/17/20 18:20	06/18/20 04:18	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1493830	1	06/17/20 05:42	06/17/20 14:27	AAT	Mt. Juliet, TN

20200615-F26-N WALL W-12'-1320 L1229456-03 Solid

Collected by: Chance Holder | Collected date/time: 06/15/20 13:20 | Received date/time: 06/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494025	1	06/19/20 03:45	06/19/20 03:45	TRB	Mt. Juliet, TN
Calculated Results	WG1493911	1	06/17/20 07:21	06/19/20 18:28	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1495210	1	06/19/20 09:00	06/19/20 18:28	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1494806	1	06/18/20 11:08	06/19/20 14:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1495947	1	06/19/20 22:00	06/19/20 23:30	CAT	Mt. Juliet, TN
Mercury by Method 7471A	WG1493762	1	06/16/20 20:58	06/17/20 08:57	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1493911	1	06/17/20 07:21	06/17/20 22:53	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1494107	1	06/16/20 15:15	06/18/20 05:12	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1493824	1	06/16/20 15:15	06/17/20 04:26	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1494249	1	06/17/20 18:20	06/18/20 02:24	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1493830	1	06/17/20 05:42	06/17/20 14:48	AAT	Mt. Juliet, TN

20200615-F26-N WALL E-21'-1330 L1229456-04 Solid

Collected by: Chance Holder | Collected date/time: 06/15/20 13:30 | Received date/time: 06/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494025	1	06/19/20 03:48	06/19/20 03:48	TRB	Mt. Juliet, TN
Calculated Results	WG1493911	1	06/17/20 07:21	06/19/20 18:29	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1495210	1	06/19/20 09:00	06/19/20 18:29	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1494806	1	06/18/20 11:08	06/19/20 14:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1495947	1	06/19/20 22:00	06/19/20 23:30	CAT	Mt. Juliet, TN

20200615-F26-N WALL E-21'-1330 L1229456-04 Solid

Collected by: Chance Holder | Collected date/time: 06/15/20 13:30 | Received date/time: 06/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7471A	WG1493762	1	06/16/20 20:58	06/17/20 08:59	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1493911	1	06/17/20 07:21	06/17/20 22:56	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1494107	1	06/16/20 15:15	06/18/20 05:33	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1493824	1	06/16/20 15:15	06/17/20 04:45	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1494249	1	06/17/20 18:20	06/18/20 02:37	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1493830	1	06/17/20 05:42	06/17/20 15:08	AAT	Mt. Juliet, TN

20200615-F26-N WALL N-21'-1340 L1229456-05 Solid

Collected by: Chance Holder | Collected date/time: 06/15/20 13:40 | Received date/time: 06/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494025	1	06/19/20 03:51	06/19/20 03:51	TRB	Mt. Juliet, TN
Calculated Results	WG1493911	1	06/17/20 07:21	06/19/20 18:32	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1495210	1	06/19/20 09:00	06/19/20 18:32	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1494806	1	06/18/20 11:08	06/19/20 14:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1495947	1	06/19/20 22:00	06/19/20 23:30	CAT	Mt. Juliet, TN
Mercury by Method 7471A	WG1493762	1	06/16/20 20:58	06/17/20 09:02	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1493911	1	06/17/20 07:21	06/17/20 23:00	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1494107	1.01	06/16/20 15:15	06/18/20 05:53	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1493824	1	06/16/20 15:15	06/17/20 05:04	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1494249	1	06/17/20 18:20	06/18/20 02:50	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1493867	1	06/17/20 15:36	06/18/20 01:08	AAT	Mt. Juliet, TN

20200615-F26-S WALL E-18'-1350 L1229456-06 Solid

Collected by: Chance Holder | Collected date/time: 06/15/20 13:50 | Received date/time: 06/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494025	1	06/19/20 03:54	06/19/20 03:54	TRB	Mt. Juliet, TN
Calculated Results	WG1493911	1	06/17/20 07:21	06/19/20 18:33	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1495210	1	06/19/20 09:00	06/19/20 18:33	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1494806	1	06/18/20 11:08	06/19/20 14:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1495947	1	06/19/20 22:00	06/19/20 23:30	CAT	Mt. Juliet, TN
Mercury by Method 7471A	WG1493762	1	06/16/20 20:58	06/17/20 09:05	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1493911	1	06/17/20 07:21	06/17/20 23:08	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1494107	1	06/16/20 15:15	06/18/20 06:14	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1493824	1	06/16/20 15:15	06/17/20 05:23	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1494249	1	06/17/20 18:20	06/18/20 03:02	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1493867	1	06/17/20 15:36	06/17/20 20:10	AAT	Mt. Juliet, TN

20200615-F26-S WALL W-12'-1400 L1229456-07 Solid

Collected by: Chance Holder | Collected date/time: 06/15/20 14:00 | Received date/time: 06/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494025	1	06/19/20 03:56	06/19/20 03:56	TRB	Mt. Juliet, TN
Calculated Results	WG1493911	1	06/17/20 07:21	06/19/20 18:33	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1495210	1	06/19/20 09:00	06/19/20 18:33	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1494806	1	06/18/20 11:08	06/19/20 14:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1495947	1	06/19/20 22:00	06/19/20 23:30	CAT	Mt. Juliet, TN
Mercury by Method 7471A	WG1493762	1	06/16/20 20:58	06/17/20 09:07	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1493911	1	06/17/20 07:21	06/17/20 23:12	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1494107	1	06/16/20 15:15	06/18/20 06:34	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1493824	1	06/16/20 15:15	06/17/20 05:42	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1494249	1	06/17/20 18:20	06/18/20 03:15	JN	Mt. Juliet, TN

20200615-F26-S WALL W-12'-1400 L1229456-07 Solid

Collected by: Chance Holder
Collected date/time: 06/15/20 14:00
Received date/time: 06/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1493867	1	06/17/20 15:36	06/17/20 20:33	AAT	Mt. Juliet, TN

20200615-F26-W WALL S-10'-1410 L1229456-08 Solid

Collected by: Chance Holder
Collected date/time: 06/15/20 14:10
Received date/time: 06/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494025	1	06/19/20 03:59	06/19/20 03:59	TRB	Mt. Juliet, TN
Calculated Results	WG1493911	1	06/17/20 07:21	06/19/20 18:34	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1495210	1	06/19/20 09:00	06/19/20 18:34	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1494806	1	06/18/20 11:08	06/19/20 14:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1495947	1	06/19/20 22:00	06/19/20 23:30	CAT	Mt. Juliet, TN
Mercury by Method 7471A	WG1493762	1	06/16/20 20:58	06/17/20 09:10	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1493911	1	06/17/20 07:21	06/17/20 23:15	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1494107	1	06/16/20 15:15	06/18/20 06:55	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1493824	1	06/16/20 15:15	06/17/20 06:01	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1494249	1	06/17/20 18:20	06/18/20 03:53	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1493867	1	06/17/20 15:36	06/17/20 20:56	AAT	Mt. Juliet, TN

20200615-F26-W WALL N-10'-1420 L1229456-09 Solid

Collected by: Chance Holder
Collected date/time: 06/15/20 14:20
Received date/time: 06/16/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494025	1	06/19/20 04:02	06/19/20 04:02	TRB	Mt. Juliet, TN
Calculated Results	WG1493911	1	06/17/20 07:21	06/19/20 18:36	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1495210	1	06/19/20 09:00	06/19/20 18:36	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1494806	1	06/18/20 11:08	06/19/20 14:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1495947	1	06/19/20 22:00	06/19/20 23:30	CAT	Mt. Juliet, TN
Mercury by Method 7471A	WG1493762	1	06/16/20 20:58	06/17/20 09:12	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1493911	1	06/17/20 07:21	06/17/20 23:18	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1494107	1	06/16/20 15:15	06/18/20 07:15	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1493824	1	06/16/20 15:15	06/17/20 06:20	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1494249	1	06/17/20 18:20	06/18/20 04:05	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1493867	1	06/17/20 15:36	06/17/20 21:19	AAT	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.

Jason Romer
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.01		1	06/19/2020 03:40	WG1494025

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	35.6		1.00	1	06/19/2020 18:26	WG1493911

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	06/19/2020 18:26	WG1495210

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.35	T8	1	06/19/2020 14:00	WG1494806

Sample Narrative:

L1229456-01 WG1494806: 8.35 at 22C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	189		10.0	1	06/19/2020 23:30	WG1495947

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/17/2020 08:47	WG1493762

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	13.2		2.00	1	06/17/2020 22:45	WG1493911
Barium	295		0.500	1	06/17/2020 22:45	WG1493911
Cadmium	1.20		0.500	1	06/17/2020 22:45	WG1493911
Chromium	35.6		1.00	1	06/17/2020 22:45	WG1493911
Copper	22.9		2.00	1	06/17/2020 22:45	WG1493911
Lead	15.2		0.500	1	06/17/2020 22:45	WG1493911
Nickel	28.9		2.00	1	06/17/2020 22:45	WG1493911
Selenium	ND		2.00	1	06/17/2020 22:45	WG1493911
Silver	ND		1.00	1	06/17/2020 22:45	WG1493911
Zinc	62.7		5.00	1	06/17/2020 22:45	WG1493911

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.263	B	0.100	1	06/18/2020 04:31	WG1494107
(S) a,a,a-Trifluorotoluene(FID)	*86.2*		*77.0-120*		*06/18/2020 04:31*	WG1494107

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	06/17/2020 03:47	WG1493824
Toluene	ND		0.00500	1	06/17/2020 03:47	WG1493824
Ethylbenzene	ND		0.00250	1	06/17/2020 03:47	WG1493824
Total Xylenes	ND		0.00650	1	06/17/2020 03:47	WG1493824
(S) Toluene-d8	*95.4*		*75.0-131*		*06/17/2020 03:47*	WG1493824
(S) 4-Bromofluorobenzene	*99.2*		*67.0-138*		*06/17/2020 03:47*	WG1493824
(S) 1,2-Dichloroethane-d4	*92.6*		*70.0-130*		*06/17/2020 03:47*	WG1493824

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	38.2		4.00	1	06/18/2020 17:32	WG1494249
(S) o-Terphenyl	*72.3*		*18.0-148*		*06/18/2020 17:32*	WG1494249

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	06/17/2020 14:07	WG1493830
Acenaphthene	ND		0.00600	1	06/17/2020 14:07	WG1493830
Acenaphthylene	ND		0.00600	1	06/17/2020 14:07	WG1493830
Benzo(a)anthracene	ND		0.00600	1	06/17/2020 14:07	WG1493830
Benzo(a)pyrene	ND		0.00600	1	06/17/2020 14:07	WG1493830
Benzo(b)fluoranthene	ND		0.00600	1	06/17/2020 14:07	WG1493830
Benzo(g,h,i)perylene	ND		0.00600	1	06/17/2020 14:07	WG1493830
Benzo(k)fluoranthene	ND		0.00600	1	06/17/2020 14:07	WG1493830
Chrysene	ND		0.00600	1	06/17/2020 14:07	WG1493830
Dibenz(a,h)anthracene	ND		0.00600	1	06/17/2020 14:07	WG1493830
Fluoranthene	ND		0.00600	1	06/17/2020 14:07	WG1493830
Fluorene	0.00775		0.00600	1	06/17/2020 14:07	WG1493830
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/17/2020 14:07	WG1493830
Naphthalene	ND		0.0200	1	06/17/2020 14:07	WG1493830
Phenanthrene	0.00608		0.00600	1	06/17/2020 14:07	WG1493830
Pyrene	ND		0.00600	1	06/17/2020 14:07	WG1493830
1-Methylnaphthalene	ND		0.0200	1	06/17/2020 14:07	WG1493830
2-Methylnaphthalene	0.0345		0.0200	1	06/17/2020 14:07	WG1493830
2-Chloronaphthalene	ND		0.0200	1	06/17/2020 14:07	WG1493830
(S) p-Terphenyl-d14	*88.7*		*23.0-120*		*06/17/2020 14:07*	WG1493830
(S) Nitrobenzene-d5	*103*		*14.0-149*		*06/17/2020 14:07*	WG1493830
(S) 2-Fluorobiphenyl	*81.9*		*34.0-125*		*06/17/2020 14:07*	WG1493830

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.203		1	06/19/2020 03:43	WG1494025

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	39.7		1.00	1	06/19/2020 18:27	WG1493911

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	06/19/2020 18:27	WG1495210

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.66	T8	1	06/19/2020 14:00	WG1494806

Sample Narrative:

L1229456-02 WG1494806: 7.66 at 22.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	185		10.0	1	06/19/2020 23:30	WG1495947

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/17/2020 08:49	WG1493762

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	10.0		2.00	1	06/17/2020 22:50	WG1493911
Barium	287		0.500	1	06/17/2020 22:50	WG1493911
Cadmium	ND		0.500	1	06/17/2020 22:50	WG1493911
Chromium	39.7		1.00	1	06/17/2020 22:50	WG1493911
Copper	18.8		2.00	1	06/17/2020 22:50	WG1493911
Lead	14.4		0.500	1	06/17/2020 22:50	WG1493911
Nickel	23.4		2.00	1	06/17/2020 22:50	WG1493911
Selenium	ND		2.00	1	06/17/2020 22:50	WG1493911
Silver	ND		1.00	1	06/17/2020 22:50	WG1493911
Zinc	59.8		5.00	1	06/17/2020 22:50	WG1493911

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.243	B	0.100	1	06/18/2020 04:52	WG1494107
(S) a,a,a-Trifluorotoluene(FID)	*89.5*		*77.0-120*		*06/18/2020 04:52*	WG1494107

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	06/17/2020 04:07	WG1493824
Toluene	ND		0.00500	1	06/17/2020 04:07	WG1493824
Ethylbenzene	ND		0.00250	1	06/17/2020 04:07	WG1493824
Total Xylenes	ND		0.00650	1	06/17/2020 04:07	WG1493824
(S) Toluene-d8	*95.4*		*75.0-131*		*06/17/2020 04:07*	WG1493824
(S) 4-Bromofluorobenzene	*105*		*67.0-138*		*06/17/2020 04:07*	WG1493824
(S) 1,2-Dichloroethane-d4	*96.8*		*70.0-130*		*06/17/2020 04:07*	WG1493824

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	239		4.00	1	06/18/2020 04:18	WG1494249
(S) o-Terphenyl	*72.2*		*18.0-148*		*06/18/2020 04:18*	WG1494249

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	06/17/2020 14:27	WG1493830
Acenaphthene	ND		0.00600	1	06/17/2020 14:27	WG1493830
Acenaphthylene	ND		0.00600	1	06/17/2020 14:27	WG1493830
Benzo(a)anthracene	ND		0.00600	1	06/17/2020 14:27	WG1493830
Benzo(a)pyrene	ND		0.00600	1	06/17/2020 14:27	WG1493830
Benzo(b)fluoranthene	ND		0.00600	1	06/17/2020 14:27	WG1493830
Benzo(g,h,i)perylene	ND		0.00600	1	06/17/2020 14:27	WG1493830
Benzo(k)fluoranthene	ND		0.00600	1	06/17/2020 14:27	WG1493830
Chrysene	ND		0.00600	1	06/17/2020 14:27	WG1493830
Dibenz(a,h)anthracene	ND		0.00600	1	06/17/2020 14:27	WG1493830
Fluoranthene	ND		0.00600	1	06/17/2020 14:27	WG1493830
Fluorene	0.00659		0.00600	1	06/17/2020 14:27	WG1493830
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/17/2020 14:27	WG1493830
Naphthalene	ND		0.0200	1	06/17/2020 14:27	WG1493830
Phenanthrene	0.00666		0.00600	1	06/17/2020 14:27	WG1493830
Pyrene	ND		0.00600	1	06/17/2020 14:27	WG1493830
1-Methylnaphthalene	ND		0.0200	1	06/17/2020 14:27	WG1493830
2-Methylnaphthalene	ND		0.0200	1	06/17/2020 14:27	WG1493830
2-Chloronaphthalene	ND		0.0200	1	06/17/2020 14:27	WG1493830
(S) p-Terphenyl-d14	*95.0*		*23.0-120*		*06/17/2020 14:27*	WG1493830
(S) Nitrobenzene-d5	*153*	J1	*14.0-149*		*06/17/2020 14:27*	WG1493830
(S) 2-Fluorobiphenyl	*90.2*		*34.0-125*		*06/17/2020 14:27*	WG1493830

Sample Narrative:

L1229456-02 WG1493830: Surrogate failure due to matrix interference

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.36		1	06/19/2020 03:45	WG1494025

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	36.7		1.00	1	06/19/2020 18:28	WG1493911

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	06/19/2020 18:28	WG1495210

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.49	T8	1	06/19/2020 14:00	WG1494806

Sample Narrative:

L1229456-03 WG1494806: 8.49 at 21.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	244		10.0	1	06/19/2020 23:30	WG1495947

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/17/2020 08:57	WG1493762

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	11.2		2.00	1	06/17/2020 22:53	WG1493911
Barium	246		0.500	1	06/17/2020 22:53	WG1493911
Cadmium	0.667		0.500	1	06/17/2020 22:53	WG1493911
Chromium	36.7		1.00	1	06/17/2020 22:53	WG1493911
Copper	20.4		2.00	1	06/17/2020 22:53	WG1493911
Lead	14.1		0.500	1	06/17/2020 22:53	WG1493911
Nickel	28.9		2.00	1	06/17/2020 22:53	WG1493911
Selenium	ND		2.00	1	06/17/2020 22:53	WG1493911
Silver	ND		1.00	1	06/17/2020 22:53	WG1493911
Zinc	60.1		5.00	1	06/17/2020 22:53	WG1493911

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	06/18/2020 05:12	WG1494107
(S) a,a,a-Trifluorotoluene(FID)	*87.2*		*77.0-120*		*06/18/2020 05:12*	WG1494107

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	06/17/2020 04:26	WG1493824
Toluene	ND		0.00500	1	06/17/2020 04:26	WG1493824
Ethylbenzene	ND		0.00250	1	06/17/2020 04:26	WG1493824
Total Xylenes	ND		0.00650	1	06/17/2020 04:26	WG1493824
(S) Toluene-d8	*95.8*		*75.0-131*		*06/17/2020 04:26*	WG1493824
(S) 4-Bromofluorobenzene	*100*		*67.0-138*		*06/17/2020 04:26*	WG1493824
(S) 1,2-Dichloroethane-d4	*99.0*		*70.0-130*		*06/17/2020 04:26*	WG1493824

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	6.83		4.00	1	06/18/2020 02:24	WG1494249
(S) o-Terphenyl	*81.7*		*18.0-148*		*06/18/2020 02:24*	WG1494249

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	06/17/2020 14:48	WG1493830
Acenaphthene	ND		0.00600	1	06/17/2020 14:48	WG1493830
Acenaphthylene	ND		0.00600	1	06/17/2020 14:48	WG1493830
Benzo(a)anthracene	ND		0.00600	1	06/17/2020 14:48	WG1493830
Benzo(a)pyrene	ND		0.00600	1	06/17/2020 14:48	WG1493830
Benzo(b)fluoranthene	ND		0.00600	1	06/17/2020 14:48	WG1493830
Benzo(g,h,i)perylene	ND		0.00600	1	06/17/2020 14:48	WG1493830
Benzo(k)fluoranthene	ND		0.00600	1	06/17/2020 14:48	WG1493830
Chrysene	ND		0.00600	1	06/17/2020 14:48	WG1493830
Dibenz(a,h)anthracene	ND		0.00600	1	06/17/2020 14:48	WG1493830
Fluoranthene	ND		0.00600	1	06/17/2020 14:48	WG1493830
Fluorene	ND		0.00600	1	06/17/2020 14:48	WG1493830
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/17/2020 14:48	WG1493830
Naphthalene	ND		0.0200	1	06/17/2020 14:48	WG1493830
Phenanthrene	ND		0.00600	1	06/17/2020 14:48	WG1493830
Pyrene	ND		0.00600	1	06/17/2020 14:48	WG1493830
1-Methylnaphthalene	ND		0.0200	1	06/17/2020 14:48	WG1493830
2-Methylnaphthalene	ND		0.0200	1	06/17/2020 14:48	WG1493830
2-Chloronaphthalene	ND		0.0200	1	06/17/2020 14:48	WG1493830
(S) p-Terphenyl-d14	*92.9*		*23.0-120*		*06/17/2020 14:48*	WG1493830
(S) Nitrobenzene-d5	*95.3*		*14.0-149*		*06/17/2020 14:48*	WG1493830
(S) 2-Fluorobiphenyl	*82.7*		*34.0-125*		*06/17/2020 14:48*	WG1493830

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.363		1	06/19/2020 03:48	WG1494025

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	29.1		1.00	1	06/19/2020 18:29	WG1493911

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	06/19/2020 18:29	WG1495210

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.34	T8	1	06/19/2020 14:00	WG1494806

Sample Narrative:

L1229456-04 WG1494806: 8.34 at 21.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	130		10.0	1	06/19/2020 23:30	WG1495947

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/17/2020 08:59	WG1493762

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	13.4		2.00	1	06/17/2020 22:56	WG1493911
Barium	240		0.500	1	06/17/2020 22:56	WG1493911
Cadmium	1.04		0.500	1	06/17/2020 22:56	WG1493911
Chromium	29.1		1.00	1	06/17/2020 22:56	WG1493911
Copper	17.2		2.00	1	06/17/2020 22:56	WG1493911
Lead	12.4		0.500	1	06/17/2020 22:56	WG1493911
Nickel	23.8		2.00	1	06/17/2020 22:56	WG1493911
Selenium	ND		2.00	1	06/17/2020 22:56	WG1493911
Silver	ND		1.00	1	06/17/2020 22:56	WG1493911
Zinc	52.6		5.00	1	06/17/2020 22:56	WG1493911

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	1.64		0.100	1	06/18/2020 05:33	WG1494107
(S) a,a,a-Trifluorotoluene(FID)	*86.5*		*77.0-120*		*06/18/2020 05:33*	WG1494107

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	06/17/2020 04:45	WG1493824
Toluene	ND		0.00500	1	06/17/2020 04:45	WG1493824
Ethylbenzene	ND		0.00250	1	06/17/2020 04:45	WG1493824
Total Xylenes	ND		0.00650	1	06/17/2020 04:45	WG1493824
(S) Toluene-d8	*94.3*		*75.0-131*		*06/17/2020 04:45*	WG1493824
(S) 4-Bromofluorobenzene	*104*		*67.0-138*		*06/17/2020 04:45*	WG1493824
(S) 1,2-Dichloroethane-d4	*97.3*		*70.0-130*		*06/17/2020 04:45*	WG1493824

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	75.7		4.00	1	06/18/2020 02:37	WG1494249
(S) o-Terphenyl	*65.3*		*18.0-148*		*06/18/2020 02:37*	WG1494249

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	06/17/2020 15:08	WG1493830
Acenaphthene	ND		0.00600	1	06/17/2020 15:08	WG1493830
Acenaphthylene	ND		0.00600	1	06/17/2020 15:08	WG1493830
Benzo(a)anthracene	ND		0.00600	1	06/17/2020 15:08	WG1493830
Benzo(a)pyrene	ND		0.00600	1	06/17/2020 15:08	WG1493830
Benzo(b)fluoranthene	ND		0.00600	1	06/17/2020 15:08	WG1493830
Benzo(g,h,i)perylene	ND		0.00600	1	06/17/2020 15:08	WG1493830
Benzo(k)fluoranthene	ND		0.00600	1	06/17/2020 15:08	WG1493830
Chrysene	ND		0.00600	1	06/17/2020 15:08	WG1493830
Dibenz(a,h)anthracene	ND		0.00600	1	06/17/2020 15:08	WG1493830
Fluoranthene	ND		0.00600	1	06/17/2020 15:08	WG1493830
Fluorene	ND		0.00600	1	06/17/2020 15:08	WG1493830
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/17/2020 15:08	WG1493830
Naphthalene	ND		0.0200	1	06/17/2020 15:08	WG1493830
Phenanthrene	ND		0.00600	1	06/17/2020 15:08	WG1493830
Pyrene	ND		0.00600	1	06/17/2020 15:08	WG1493830
1-Methylnaphthalene	ND		0.0200	1	06/17/2020 15:08	WG1493830
2-Methylnaphthalene	ND		0.0200	1	06/17/2020 15:08	WG1493830
2-Chloronaphthalene	ND		0.0200	1	06/17/2020 15:08	WG1493830
(S) p-Terphenyl-d14	*94.8*		*23.0-120*		*06/17/2020 15:08*	WG1493830
(S) Nitrobenzene-d5	*96.6*		*14.0-149*		*06/17/2020 15:08*	WG1493830
(S) 2-Fluorobiphenyl	*84.5*		*34.0-125*		*06/17/2020 15:08*	WG1493830

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.169		1	06/19/2020 03:51	WG1494025

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	28.0		1.00	1	06/19/2020 18:32	WG1493911

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	4.58		2.00	1	06/19/2020 18:32	WG1495210

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.30	T8	1	06/19/2020 14:00	WG1494806

Sample Narrative:

L1229456-05 WG1494806: 7.3 at 21.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	148		10.0	1	06/19/2020 23:30	WG1495947

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/17/2020 09:02	WG1493762

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.89		2.00	1	06/17/2020 23:00	WG1493911
Barium	177		0.500	1	06/17/2020 23:00	WG1493911
Cadmium	0.639		0.500	1	06/17/2020 23:00	WG1493911
Chromium	32.5		1.00	1	06/17/2020 23:00	WG1493911
Copper	19.6		2.00	1	06/17/2020 23:00	WG1493911
Lead	12.7		0.500	1	06/17/2020 23:00	WG1493911
Nickel	21.5		2.00	1	06/17/2020 23:00	WG1493911
Selenium	ND		2.00	1	06/17/2020 23:00	WG1493911
Silver	ND		1.00	1	06/17/2020 23:00	WG1493911
Zinc	60.5		5.00	1	06/17/2020 23:00	WG1493911

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		0.101	1.01	06/18/2020 05:53	WG1494107
(S) a,a,a-Trifluorotoluene(FID)	*90.8*		*77.0-120*		*06/18/2020 05:53*	WG1494107

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	06/17/2020 05:04	WG1493824
Toluene	ND		0.00500	1	06/17/2020 05:04	WG1493824
Ethylbenzene	ND		0.00250	1	06/17/2020 05:04	WG1493824
Total Xylenes	ND		0.00650	1	06/17/2020 05:04	WG1493824
(S) Toluene-d8	*95.6*		*75.0-131*		*06/17/2020 05:04*	WG1493824
(S) 4-Bromofluorobenzene	*95.9*		*67.0-138*		*06/17/2020 05:04*	WG1493824
(S) 1,2-Dichloroethane-d4	*89.2*		*70.0-130*		*06/17/2020 05:04*	WG1493824

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	7.71		4.00	1	06/18/2020 02:50	WG1494249
(S) o-Terphenyl	*80.9*		*18.0-148*		*06/18/2020 02:50*	WG1494249

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	06/18/2020 01:08	WG1493867
Acenaphthene	ND		0.00600	1	06/18/2020 01:08	WG1493867
Acenaphthylene	ND		0.00600	1	06/18/2020 01:08	WG1493867
Benzo(a)anthracene	ND		0.00600	1	06/18/2020 01:08	WG1493867
Benzo(a)pyrene	ND		0.00600	1	06/18/2020 01:08	WG1493867
Benzo(b)fluoranthene	ND		0.00600	1	06/18/2020 01:08	WG1493867
Benzo(g,h,i)perylene	ND		0.00600	1	06/18/2020 01:08	WG1493867
Benzo(k)fluoranthene	ND		0.00600	1	06/18/2020 01:08	WG1493867
Chrysene	ND		0.00600	1	06/18/2020 01:08	WG1493867
Dibenz(a,h)anthracene	ND		0.00600	1	06/18/2020 01:08	WG1493867
Fluoranthene	ND		0.00600	1	06/18/2020 01:08	WG1493867
Fluorene	ND		0.00600	1	06/18/2020 01:08	WG1493867
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/18/2020 01:08	WG1493867
Naphthalene	ND		0.0200	1	06/18/2020 01:08	WG1493867
Phenanthrene	ND		0.00600	1	06/18/2020 01:08	WG1493867
Pyrene	ND		0.00600	1	06/18/2020 01:08	WG1493867
1-Methylnaphthalene	ND		0.0200	1	06/18/2020 01:08	WG1493867
2-Methylnaphthalene	ND		0.0200	1	06/18/2020 01:08	WG1493867
2-Chloronaphthalene	ND		0.0200	1	06/18/2020 01:08	WG1493867
(S) p-Terphenyl-d14	*78.0*		*23.0-120*		*06/18/2020 01:08*	WG1493867
(S) Nitrobenzene-d5	*78.7*		*14.0-149*		*06/18/2020 01:08*	WG1493867
(S) 2-Fluorobiphenyl	*79.2*		*34.0-125*		*06/18/2020 01:08*	WG1493867

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.659		1	06/19/2020 03:54	WG1494025

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	34.5		1.00	1	06/19/2020 18:33	WG1493911

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	06/19/2020 18:33	WG1495210

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.50	T8	1	06/19/2020 14:00	WG1494806

Sample Narrative:

L1229456-06 WG1494806: 8.5 at 21.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	144		10.0	1	06/19/2020 23:30	WG1495947

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/17/2020 09:05	WG1493762

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	25.2		2.00	1	06/17/2020 23:08	WG1493911
Barium	268		0.500	1	06/17/2020 23:08	WG1493911
Cadmium	0.907		0.500	1	06/17/2020 23:08	WG1493911
Chromium	34.5		1.00	1	06/17/2020 23:08	WG1493911
Copper	21.6		2.00	1	06/17/2020 23:08	WG1493911
Lead	16.1		0.500	1	06/17/2020 23:08	WG1493911
Nickel	29.5		2.00	1	06/17/2020 23:08	WG1493911
Selenium	ND		2.00	1	06/17/2020 23:08	WG1493911
Silver	ND		1.00	1	06/17/2020 23:08	WG1493911
Zinc	66.3		5.00	1	06/17/2020 23:08	WG1493911

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	06/18/2020 06:14	WG1494107
(S) a,a,a-Trifluorotoluene(FID)	*86.4*		*77.0-120*		*06/18/2020 06:14*	WG1494107

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	06/17/2020 05:23	WG1493824
Toluene	ND		0.00500	1	06/17/2020 05:23	WG1493824
Ethylbenzene	ND		0.00250	1	06/17/2020 05:23	WG1493824
Total Xylenes	ND		0.00650	1	06/17/2020 05:23	WG1493824
(S) Toluene-d8	*96.1*		*75.0-131*		*06/17/2020 05:23*	WG1493824
(S) 4-Bromofluorobenzene	*97.2*		*67.0-138*		*06/17/2020 05:23*	WG1493824
(S) 1,2-Dichloroethane-d4	*95.6*		*70.0-130*		*06/17/2020 05:23*	WG1493824

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	9.53		4.00	1	06/18/2020 03:02	WG1494249
(S) o-Terphenyl	*85.4*		*18.0-148*		*06/18/2020 03:02*	WG1494249

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	06/17/2020 20:10	WG1493867
Acenaphthene	ND		0.00600	1	06/17/2020 20:10	WG1493867
Acenaphthylene	ND		0.00600	1	06/17/2020 20:10	WG1493867
Benzo(a)anthracene	ND		0.00600	1	06/17/2020 20:10	WG1493867
Benzo(a)pyrene	ND		0.00600	1	06/17/2020 20:10	WG1493867
Benzo(b)fluoranthene	ND		0.00600	1	06/17/2020 20:10	WG1493867
Benzo(g,h,i)perylene	ND		0.00600	1	06/17/2020 20:10	WG1493867
Benzo(k)fluoranthene	ND		0.00600	1	06/17/2020 20:10	WG1493867
Chrysene	ND		0.00600	1	06/17/2020 20:10	WG1493867
Dibenz(a,h)anthracene	ND		0.00600	1	06/17/2020 20:10	WG1493867
Fluoranthene	ND		0.00600	1	06/17/2020 20:10	WG1493867
Fluorene	ND		0.00600	1	06/17/2020 20:10	WG1493867
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/17/2020 20:10	WG1493867
Naphthalene	ND		0.0200	1	06/17/2020 20:10	WG1493867
Phenanthrene	ND		0.00600	1	06/17/2020 20:10	WG1493867
Pyrene	ND		0.00600	1	06/17/2020 20:10	WG1493867
1-Methylnaphthalene	ND		0.0200	1	06/17/2020 20:10	WG1493867
2-Methylnaphthalene	ND		0.0200	1	06/17/2020 20:10	WG1493867
2-Chloronaphthalene	ND		0.0200	1	06/17/2020 20:10	WG1493867
(S) p-Terphenyl-d14	*80.5*		*23.0-120*		*06/17/2020 20:10*	WG1493867
(S) Nitrobenzene-d5	*78.2*		*14.0-149*		*06/17/2020 20:10*	WG1493867
(S) 2-Fluorobiphenyl	*80.3*		*34.0-125*		*06/17/2020 20:10*	WG1493867

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.00		1	06/19/2020 03:56	WG1494025

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	36.1		1.00	1	06/19/2020 18:33	WG1493911

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	06/19/2020 18:33	WG1495210

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.45	T8	1	06/19/2020 14:00	WG1494806

Sample Narrative:

L1229456-07 WG1494806: 8.45 at 22.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	183		10.0	1	06/19/2020 23:30	WG1495947

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/17/2020 09:07	WG1493762

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.97		2.00	1	06/17/2020 23:12	WG1493911
Barium	258		0.500	1	06/17/2020 23:12	WG1493911
Cadmium	1.48		0.500	1	06/17/2020 23:12	WG1493911
Chromium	36.1		1.00	1	06/17/2020 23:12	WG1493911
Copper	21.5		2.00	1	06/17/2020 23:12	WG1493911
Lead	13.1		0.500	1	06/17/2020 23:12	WG1493911
Nickel	27.5		2.00	1	06/17/2020 23:12	WG1493911
Selenium	ND		2.00	1	06/17/2020 23:12	WG1493911
Silver	ND		1.00	1	06/17/2020 23:12	WG1493911
Zinc	66.8		5.00	1	06/17/2020 23:12	WG1493911

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	06/18/2020 06:34	WG1494107
(S) a,a,a-Trifluorotoluene(FID)	*86.6*		*77.0-120*		*06/18/2020 06:34*	WG1494107

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	06/17/2020 05:42	WG1493824
Toluene	ND		0.00500	1	06/17/2020 05:42	WG1493824
Ethylbenzene	ND		0.00250	1	06/17/2020 05:42	WG1493824
Total Xylenes	ND		0.00650	1	06/17/2020 05:42	WG1493824
(S) Toluene-d8	*97.4*		*75.0-131*		*06/17/2020 05:42*	WG1493824
(S) 4-Bromofluorobenzene	*98.3*		*67.0-138*		*06/17/2020 05:42*	WG1493824
(S) 1,2-Dichloroethane-d4	*94.4*		*70.0-130*		*06/17/2020 05:42*	WG1493824

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	ND		4.00	1	06/18/2020 03:15	WG1494249
(S) o-Terphenyl	*88.7*		*18.0-148*		*06/18/2020 03:15*	WG1494249

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	06/17/2020 20:33	WG1493867
Acenaphthene	ND		0.00600	1	06/17/2020 20:33	WG1493867
Acenaphthylene	ND		0.00600	1	06/17/2020 20:33	WG1493867
Benzo(a)anthracene	ND		0.00600	1	06/17/2020 20:33	WG1493867
Benzo(a)pyrene	ND		0.00600	1	06/17/2020 20:33	WG1493867
Benzo(b)fluoranthene	ND		0.00600	1	06/17/2020 20:33	WG1493867
Benzo(g,h,i)perylene	ND		0.00600	1	06/17/2020 20:33	WG1493867
Benzo(k)fluoranthene	ND		0.00600	1	06/17/2020 20:33	WG1493867
Chrysene	ND		0.00600	1	06/17/2020 20:33	WG1493867
Dibenz(a,h)anthracene	ND		0.00600	1	06/17/2020 20:33	WG1493867
Fluoranthene	ND		0.00600	1	06/17/2020 20:33	WG1493867
Fluorene	ND		0.00600	1	06/17/2020 20:33	WG1493867
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/17/2020 20:33	WG1493867
Naphthalene	ND		0.0200	1	06/17/2020 20:33	WG1493867
Phenanthrene	ND		0.00600	1	06/17/2020 20:33	WG1493867
Pyrene	ND		0.00600	1	06/17/2020 20:33	WG1493867
1-Methylnaphthalene	ND		0.0200	1	06/17/2020 20:33	WG1493867
2-Methylnaphthalene	ND		0.0200	1	06/17/2020 20:33	WG1493867
2-Chloronaphthalene	ND		0.0200	1	06/17/2020 20:33	WG1493867
(S) p-Terphenyl-d14	*82.3*		*23.0-120*		*06/17/2020 20:33*	WG1493867
(S) Nitrobenzene-d5	*81.5*		*14.0-149*		*06/17/2020 20:33*	WG1493867
(S) 2-Fluorobiphenyl	*81.0*		*34.0-125*		*06/17/2020 20:33*	WG1493867

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.871		1	06/19/2020 03:59	WG1494025

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	33.2		1.00	1	06/19/2020 18:34	WG1493911

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	06/19/2020 18:34	WG1495210

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.35	T8	1	06/19/2020 14:00	WG1494806

Sample Narrative:

L1229456-08 WG1494806: 8.35 at 22.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	187		10.0	1	06/19/2020 23:30	WG1495947

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/17/2020 09:10	WG1493762

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	11.3		2.00	1	06/17/2020 23:15	WG1493911
Barium	303		0.500	1	06/17/2020 23:15	WG1493911
Cadmium	0.649		0.500	1	06/17/2020 23:15	WG1493911
Chromium	33.2		1.00	1	06/17/2020 23:15	WG1493911
Copper	19.3		2.00	1	06/17/2020 23:15	WG1493911
Lead	14.2		0.500	1	06/17/2020 23:15	WG1493911
Nickel	27.3		2.00	1	06/17/2020 23:15	WG1493911
Selenium	ND		2.00	1	06/17/2020 23:15	WG1493911
Silver	ND		1.00	1	06/17/2020 23:15	WG1493911
Zinc	59.4		5.00	1	06/17/2020 23:15	WG1493911

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	06/18/2020 06:55	WG1494107
(S) a,a,a-Trifluorotoluene(FID)	*87.5*		*77.0-120*		*06/18/2020 06:55*	WG1494107

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	06/17/2020 06:01	WG1493824
Toluene	ND		0.00500	1	06/17/2020 06:01	WG1493824
Ethylbenzene	ND		0.00250	1	06/17/2020 06:01	WG1493824
Total Xylenes	ND		0.00650	1	06/17/2020 06:01	WG1493824
(S) Toluene-d8	*95.7*		*75.0-131*		*06/17/2020 06:01*	WG1493824
(S) 4-Bromofluorobenzene	*96.8*		*67.0-138*		*06/17/2020 06:01*	WG1493824
(S) 1,2-Dichloroethane-d4	*94.7*		*70.0-130*		*06/17/2020 06:01*	WG1493824

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	4.20		4.00	1	06/18/2020 03:53	WG1494249
(S) o-Terphenyl	*77.4*		*18.0-148*		*06/18/2020 03:53*	WG1494249

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	06/17/2020 20:56	WG1493867
Acenaphthene	ND		0.00600	1	06/17/2020 20:56	WG1493867
Acenaphthylene	ND		0.00600	1	06/17/2020 20:56	WG1493867
Benzo(a)anthracene	ND		0.00600	1	06/17/2020 20:56	WG1493867
Benzo(a)pyrene	ND		0.00600	1	06/17/2020 20:56	WG1493867
Benzo(b)fluoranthene	ND		0.00600	1	06/17/2020 20:56	WG1493867
Benzo(g,h,i)perylene	ND		0.00600	1	06/17/2020 20:56	WG1493867
Benzo(k)fluoranthene	ND		0.00600	1	06/17/2020 20:56	WG1493867
Chrysene	ND		0.00600	1	06/17/2020 20:56	WG1493867
Dibenz(a,h)anthracene	ND		0.00600	1	06/17/2020 20:56	WG1493867
Fluoranthene	ND		0.00600	1	06/17/2020 20:56	WG1493867
Fluorene	ND		0.00600	1	06/17/2020 20:56	WG1493867
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/17/2020 20:56	WG1493867
Naphthalene	ND		0.0200	1	06/17/2020 20:56	WG1493867
Phenanthrene	ND		0.00600	1	06/17/2020 20:56	WG1493867
Pyrene	ND		0.00600	1	06/17/2020 20:56	WG1493867
1-Methylnaphthalene	ND		0.0200	1	06/17/2020 20:56	WG1493867
2-Methylnaphthalene	ND		0.0200	1	06/17/2020 20:56	WG1493867
2-Chloronaphthalene	ND		0.0200	1	06/17/2020 20:56	WG1493867
(S) p-Terphenyl-d14	*83.3*		*23.0-120*		*06/17/2020 20:56*	WG1493867
(S) Nitrobenzene-d5	*77.2*		*14.0-149*		*06/17/2020 20:56*	WG1493867
(S) 2-Fluorobiphenyl	*78.1*		*34.0-125*		*06/17/2020 20:56*	WG1493867

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.38		1	06/19/2020 04:02	WG1494025

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	35.2		1.00	1	06/19/2020 18:36	WG1493911

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	06/19/2020 18:36	WG1495210

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.63	T8	1	06/19/2020 14:00	WG1494806

Sample Narrative:

L1229456-09 WG1494806: 8.63 at 22.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	213		10.0	1	06/19/2020 23:30	WG1495947

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/17/2020 09:12	WG1493762

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.04		2.00	1	06/17/2020 23:18	WG1493911
Barium	235		0.500	1	06/17/2020 23:18	WG1493911
Cadmium	0.853		0.500	1	06/17/2020 23:18	WG1493911
Chromium	35.2		1.00	1	06/17/2020 23:18	WG1493911
Copper	20.1		2.00	1	06/17/2020 23:18	WG1493911
Lead	14.7		0.500	1	06/17/2020 23:18	WG1493911
Nickel	28.8		2.00	1	06/17/2020 23:18	WG1493911
Selenium	ND		2.00	1	06/17/2020 23:18	WG1493911
Silver	ND		1.00	1	06/17/2020 23:18	WG1493911
Zinc	59.9		5.00	1	06/17/2020 23:18	WG1493911

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	06/18/2020 07:15	WG1494107
(S) a,a,a-Trifluorotoluene(FID)	*87.5*		*77.0-120*		*06/18/2020 07:15*	WG1494107

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	06/17/2020 06:20	WG1493824
Toluene	ND		0.00500	1	06/17/2020 06:20	WG1493824
Ethylbenzene	ND		0.00250	1	06/17/2020 06:20	WG1493824
Total Xylenes	ND		0.00650	1	06/17/2020 06:20	WG1493824
(S) Toluene-d8	*96.0*		*75.0-131*		*06/17/2020 06:20*	WG1493824
(S) 4-Bromofluorobenzene	*94.6*		*67.0-138*		*06/17/2020 06:20*	WG1493824
(S) 1,2-Dichloroethane-d4	*91.8*		*70.0-130*		*06/17/2020 06:20*	WG1493824

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	4.35		4.00	1	06/18/2020 04:05	WG1494249
(S) o-Terphenyl	*87.0*		*18.0-148*		*06/18/2020 04:05*	WG1494249

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	06/17/2020 21:19	WG1493867
Acenaphthene	ND		0.00600	1	06/17/2020 21:19	WG1493867
Acenaphthylene	ND		0.00600	1	06/17/2020 21:19	WG1493867
Benzo(a)anthracene	ND		0.00600	1	06/17/2020 21:19	WG1493867
Benzo(a)pyrene	ND		0.00600	1	06/17/2020 21:19	WG1493867
Benzo(b)fluoranthene	ND		0.00600	1	06/17/2020 21:19	WG1493867
Benzo(g,h,i)perylene	ND		0.00600	1	06/17/2020 21:19	WG1493867
Benzo(k)fluoranthene	ND		0.00600	1	06/17/2020 21:19	WG1493867
Chrysene	ND		0.00600	1	06/17/2020 21:19	WG1493867
Dibenz(a,h)anthracene	ND		0.00600	1	06/17/2020 21:19	WG1493867
Fluoranthene	ND		0.00600	1	06/17/2020 21:19	WG1493867
Fluorene	ND		0.00600	1	06/17/2020 21:19	WG1493867
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/17/2020 21:19	WG1493867
Naphthalene	ND		0.0200	1	06/17/2020 21:19	WG1493867
Phenanthrene	ND		0.00600	1	06/17/2020 21:19	WG1493867
Pyrene	ND		0.00600	1	06/17/2020 21:19	WG1493867
1-Methylnaphthalene	ND		0.0200	1	06/17/2020 21:19	WG1493867
2-Methylnaphthalene	ND		0.0200	1	06/17/2020 21:19	WG1493867
2-Chloronaphthalene	ND		0.0200	1	06/17/2020 21:19	WG1493867
(S) p-Terphenyl-d14	*84.9*		*23.0-120*		*06/17/2020 21:19*	WG1493867
(S) Nitrobenzene-d5	*81.0*		*14.0-149*		*06/17/2020 21:19*	WG1493867
(S) 2-Fluorobiphenyl	*81.8*		*34.0-125*		*06/17/2020 21:19*	WG1493867

Method Blank (MB)

(MB) R3540797-1 06/19/20 18:01

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

L1229217-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1229217-01 06/19/20 18:18 • (DUP) R3540797-7 06/19/20 18:19

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

L1229456-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1229456-09 06/19/20 18:36 • (DUP) R3540797-8 06/19/20 18:36

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) R3540797-2 06/19/20 18:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium,Hexavalent	24.0	22.9	95.5	80.0-120	

L1228737-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228737-01 06/19/20 18:07 • (MS) R3540797-3 06/19/20 18:13 • (MSD) R3540797-4 06/19/20 18:13

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	13.9	13.7	69.5	68.7	1	75.0-125	J6	J6	1.23	20

L1228737-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1228737-01 06/19/20 18:07 • (MS) R3540797-5 06/19/20 18:14

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chromium,Hexavalent	651	ND	378	58.1	50	75.0-125	J6

L1229456-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1229456-07 06/19/20 14:00 • (DUP) R3540642-2 06/19/20 14:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.45	8.49	1	0.472		1

Sample Narrative:

OS: 8.45 at 22.7C

DUP: 8.49 at 22.3C

Laboratory Control Sample (LCS)

(LCS) R3540642-1 06/19/20 14:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.98	99.8	99.0-101	

Sample Narrative:

LCS: 9.98 at 22.5C

Method Blank (MB)

(MB) R3540814-1 06/19/20 23:30

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

L1229456-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1229456-01 06/19/20 23:30 • (DUP) R3540814-3 06/19/20 23:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	189	189	1	0.318		20

Laboratory Control Sample (LCS)

(LCS) R3540814-2 06/19/20 23:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	umhos/cm	umhos/cm	%	%	
Specific Conductance	445	446	100	85.0-115	

Method Blank (MB)

(MB) R3539542-1 06/17/20 08:26

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

Laboratory Control Sample (LCS)

(LCS) R3539542-2 06/17/20 08:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.488	97.5	80.0-120	

L1229237-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1229237-02 06/17/20 08:31 • (MS) R3539542-3 06/17/20 08:34 • (MSD) R3539542-4 06/17/20 08:36

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 %
Mercury	0.500	0.0420	0.466	0.515	84.8	94.5	1	75.0-125			9.93	20

Method Blank (MB)

(MB) R3539933-1 06/17/20 21:11

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.460	2.00
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	U		0.939	5.00

Laboratory Control Sample (LCS)

(LCS) R3539933-2 06/17/20 21:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	92.5	92.5	80.0-120	
Barium	100	98.6	98.6	80.0-120	
Cadmium	100	94.9	94.9	80.0-120	
Chromium	100	96.2	96.2	80.0-120	
Copper	100	94.4	94.4	80.0-120	
Lead	100	95.2	95.2	80.0-120	
Nickel	100	97.8	97.8	80.0-120	
Selenium	100	92.9	92.9	80.0-120	
Silver	20.0	18.3	91.4	80.0-120	
Zinc	100	94.2	94.2	80.0-120	

L1228187-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228187-03 06/17/20 22:02 • (MS) R3539933-7 06/17/20 22:11 • (MSD) R3539933-8 06/17/20 22:14

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	20.0	ND	124	120	117	113	5	75.0-125			3.21	20
Cadmium	20.0	ND	120	110	120	110	5	75.0-125			7.94	20
Chromium	20.0	44.8	170	153	125	109	5	75.0-125			9.96	20
Copper	20.0	23.8	144	132	120	108	5	75.0-125			8.90	20
Selenium	20.0	ND	112	105	112	105	5	75.0-125			6.53	20
Silver	4.00	ND	24.3	21.5	122	108	5	75.0-125			12.1	20
Zinc	20.0	ND	119	116	111	108	5	75.0-125			2.78	20

Method Blank (MB)

(MB) R3540414-2 06/17/20 23:37

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0275	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*93.6*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3540414-1 06/17/20 22:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.65	103	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*107*	*77.0-120*	

L1228789-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228789-10 06/18/20 04:11 • (MS) R3540414-3 06/18/20 07:36 • (MSD) R3540414-4 06/18/20 07:56

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	53.6	ND	40.7	41.0	75.9	76.5	25	10.0-151			0.734	28
(S) a,a,a-Trifluorotoluene(FID)					*105*	*105*		*77.0-120*				

Method Blank (MB)

(MB) R3539947-3 06/17/20 00:36

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	*98.9*			*75.0-131*
(S) 4-Bromofluorobenzene	*96.9*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*91.9*			*70.0-130*

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

(LCS) R3539947-1 06/16/20 23:20 • (LCSD) R3539947-2 06/16/20 23:39

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	0.119	0.120	95.2	96.0	70.0-123			0.837	20
Ethylbenzene	0.125	0.117	0.118	93.6	94.4	74.0-126			0.851	20
Toluene	0.125	0.106	0.105	84.8	84.0	75.0-121			0.948	20
Xylenes, Total	0.375	0.344	0.322	91.7	85.9	72.0-127			6.61	20
(S) Toluene-d8				*92.5*	*92.4*	*75.0-131*				
(S) 4-Bromofluorobenzene				*96.8*	*97.6*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*100*	*93.8*	*70.0-130*				

L1229456-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1229456-09 06/17/20 06:20 • (MS) R3539947-4 06/17/20 07:37 • (MSD) R3539947-5 06/17/20 07:56

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	ND	0.127	0.119	102	95.2	1	10.0-149			6.50	37
Ethylbenzene	0.125	ND	0.125	0.124	100	99.2	1	10.0-160			0.803	38
Toluene	0.125	ND	0.115	0.111	92.0	88.8	1	10.0-156			3.54	38
Xylenes, Total	0.375	ND	0.337	0.359	89.9	95.7	1	10.0-160			6.32	38
(S) Toluene-d8					*92.3*	*94.4*		*75.0-131*				
(S) 4-Bromofluorobenzene					*97.6*	*97.6*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*97.0*	*92.2*		*70.0-130*				

Method Blank (MB)

(MB) R3539958-1 06/18/20 00:18

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	*97.6*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3539958-2 06/18/20 00:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	47.2	94.4	50.0-150	
(S) o-Terphenyl			*103*	*18.0-148*	

L1229456-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1229456-07 06/18/20 03:15 • (MS) R3539958-3 06/18/20 03:28 • (MSD) R3539958-4 06/18/20 03:40

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 %
TPH (GC/FID) High Fraction	48.6	ND	45.6	47.2	86.5	87.8	1	50.0-150			3.45	20
(S) o-Terphenyl					*89.8*	*93.7*		*18.0-148*				

Method Blank (MB)

(MB) R3539566-2 06/17/20 08:36

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	*92.3*			*14.0-149*
(S) 2-Fluorobiphenyl	*79.0*			*34.0-125*
(S) p-Terphenyl-d14	*81.7*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3539566-1 06/17/20 08:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0599	74.9	50.0-126	
Acenaphthene	0.0800	0.0696	87.0	50.0-120	
Acenaphthylene	0.0800	0.0713	89.1	50.0-120	
Benzo(a)anthracene	0.0800	0.0683	85.4	45.0-120	
Benzo(a)pyrene	0.0800	0.0612	76.5	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0680	85.0	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0552	69.0	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0622	77.8	49.0-125	
Chrysene	0.0800	0.0659	82.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0555	69.4	47.0-125	
Fluoranthene	0.0800	0.0656	82.0	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3539566-1 06/17/20 08:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0672	84.0	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0571	71.4	46.0-125	
Naphthalene	0.0800	0.0647	80.9	50.0-120	
Phenanthrene	0.0800	0.0639	79.9	47.0-120	
Pyrene	0.0800	0.0662	82.8	43.0-123	
1-Methylnaphthalene	0.0800	0.0710	88.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0651	81.4	50.0-120	
2-Chloronaphthalene	0.0800	0.0670	83.8	50.0-120	
(S) Nitrobenzene-d5			*99.8*	*14.0-149*	
(S) 2-Fluorobiphenyl			*84.8*	*34.0-125*	
(S) p-Terphenyl-d14			*84.9*	*23.0-120*	

L1228053-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228053-01 06/17/20 09:18 • (MS) R3539566-3 06/17/20 09:38 • (MSD) R3539566-4 06/17/20 09:59

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 %
Anthracene	0.0779	ND	0.0596	0.0466	69.6	52.9	1	10.0-145			24.5	30
Acenaphthene	0.0779	ND	0.0659	0.0568	84.5	72.8	1	14.0-127			14.8	27
Acenaphthylene	0.0779	ND	0.0681	0.0582	87.3	74.6	1	21.0-124			15.7	25
Benzo(a)anthracene	0.0779	ND	0.0744	0.0564	91.2	68.1	1	10.0-139			27.5	30
Benzo(a)pyrene	0.0779	ND	0.0649	0.0505	83.2	64.7	1	10.0-141			25.0	31
Benzo(b)fluoranthene	0.0779	ND	0.0696	0.0508	86.3	62.2	1	10.0-140			31.2	36
Benzo(g,h,i)perylene	0.0779	ND	0.0550	0.0428	70.5	54.9	1	10.0-140			24.9	33
Benzo(k)fluoranthene	0.0779	ND	0.0584	0.0482	74.9	61.8	1	10.0-137			19.1	31
Chrysene	0.0779	ND	0.0667	0.0504	80.3	59.4	1	10.0-145			27.8	30
Dibenz(a,h)anthracene	0.0779	ND	0.0551	0.0422	70.6	54.1	1	10.0-132			26.5	31
Fluoranthene	0.0779	0.00755	0.0715	0.0561	82.0	62.2	1	10.0-153			24.1	33
Fluorene	0.0779	ND	0.0620	0.0525	79.5	67.3	1	11.0-130			16.6	29
Indeno(1,2,3-cd)pyrene	0.0779	ND	0.0563	0.0437	72.2	56.0	1	10.0-137			25.2	32
Naphthalene	0.0779	ND	0.0622	0.0554	79.7	71.0	1	10.0-135			11.6	27
Phenanthrene	0.0779	ND	0.0650	0.0526	83.3	67.4	1	10.0-144			21.1	31
Pyrene	0.0779	0.0130	0.0822	0.0586	88.7	58.5	1	10.0-148			33.5	35
1-Methylnaphthalene	0.0779	ND	0.0667	0.0593	85.5	76.0	1	10.0-142			11.7	28
2-Methylnaphthalene	0.0779	ND	0.0617	0.0544	79.1	69.7	1	10.0-137			12.6	28
2-Chloronaphthalene	0.0779	ND	0.0622	0.0551	79.7	70.6	1	29.0-120			12.1	24
(S) Nitrobenzene-d5					*105*	*86.6*		*14.0-149*				
(S) 2-Fluorobiphenyl					*84.9*	*69.7*		*34.0-125*				
(S) p-Terphenyl-d14					*90.4*	*67.4*		*23.0-120*				

Method Blank (MB)

(MB) R3540002-2 06/17/20 19:48

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	*79.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*86.6*			*34.0-125*
(S) p-Terphenyl-d14	*85.6*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3540002-1 06/17/20 19:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0637	79.6	50.0-126	
Acenaphthene	0.0800	0.0654	81.8	50.0-120	
Acenaphthylene	0.0800	0.0662	82.8	50.0-120	
Benzo(a)anthracene	0.0800	0.0637	79.6	45.0-120	
Benzo(a)pyrene	0.0800	0.0597	74.6	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0627	78.4	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0645	80.6	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0672	84.0	49.0-125	
Chrysene	0.0800	0.0621	77.6	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0656	82.0	47.0-125	
Fluoranthene	0.0800	0.0642	80.3	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3540002-1 06/17/20 19:25

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0663	82.9	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0655	81.9	46.0-125	
Naphthalene	0.0800	0.0652	81.5	50.0-120	
Phenanthrene	0.0800	0.0633	79.1	47.0-120	
Pyrene	0.0800	0.0627	78.4	43.0-123	
1-Methylnaphthalene	0.0800	0.0676	84.5	51.0-121	
2-Methylnaphthalene	0.0800	0.0653	81.6	50.0-120	
2-Chloronaphthalene	0.0800	0.0656	82.0	50.0-120	
(S) Nitrobenzene-d5			*84.1*	*14.0-149*	
(S) 2-Fluorobiphenyl			*88.2*	*34.0-125*	
(S) p-Terphenyl-d14			*85.6*	*23.0-120*	

L1229102-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1229102-01 06/18/20 03:26 • (MS) R3540002-3 06/18/20 03:49 • (MSD) R3540002-4 06/18/20 04:12

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 %
Anthracene	0.0788	0.0109	0.0775	0.0695	84.5	74.4	1	10.0-145			10.9	30
Acenaphthene	0.0788	0.0189	0.0783	0.0702	75.4	65.1	1	14.0-127			10.9	27
Acenaphthylene	0.0788	ND	0.0770	0.0716	97.7	90.9	1	21.0-124			7.27	25
Benzo(a)anthracene	0.0788	0.0112	0.0844	0.0674	92.9	71.3	1	10.0-139			22.4	30
Benzo(a)pyrene	0.0788	0.0148	0.0770	0.0613	78.9	59.0	1	10.0-141			22.7	31
Benzo(b)fluoranthene	0.0788	0.0294	0.0831	0.0612	68.1	40.4	1	10.0-140			30.4	36
Benzo(g,h,i)perylene	0.0788	0.0347	0.0802	0.0616	57.7	34.1	1	10.0-140			26.2	33
Benzo(k)fluoranthene	0.0788	0.00734	0.0642	0.0583	72.2	64.7	1	10.0-137			9.63	31
Chrysene	0.0788	0.0123	0.0749	0.0593	79.4	59.6	1	10.0-145			23.2	30
Dibenz(a,h)anthracene	0.0788	ND	0.0585	0.0512	67.8	58.5	1	10.0-132			13.3	31
Fluoranthene	0.0788	0.0168	0.0867	0.0646	88.7	60.7	1	10.0-153			29.2	33
Fluorene	0.0788	0.0227	0.0859	0.0768	80.2	68.7	1	11.0-130			11.2	29
Indeno(1,2,3-cd)pyrene	0.0788	0.0181	0.0714	0.0579	67.6	50.5	1	10.0-137			20.9	32
Naphthalene	0.0788	2.54	1.76	1.41	0.000	0.000	1	10.0-135	V	V	22.1	27
Phenanthrene	0.0788	0.0298	0.0888	0.0747	74.9	57.0	1	10.0-144			17.2	31
Pyrene	0.0788	0.0194	0.0922	0.0684	92.4	62.2	1	10.0-148			29.6	35
1-Methylnaphthalene	0.0788	1.74	1.46	1.16	0.000	0.000	1	10.0-142	V	V	22.9	28
2-Methylnaphthalene	0.0788	3.13	2.53	2.02	0.000	0.000	1	10.0-137	V	V	22.4	28
2-Chloronaphthalene	0.0788	ND	0.0625	0.0581	79.3	73.7	1	29.0-120			7.30	24
(S) Nitrobenzene-d5					*107*	*101*		*14.0-149*				
(S) 2-Fluorobiphenyl					*81.5*	*74.1*		*34.0-125*				
(S) p-Terphenyl-d14					*86.5*	*79.8*		*23.0-120*				

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
B	The same analyte is found in the associated blank.
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.
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.
V	The sample concentration is too high to evaluate accurate spike recoveries.

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

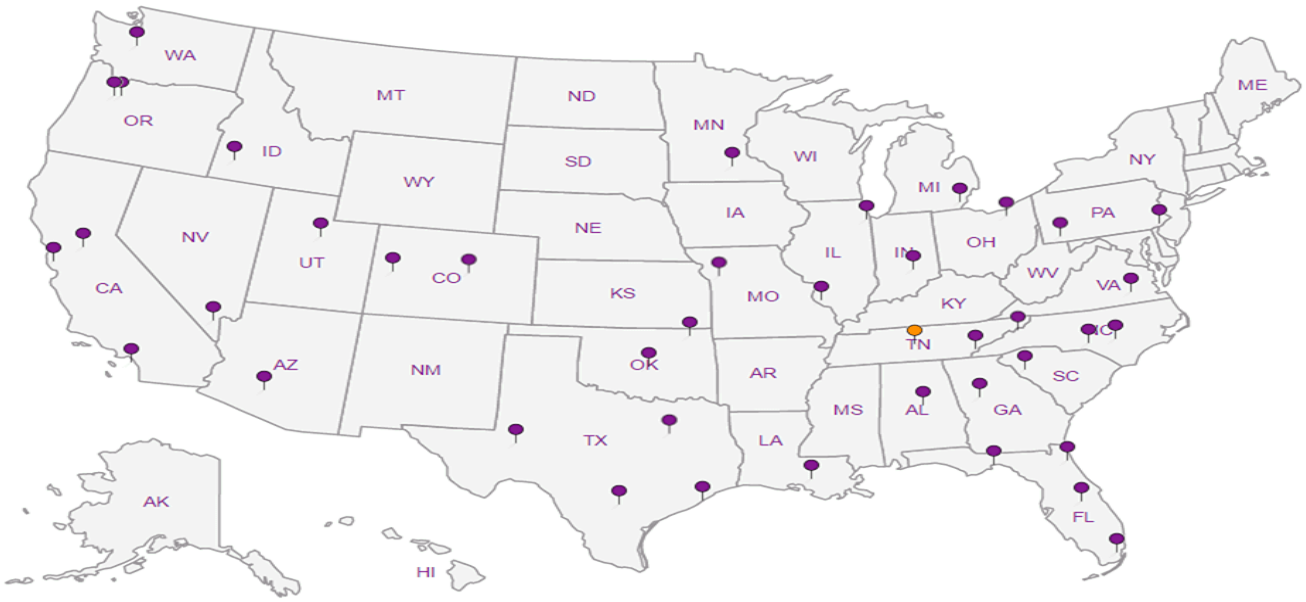
Third Party Federal Accreditations

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 and Gas
143 Diamond Avenue
Parachute, CO 81635

Billing Information: **Same as left**

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

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

Report to: **Blair Rollins**

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

Project Description: FZ6

City/State Collected: **CO**

Phone: **(970) 640-6919**
Fax:

Client Project # FZ6

Lab Project #

L# 1229456

T 1210

Collected by (print): CHANCE HOLPER

Site/Facility ID #

P.O. #

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)
X Three Day

Quote #

Date Results Needed

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH (DRO and GRO)	BTEX	Table 910-1 metals in soil	Table 910-1 PAHs	EC, SAR, pH	Remarks	Sample # (lab only)
20200615 - FZ6 - EBOT - 25' 1310	GRAB	SS	25'	6/15/2020	1310	2	X	X	X	X	X		01
20200615 - FZ6 - WBOT - 15' 1300			15'		1300	2	X	X	X	X	X		02
20200615 - FZ6 - NWALLW - 12' - 1320			12'		1320	2	X	X	X	X	X		03
20200615 - FZ6 - NWALLE - 21' - 1330			21'		1330	2	X	X	X	X	X		04
20200615 - FZ6 - EWALL N - 21' - 1340			21'		1340	2	X	X	X	X	X		05
20200615 - FZ6 - SWALL E - 18' - 1350			18'		1350	2	X	X	X	X	X		06
20200615 - FZ6 - SWALLW - 12' - 1400			12'		1400	2	X	X	X	X	X		07
20200615 - FZ6 - SWWALLS - 10' - 1410			10'		1410	2	X	X	X	X	X		08
20200615 - FZ6 - WWALL N - 10' - 1420			10'		1420	2	X	X	X	X	X		09

* 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 # 1676 2750 7092

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X 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
	6/15/2020	1600		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.7 °C Bottles Received: 18
	6/15/2020	1700		1.4-, 1=1.3
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
			Hanley M	6/16/20 845

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

June 25, 2020

Caerus Oil and Gas

Sample Delivery Group:	L1230545
Samples Received:	06/18/2020
Project Number:	F26
Description:	F26 Stockpile
Site:	F26
Report To:	Blair Rollins 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By:

Jason Romer
Project Manager

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20200617-F26 STOCK 1 L1230545-01 Solid

Collected by: Matt Kasten | Collected date/time: 06/17/20 09:05 | Received date/time: 06/18/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494734	1	06/22/20 23:33	06/22/20 23:33	EL	Mt. Juliet, TN
Calculated Results	WG1495779	1	06/21/20 06:33	06/23/20 17:01	KPS	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1496642	1	06/22/20 19:08	06/23/20 17:01	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1497168	1	06/23/20 13:30	06/23/20 14:26	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1497173	1	06/23/20 09:52	06/23/20 16:00	LRP	Mt. Juliet, TN
Mercury by Method 7471A	WG1495527	1	06/19/20 08:41	06/21/20 20:06	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1495779	1	06/21/20 06:33	06/22/20 16:48	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1496910	25	06/19/20 12:10	06/23/20 09:40	AV	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1496286	1	06/20/20 13:42	06/20/20 20:00	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1495439	1	06/20/20 01:49	06/20/20 14:36	LEA	Mt. Juliet, TN

20200617-F26 STOCK 2 L1230545-02 Solid

Collected by: Matt Kasten | Collected date/time: 06/17/20 09:15 | Received date/time: 06/18/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494734	1	06/22/20 23:48	06/22/20 23:48	EL	Mt. Juliet, TN
Calculated Results	WG1495779	1	06/21/20 06:33	06/23/20 17:02	KPS	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1496642	1	06/22/20 19:08	06/23/20 17:02	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1497168	1	06/23/20 13:30	06/23/20 14:26	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1497173	1	06/23/20 09:52	06/23/20 16:00	LRP	Mt. Juliet, TN
Mercury by Method 7471A	WG1495527	1	06/19/20 08:41	06/21/20 20:09	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1495779	1	06/21/20 06:33	06/22/20 16:51	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1495325	1	06/18/20 19:25	06/19/20 17:20	AV	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1496286	1	06/20/20 13:42	06/20/20 20:12	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1495439	1	06/20/20 01:49	06/20/20 14:56	LEA	Mt. Juliet, TN

20200617-F26 STOCK 3 L1230545-03 Solid

Collected by: Matt Kasten | Collected date/time: 06/17/20 09:40 | Received date/time: 06/18/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494734	1	06/22/20 23:50	06/22/20 23:50	EL	Mt. Juliet, TN
Calculated Results	WG1495779	1	06/21/20 06:33	06/23/20 17:03	KPS	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1496642	1	06/22/20 19:08	06/23/20 17:03	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1497168	1	06/23/20 13:30	06/23/20 14:26	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1497173	1	06/23/20 09:52	06/23/20 16:00	LRP	Mt. Juliet, TN
Mercury by Method 7471A	WG1495527	1	06/19/20 08:41	06/21/20 20:11	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1495779	1	06/21/20 06:33	06/22/20 16:54	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1495325	25	06/18/20 19:25	06/19/20 17:41	AV	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1496286	1	06/20/20 13:42	06/20/20 20:25	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1495439	1	06/20/20 01:49	06/20/20 15:17	LEA	Mt. Juliet, TN

20200617-F26 STOCK 4 L1230545-04 Solid

Collected by: Matt Kasten | Collected date/time: 06/17/20 09:50 | Received date/time: 06/18/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494734	1	06/22/20 23:53	06/22/20 23:53	EL	Mt. Juliet, TN
Calculated Results	WG1495779	1	06/21/20 06:33	06/23/20 17:03	KPS	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1496642	1	06/22/20 19:08	06/23/20 17:03	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1497168	1	06/23/20 13:30	06/23/20 14:26	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1497173	1	06/23/20 09:52	06/23/20 16:00	LRP	Mt. Juliet, TN
Mercury by Method 7471A	WG1495527	1	06/19/20 08:41	06/21/20 20:14	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1495779	1	06/21/20 06:33	06/22/20 16:57	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG1497482	25	06/18/20 19:25	06/23/20 15:42	DWR	Mt. Juliet, TN

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

20200617-F26 STOCK 4 L1230545-04 Solid

Collected by: Matt Kasten
Collected date/time: 06/17/20 09:50
Received date/time: 06/18/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8021	WG1495325	1	06/18/20 19:25	06/19/20 18:01	AV	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1496286	1	06/20/20 13:42	06/20/20 20:38	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1495439	1	06/20/20 01:49	06/20/20 15:38	LEA	Mt. Juliet, TN

20200617-F26 STOCK 5 L1230545-05 Solid

Collected by: Matt Kasten
Collected date/time: 06/17/20 10:00
Received date/time: 06/18/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494734	1	06/22/20 23:56	06/22/20 23:56	EL	Mt. Juliet, TN
Calculated Results	WG1495779	1	06/21/20 06:33	06/23/20 17:04	KPS	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1496642	1	06/22/20 19:08	06/23/20 17:04	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1497168	1	06/23/20 13:30	06/23/20 14:26	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1497173	1	06/23/20 09:52	06/23/20 16:00	LRP	Mt. Juliet, TN
Mercury by Method 7471A	WG1495527	1	06/19/20 08:41	06/21/20 20:16	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1495779	1	06/21/20 06:33	06/22/20 17:00	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1496910	25	06/19/20 12:10	06/23/20 10:01	AV	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1496286	1	06/20/20 13:42	06/20/20 20:50	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1495439	1	06/20/20 01:49	06/20/20 15:59	LEA	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.

Jason Romer
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.01		1	06/22/2020 23:33	WG1494734

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	42.0		1.00	1	06/23/2020 17:01	WG1495779

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	06/23/2020 17:01	WG1496642

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.55	T8	1	06/23/2020 14:26	WG1497168

Sample Narrative:

L1230545-01 WG1497168: 8.55 at 25.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	297		10.0	1	06/23/2020 16:00	WG1497173

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/21/2020 20:06	WG1495527

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	9.00		2.00	1	06/22/2020 16:48	WG1495779
Barium	270		0.500	1	06/22/2020 16:48	WG1495779
Cadmium	0.773		0.500	1	06/22/2020 16:48	WG1495779
Chromium	42.0		1.00	1	06/22/2020 16:48	WG1495779
Copper	23.6		2.00	1	06/22/2020 16:48	WG1495779
Lead	17.6		0.500	1	06/22/2020 16:48	WG1495779
Nickel	29.9		2.00	1	06/22/2020 16:48	WG1495779
Selenium	ND		2.00	1	06/22/2020 16:48	WG1495779
Silver	ND		1.00	1	06/22/2020 16:48	WG1495779
Zinc	76.0		5.00	1	06/22/2020 16:48	WG1495779

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.0125	25	06/23/2020 09:40	WG1496910
Toluene	0.127		0.125	25	06/23/2020 09:40	WG1496910
Ethylbenzene	1.25		0.0125	25	06/23/2020 09:40	WG1496910
Total Xylene	6.90		0.0375	25	06/23/2020 09:40	WG1496910
TPH (GC/FID) Low Fraction	150		2.50	25	06/23/2020 09:40	WG1496910

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*102*		*77.0-120*		*06/23/2020 09:40*	WG1496910
(S) a,a,a-Trifluorotoluene(PID)	*101*		*72.0-128*		*06/23/2020 09:40*	WG1496910

Sample Narrative:

L1230545-01 WG1496910: Non-target compounds too high to run at a lower dilution.

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	118		4.00	1	06/20/2020 20:00	WG1496286
(S) o-Terphenyl	*45.0*		*18.0-148*		*06/20/2020 20:00*	WG1496286

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	06/20/2020 14:36	WG1495439
Acenaphthene	ND		0.00600	1	06/20/2020 14:36	WG1495439
Acenaphthylene	ND		0.00600	1	06/20/2020 14:36	WG1495439
Benzo(a)anthracene	ND		0.00600	1	06/20/2020 14:36	WG1495439
Benzo(a)pyrene	ND		0.00600	1	06/20/2020 14:36	WG1495439
Benzo(b)fluoranthene	ND		0.00600	1	06/20/2020 14:36	WG1495439
Benzo(g,h,i)perylene	ND		0.00600	1	06/20/2020 14:36	WG1495439
Benzo(k)fluoranthene	ND		0.00600	1	06/20/2020 14:36	WG1495439
Chrysene	ND		0.00600	1	06/20/2020 14:36	WG1495439
Dibenz(a,h)anthracene	ND		0.00600	1	06/20/2020 14:36	WG1495439
Fluoranthene	ND		0.00600	1	06/20/2020 14:36	WG1495439
Fluorene	0.0127		0.00600	1	06/20/2020 14:36	WG1495439
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/20/2020 14:36	WG1495439
Naphthalene	ND		0.0200	1	06/20/2020 14:36	WG1495439
Phenanthrene	0.00712		0.00600	1	06/20/2020 14:36	WG1495439
Pyrene	ND		0.00600	1	06/20/2020 14:36	WG1495439
1-Methylnaphthalene	0.0433		0.0200	1	06/20/2020 14:36	WG1495439
2-Methylnaphthalene	0.0943		0.0200	1	06/20/2020 14:36	WG1495439
2-Chloronaphthalene	ND		0.0200	1	06/20/2020 14:36	WG1495439
(S) p-Terphenyl-d14	*61.2*		*23.0-120*		*06/20/2020 14:36*	WG1495439
(S) Nitrobenzene-d5	*140*		*14.0-149*		*06/20/2020 14:36*	WG1495439
(S) 2-Fluorobiphenyl	*62.2*		*34.0-125*		*06/20/2020 14:36*	WG1495439

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.695		1	06/22/2020 23:48	WG1494734

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	35.5		1.00	1	06/23/2020 17:02	WG1495779

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	06/23/2020 17:02	WG1496642

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.70	T8	1	06/23/2020 14:26	WG1497168

Sample Narrative:

L1230545-02 WG1497168: 8.7 at 25.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	211		10.0	1	06/23/2020 16:00	WG1497173

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/21/2020 20:09	WG1495527

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	20.8		2.00	1	06/22/2020 16:51	WG1495779
Barium	289		0.500	1	06/22/2020 16:51	WG1495779
Cadmium	0.568		0.500	1	06/22/2020 16:51	WG1495779
Chromium	35.5		1.00	1	06/22/2020 16:51	WG1495779
Copper	22.6		2.00	1	06/22/2020 16:51	WG1495779
Lead	14.6		0.500	1	06/22/2020 16:51	WG1495779
Nickel	25.8		2.00	1	06/22/2020 16:51	WG1495779
Selenium	ND		2.00	1	06/22/2020 16:51	WG1495779
Silver	ND		1.00	1	06/22/2020 16:51	WG1495779
Zinc	62.1		5.00	1	06/22/2020 16:51	WG1495779

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00223		0.000500	1	06/19/2020 17:20	WG1495325
Toluene	0.00682		0.00500	1	06/19/2020 17:20	WG1495325
Ethylbenzene	0.0684		0.000500	1	06/19/2020 17:20	WG1495325
Total Xylene	0.0818		0.00150	1	06/19/2020 17:20	WG1495325
TPH (GC/FID) Low Fraction	6.70		0.100	1	06/19/2020 17:20	WG1495325

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*87.4*		*77.0-120*		*06/19/2020 17:20*	WG1495325
(S) a,a,a-Trifluorotoluene(PID)	*94.1*		*72.0-128*		*06/19/2020 17:20*	WG1495325

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	238		4.00	1	06/20/2020 20:12	WG1496286
(S) o-Terphenyl	*50.6*		*18.0-148*		*06/20/2020 20:12*	WG1496286

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	06/20/2020 14:56	WG1495439
Acenaphthene	ND		0.00600	1	06/20/2020 14:56	WG1495439
Acenaphthylene	ND		0.00600	1	06/20/2020 14:56	WG1495439
Benzo(a)anthracene	ND		0.00600	1	06/20/2020 14:56	WG1495439
Benzo(a)pyrene	ND		0.00600	1	06/20/2020 14:56	WG1495439
Benzo(b)fluoranthene	ND		0.00600	1	06/20/2020 14:56	WG1495439
Benzo(g,h,i)perylene	ND		0.00600	1	06/20/2020 14:56	WG1495439
Benzo(k)fluoranthene	ND		0.00600	1	06/20/2020 14:56	WG1495439
Chrysene	ND		0.00600	1	06/20/2020 14:56	WG1495439
Dibenz(a,h)anthracene	ND		0.00600	1	06/20/2020 14:56	WG1495439
Fluoranthene	ND		0.00600	1	06/20/2020 14:56	WG1495439
Fluorene	0.0121		0.00600	1	06/20/2020 14:56	WG1495439
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/20/2020 14:56	WG1495439
Naphthalene	ND		0.0200	1	06/20/2020 14:56	WG1495439
Phenanthrene	0.00837		0.00600	1	06/20/2020 14:56	WG1495439
Pyrene	ND		0.00600	1	06/20/2020 14:56	WG1495439
1-Methylnaphthalene	ND		0.0200	1	06/20/2020 14:56	WG1495439
2-Methylnaphthalene	0.0302		0.0200	1	06/20/2020 14:56	WG1495439
2-Chloronaphthalene	ND		0.0200	1	06/20/2020 14:56	WG1495439
(S) p-Terphenyl-d14	*65.0*		*23.0-120*		*06/20/2020 14:56*	WG1495439
(S) Nitrobenzene-d5	*180*	J1	*14.0-149*		*06/20/2020 14:56*	WG1495439
(S) 2-Fluorobiphenyl	*64.0*		*34.0-125*		*06/20/2020 14:56*	WG1495439

Sample Narrative:

L1230545-02 WG1495439: Surrogate failure due to matrix interference

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.726		1	06/22/2020 23:50	WG1494734

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	34.7		1.00	1	06/23/2020 17:03	WG1495779

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	06/23/2020 17:03	WG1496642

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.60	T8	1	06/23/2020 14:26	WG1497168

Sample Narrative:

L1230545-03 WG1497168: 8.6 at 25.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	214		10.0	1	06/23/2020 16:00	WG1497173

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/21/2020 20:11	WG1495527

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.92		2.00	1	06/22/2020 16:54	WG1495779
Barium	268		0.500	1	06/22/2020 16:54	WG1495779
Cadmium	0.862		0.500	1	06/22/2020 16:54	WG1495779
Chromium	34.7		1.00	1	06/22/2020 16:54	WG1495779
Copper	21.4		2.00	1	06/22/2020 16:54	WG1495779
Lead	15.3		0.500	1	06/22/2020 16:54	WG1495779
Nickel	29.9		2.00	1	06/22/2020 16:54	WG1495779
Selenium	ND		2.00	1	06/22/2020 16:54	WG1495779
Silver	ND		1.00	1	06/22/2020 16:54	WG1495779
Zinc	62.8		5.00	1	06/22/2020 16:54	WG1495779

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.0125	25	06/19/2020 17:41	WG1495325
Toluene	ND		0.125	25	06/19/2020 17:41	WG1495325
Ethylbenzene	0.921		0.0125	25	06/19/2020 17:41	WG1495325
Total Xylene	0.924		0.0375	25	06/19/2020 17:41	WG1495325
TPH (GC/FID) Low Fraction	95.7		2.50	25	06/19/2020 17:41	WG1495325

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*105*		*77.0-120*		*06/19/2020 17:41*	WG1495325
(S) a,a,a-Trifluorotoluene(PID)	*100*		*72.0-128*		*06/19/2020 17:41*	WG1495325

Sample Narrative:

L1230545-03 WG1495325: Non-target compounds too high to run at a lower dilution.

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	265		4.00	1	06/20/2020 20:25	WG1496286
(S) o-Terphenyl	*53.8*		*18.0-148*		*06/20/2020 20:25*	WG1496286

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00715		0.00600	1	06/20/2020 15:17	WG1495439
Acenaphthene	ND		0.00600	1	06/20/2020 15:17	WG1495439
Acenaphthylene	ND		0.00600	1	06/20/2020 15:17	WG1495439
Benzo(a)anthracene	ND		0.00600	1	06/20/2020 15:17	WG1495439
Benzo(a)pyrene	ND		0.00600	1	06/20/2020 15:17	WG1495439
Benzo(b)fluoranthene	ND		0.00600	1	06/20/2020 15:17	WG1495439
Benzo(g,h,i)perylene	ND		0.00600	1	06/20/2020 15:17	WG1495439
Benzo(k)fluoranthene	ND		0.00600	1	06/20/2020 15:17	WG1495439
Chrysene	ND		0.00600	1	06/20/2020 15:17	WG1495439
Dibenz(a,h)anthracene	ND		0.00600	1	06/20/2020 15:17	WG1495439
Fluoranthene	ND		0.00600	1	06/20/2020 15:17	WG1495439
Fluorene	0.0204		0.00600	1	06/20/2020 15:17	WG1495439
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/20/2020 15:17	WG1495439
Naphthalene	ND		0.0200	1	06/20/2020 15:17	WG1495439
Phenanthrene	0.0142		0.00600	1	06/20/2020 15:17	WG1495439
Pyrene	ND		0.00600	1	06/20/2020 15:17	WG1495439
1-Methylnaphthalene	0.0221		0.0200	1	06/20/2020 15:17	WG1495439
2-Methylnaphthalene	0.0265		0.0200	1	06/20/2020 15:17	WG1495439
2-Chloronaphthalene	ND		0.0200	1	06/20/2020 15:17	WG1495439
(S) p-Terphenyl-d14	*71.0*		*23.0-120*		*06/20/2020 15:17*	WG1495439
(S) Nitrobenzene-d5	*170*	J1	*14.0-149*		*06/20/2020 15:17*	WG1495439
(S) 2-Fluorobiphenyl	*70.6*		*34.0-125*		*06/20/2020 15:17*	WG1495439

Sample Narrative:

L1230545-03 WG1495439: Surrogate failure due to matrix interference

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.778		1	06/22/2020 23:53	WG1494734

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	33.3		1.00	1	06/23/2020 17:03	WG1495779

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	06/23/2020 17:03	WG1496642

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.56	T8	1	06/23/2020 14:26	WG1497168

Sample Narrative:

L1230545-04 WG1497168: 8.56 at 25.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	226		10.0	1	06/23/2020 16:00	WG1497173

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/21/2020 20:14	WG1495527

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	10.7		2.00	1	06/22/2020 16:57	WG1495779
Barium	207		0.500	1	06/22/2020 16:57	WG1495779
Cadmium	0.636		0.500	1	06/22/2020 16:57	WG1495779
Chromium	33.3		1.00	1	06/22/2020 16:57	WG1495779
Copper	19.1		2.00	1	06/22/2020 16:57	WG1495779
Lead	12.1		0.500	1	06/22/2020 16:57	WG1495779
Nickel	25.7		2.00	1	06/22/2020 16:57	WG1495779
Selenium	ND		2.00	1	06/22/2020 16:57	WG1495779
Silver	ND		1.00	1	06/22/2020 16:57	WG1495779
Zinc	58.1		5.00	1	06/22/2020 16:57	WG1495779

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00508		0.000500	1	06/19/2020 18:01	WG1495325
Toluene	0.0220		0.00500	1	06/19/2020 18:01	WG1495325
Ethylbenzene	0.112		0.000500	1	06/19/2020 18:01	WG1495325
Total Xylene	0.103		0.00150	1	06/19/2020 18:01	WG1495325
TPH (GC/FID) Low Fraction	80.2		2.50	25	06/23/2020 15:42	WG1497482

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*90.4*		*77.0-120*		*06/19/2020 18:01*	WG1495325
(S) a,a,a-Trifluorotoluene(FID)	*99.1*		*77.0-120*		*06/23/2020 15:42*	WG1497482
(S) a,a,a-Trifluorotoluene(PID)	*92.6*		*72.0-128*		*06/19/2020 18:01*	WG1495325
(S) a,a,a-Trifluorotoluene(PID)	*0.000*	J2	*72.0-128*		*06/23/2020 15:42*	WG1497482

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	68.5		4.00	1	06/20/2020 20:38	WG1496286
(S) o-Terphenyl	*52.1*		*18.0-148*		*06/20/2020 20:38*	WG1496286

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	06/20/2020 15:38	WG1495439
Acenaphthene	ND		0.00600	1	06/20/2020 15:38	WG1495439
Acenaphthylene	ND		0.00600	1	06/20/2020 15:38	WG1495439
Benzo(a)anthracene	ND		0.00600	1	06/20/2020 15:38	WG1495439
Benzo(a)pyrene	ND		0.00600	1	06/20/2020 15:38	WG1495439
Benzo(b)fluoranthene	ND		0.00600	1	06/20/2020 15:38	WG1495439
Benzo(g,h,i)perylene	ND		0.00600	1	06/20/2020 15:38	WG1495439
Benzo(k)fluoranthene	ND		0.00600	1	06/20/2020 15:38	WG1495439
Chrysene	ND		0.00600	1	06/20/2020 15:38	WG1495439
Dibenz(a,h)anthracene	ND		0.00600	1	06/20/2020 15:38	WG1495439
Fluoranthene	ND		0.00600	1	06/20/2020 15:38	WG1495439
Fluorene	ND		0.00600	1	06/20/2020 15:38	WG1495439
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/20/2020 15:38	WG1495439
Naphthalene	ND		0.0200	1	06/20/2020 15:38	WG1495439
Phenanthrene	ND		0.00600	1	06/20/2020 15:38	WG1495439
Pyrene	ND		0.00600	1	06/20/2020 15:38	WG1495439
1-Methylnaphthalene	ND		0.0200	1	06/20/2020 15:38	WG1495439
2-Methylnaphthalene	ND		0.0200	1	06/20/2020 15:38	WG1495439
2-Chloronaphthalene	ND		0.0200	1	06/20/2020 15:38	WG1495439
(S) p-Terphenyl-d14	*66.1*		*23.0-120*		*06/20/2020 15:38*	WG1495439
(S) Nitrobenzene-d5	*104*		*14.0-149*		*06/20/2020 15:38*	WG1495439
(S) 2-Fluorobiphenyl	*66.1*		*34.0-125*		*06/20/2020 15:38*	WG1495439

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.607		1	06/22/2020 23:56	WG1494734

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	37.1		1.00	1	06/23/2020 17:04	WG1495779

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	06/23/2020 17:04	WG1496642

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.49	T8	1	06/23/2020 14:26	WG1497168

Sample Narrative:

L1230545-05 WG1497168: 8.49 at 25.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	230		10.0	1	06/23/2020 16:00	WG1497173

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/21/2020 20:16	WG1495527

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	18.8		2.00	1	06/22/2020 17:00	WG1495779
Barium	288		0.500	1	06/22/2020 17:00	WG1495779
Cadmium	0.870		0.500	1	06/22/2020 17:00	WG1495779
Chromium	37.1		1.00	1	06/22/2020 17:00	WG1495779
Copper	25.7		2.00	1	06/22/2020 17:00	WG1495779
Lead	18.4		0.500	1	06/22/2020 17:00	WG1495779
Nickel	33.7		2.00	1	06/22/2020 17:00	WG1495779
Selenium	ND		2.00	1	06/22/2020 17:00	WG1495779
Silver	ND		1.00	1	06/22/2020 17:00	WG1495779
Zinc	71.6		5.00	1	06/22/2020 17:00	WG1495779

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.0125	25	06/23/2020 10:01	WG1496910
Toluene	ND		0.125	25	06/23/2020 10:01	WG1496910
Ethylbenzene	0.733		0.0125	25	06/23/2020 10:01	WG1496910
Total Xylene	0.827		0.0375	25	06/23/2020 10:01	WG1496910
TPH (GC/FID) Low Fraction	90.0		2.50	25	06/23/2020 10:01	WG1496910

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*105*		*77.0-120*		*06/23/2020 10:01*	WG1496910
(S) a,a,a-Trifluorotoluene(PID)	*101*		*72.0-128*		*06/23/2020 10:01*	WG1496910

Sample Narrative:

L1230545-05 WG1496910: Non-target compounds too high to run at a lower dilution.

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	220		4.00	1	06/20/2020 20:50	WG1496286
(S) o-Terphenyl	*53.0*		*18.0-148*		*06/20/2020 20:50*	WG1496286

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00792		0.00600	1	06/20/2020 15:59	WG1495439
Acenaphthene	0.00627		0.00600	1	06/20/2020 15:59	WG1495439
Acenaphthylene	ND		0.00600	1	06/20/2020 15:59	WG1495439
Benzo(a)anthracene	ND		0.00600	1	06/20/2020 15:59	WG1495439
Benzo(a)pyrene	ND		0.00600	1	06/20/2020 15:59	WG1495439
Benzo(b)fluoranthene	ND		0.00600	1	06/20/2020 15:59	WG1495439
Benzo(g,h,i)perylene	ND		0.00600	1	06/20/2020 15:59	WG1495439
Benzo(k)fluoranthene	ND		0.00600	1	06/20/2020 15:59	WG1495439
Chrysene	ND		0.00600	1	06/20/2020 15:59	WG1495439
Dibenz(a,h)anthracene	ND		0.00600	1	06/20/2020 15:59	WG1495439
Fluoranthene	ND		0.00600	1	06/20/2020 15:59	WG1495439
Fluorene	0.0285		0.00600	1	06/20/2020 15:59	WG1495439
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/20/2020 15:59	WG1495439
Naphthalene	ND		0.0200	1	06/20/2020 15:59	WG1495439
Phenanthrene	0.0204		0.00600	1	06/20/2020 15:59	WG1495439
Pyrene	ND		0.00600	1	06/20/2020 15:59	WG1495439
1-Methylnaphthalene	0.0659		0.0200	1	06/20/2020 15:59	WG1495439
2-Methylnaphthalene	0.0625		0.0200	1	06/20/2020 15:59	WG1495439
2-Chloronaphthalene	ND		0.0200	1	06/20/2020 15:59	WG1495439
(S) p-Terphenyl-d14	*72.1*		*23.0-120*		*06/20/2020 15:59*	WG1495439
(S) Nitrobenzene-d5	*192*	J1	*14.0-149*		*06/20/2020 15:59*	WG1495439
(S) 2-Fluorobiphenyl	*70.9*		*34.0-125*		*06/20/2020 15:59*	WG1495439

Sample Narrative:

L1230545-05 WG1495439: Surrogate failure due to matrix interference

Method Blank (MB)

(MB) R3542013-1 06/23/20 16:58

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

L1230545-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1230545-01 06/23/20 17:01 • (DUP) R3542013-7 06/23/20 17:02

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) R3542013-2 06/23/20 16:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium,Hexavalent	24.0	25.0	104	80.0-120	

L1229493-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1229493-01 06/23/20 16:59 • (MS) R3542013-3 06/23/20 17:00 • (MSD) R3542013-4 06/23/20 17:00

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 %
Chromium,Hexavalent	20.0	ND	18.6	18.2	93.2	91.0	1	75.0-125			2.39	20

L1229493-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1229493-01 06/23/20 16:59 • (MS) R3542013-5 06/23/20 17:01

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chromium,Hexavalent	669	ND	696	104	50	75.0-125	

Laboratory Control Sample (LCS)

(LCS) R3541911-1 06/23/20 14:26

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.98	99.8	99.0-101	

Sample Narrative:

LCS: 9.98 at 23.5C

Method Blank (MB)

(MB) R3542014-1 06/23/20 16:00

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

L1229128-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1229128-07 06/23/20 16:00 • (DUP) R3542014-3 06/23/20 16:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1380	1420	1	2.85		20

L1230762-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1230762-01 06/23/20 16:00 • (DUP) R3542014-4 06/23/20 16:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	6500	6550	1	0.766		20

Laboratory Control Sample (LCS)

(LCS) R3542014-2 06/23/20 16:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	445	451	101	85.0-115	

Method Blank (MB)

(MB) R3541138-1 06/21/20 19:25

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

Laboratory Control Sample (LCS)

(LCS) R3541138-2 06/21/20 19:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.504	101	80.0-120	

L1230229-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1230229-01 06/21/20 19:30 • (MS) R3541138-3 06/21/20 19:33 • (MSD) R3541138-4 06/21/20 19:35

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 %
Mercury	0.500	0.0428	1.48	0.518	288	95.0	1	75.0-125	J5	J3	96.4	20

Method Blank (MB)

(MB) R3541617-1 06/22/20 15:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.460	2.00
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	U		0.939	5.00

Laboratory Control Sample (LCS)

(LCS) R3541617-2 06/22/20 15:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	101	101	80.0-120	
Barium	100	104	104	80.0-120	
Cadmium	100	97.3	97.3	80.0-120	
Chromium	100	101	101	80.0-120	
Copper	100	99.7	99.7	80.0-120	
Lead	100	99.5	99.5	80.0-120	
Nickel	100	103	103	80.0-120	
Selenium	100	104	104	80.0-120	
Silver	20.0	18.7	93.5	80.0-120	
Zinc	100	99.3	99.3	80.0-120	

L1230277-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1230277-01 06/22/20 15:49 • (MS) R3541617-5 06/22/20 15:57 • (MSD) R3541617-6 06/22/20 15:59

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 %
Arsenic	100	5.28	105	107	99.6	102	1	75.0-125			2.41	20
Barium	100	74.1	184	195	110	121	1	75.0-125			5.34	20
Cadmium	100	ND	98.1	104	98.1	104	1	75.0-125			5.91	20
Chromium	100	11.7	118	121	106	109	1	75.0-125			2.32	20
Copper	100	6.35	111	114	104	108	1	75.0-125			3.34	20
Lead	100	107	158	117	51.1	9.90	1	75.0-125	J6	J3 J6	30.0	20
Nickel	100	7.17	115	122	108	115	1	75.0-125			6.08	20

L1230277-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1230277-01 06/22/20 15:49 • (MS) R3541617-5 06/22/20 15:57 • (MSD) R3541617-6 06/22/20 15:59

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 %
Selenium	100	ND	101	108	101	108	1	75.0-125			7.29	20
Silver	20.0	ND	18.9	20.1	94.4	100	1	75.0-125			6.17	20
Zinc	100	22.1	125	135	103	113	1	75.0-125			7.85	20

Method Blank (MB)

(MB) R3541977-1 06/23/20 11:35

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)	*99.3*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*0.000*	J2		*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3541977-2 06/23/20 12:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.47	118	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*0.000*	*72.0-128*	J2

Method Blank (MB)

(MB) R3541760-3 06/19/20 15:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000447	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*104*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*102*			*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3541760-1 06/19/20 15:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0521	104	76.0-121	
Toluene	0.0500	0.0552	110	80.0-120	
Ethylbenzene	0.0500	0.0551	110	80.0-124	
Total Xylene	0.150	0.162	108	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			*104*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*101*	*72.0-128*	

Laboratory Control Sample (LCS)

(LCS) R3541760-2 06/19/20 15:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.08	111	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*108*	*72.0-128*	

L1230545-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1230545-03 06/19/20 17:41 • (MS) R3541760-4 06/20/20 00:13 • (MSD) R3541760-5 06/20/20 00:34

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	1.24	ND	1.13	1.24	91.1	100	25	10.0-155			9.28	32
Toluene	1.24	ND	1.43	1.62	115	131	25	10.0-160			12.5	34
Ethylbenzene	1.24	0.921	1.22	1.56	24.1	51.5	25	10.0-160			24.5	32
Total Xylene	3.72	0.924	3.86	4.91	78.9	107	25	10.0-160			23.9	32
(S) a,a,a-Trifluorotoluene(FID)					*104*	*104*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*98.3*	*98.4*		*72.0-128*				

Sample Narrative:

OS: Non-target compounds too high to run at a lower dilution.

L1230545-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1230545-03 06/19/20 17:41 • (MS) R3541760-6 06/20/20 00:54 • (MSD) R3541760-7 06/20/20 01:15

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) Low Fraction	136	95.7	125	129	21.5	24.5	25	10.0-151			3.15	28
(S) a,a,a-Trifluorotoluene(FID)					*69.7*	*67.0*		*77.0-120*	J2	J2		
(S) a,a,a-Trifluorotoluene(PID)					*106*	*106*		*72.0-128*				

Sample Narrative:

OS: Non-target compounds too high to run at a lower dilution.

Method Blank (MB)

(MB) R3541778-3 06/23/20 00:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*106*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*103*			*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3541778-1 06/22/20 23:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0465	93.0	76.0-121	
Toluene	0.0500	0.0498	99.6	80.0-120	
Ethylbenzene	0.0500	0.0508	102	80.0-124	
Total Xylene	0.150	0.151	101	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*101*	*72.0-128*	

Laboratory Control Sample (LCS)

(LCS) R3541778-2 06/23/20 00:05

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.11	92.9	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*98.3*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*104*	*72.0-128*	

Method Blank (MB)

(MB) R3540996-1 06/20/20 18:43

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	*74.9*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3540996-2 06/20/20 18:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	46.5	93.0	50.0-150	
(S) o-Terphenyl			*97.9*	*18.0-148*	

Method Blank (MB)

(MB) R3541124-2 06/20/20 09:04

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	*87.6*			*14.0-149*
(S) 2-Fluorobiphenyl	*81.9*			*34.0-125*
(S) p-Terphenyl-d14	*81.4*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3541124-1 06/20/20 08:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0620	77.5	50.0-126	
Acenaphthene	0.0800	0.0726	90.8	50.0-120	
Acenaphthylene	0.0800	0.0728	91.0	50.0-120	
Benzo(a)anthracene	0.0800	0.0673	84.1	45.0-120	
Benzo(a)pyrene	0.0800	0.0571	71.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0601	75.1	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0582	72.8	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0617	77.1	49.0-125	
Chrysene	0.0800	0.0671	83.9	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0559	69.9	47.0-125	
Fluoranthene	0.0800	0.0671	83.9	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3541124-1 06/20/20 08:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0696	87.0	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0587	73.4	46.0-125	
Naphthalene	0.0800	0.0647	80.9	50.0-120	
Phenanthrene	0.0800	0.0673	84.1	47.0-120	
Pyrene	0.0800	0.0659	82.4	43.0-123	
1-Methylnaphthalene	0.0800	0.0726	90.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0648	81.0	50.0-120	
2-Chloronaphthalene	0.0800	0.0711	88.9	50.0-120	
(S) Nitrobenzene-d5			*92.7*	*14.0-149*	
(S) 2-Fluorobiphenyl			*85.6*	*34.0-125*	
(S) p-Terphenyl-d14			*76.4*	*23.0-120*	

L1229688-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1229688-01 06/20/20 10:26 • (MS) R3541124-3 06/20/20 10:47 • (MSD) R3541124-4 06/20/20 11:08

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 %
Anthracene	0.0796	ND	0.0489	0.0522	61.4	65.6	1	10.0-145			6.53	30
Acenaphthene	0.0796	ND	0.0598	0.0641	75.1	80.5	1	14.0-127			6.94	27
Acenaphthylene	0.0796	ND	0.0595	0.0648	74.7	81.4	1	21.0-124			8.53	25
Benzo(a)anthracene	0.0796	ND	0.0511	0.0523	64.2	65.7	1	10.0-139			2.32	30
Benzo(a)pyrene	0.0796	ND	0.0459	0.0473	57.7	59.4	1	10.0-141			3.00	31
Benzo(b)fluoranthene	0.0796	ND	0.0463	0.0471	58.2	59.2	1	10.0-140			1.71	36
Benzo(g,h,i)perylene	0.0796	ND	0.0480	0.0505	60.3	63.4	1	10.0-140			5.08	33
Benzo(k)fluoranthene	0.0796	ND	0.0458	0.0475	57.5	59.7	1	10.0-137			3.64	31
Chrysene	0.0796	ND	0.0474	0.0485	59.5	60.9	1	10.0-145			2.29	30
Dibenz(a,h)anthracene	0.0796	ND	0.0434	0.0438	54.5	55.0	1	10.0-132			0.917	31
Fluoranthene	0.0796	ND	0.0531	0.0564	66.7	70.9	1	10.0-153			6.03	33
Fluorene	0.0796	ND	0.0549	0.0593	69.0	74.5	1	11.0-130			7.71	29
Indeno(1,2,3-cd)pyrene	0.0796	ND	0.0443	0.0445	55.7	55.9	1	10.0-137			0.450	32
Naphthalene	0.0796	ND	0.0532	0.0578	66.8	72.6	1	10.0-135			8.29	27
Phenanthrene	0.0796	ND	0.0508	0.0542	63.8	68.1	1	10.0-144			6.48	31
Pyrene	0.0796	ND	0.0484	0.0512	60.8	64.3	1	10.0-148			5.62	35
1-Methylnaphthalene	0.0796	ND	0.0549	0.0626	69.0	78.6	1	10.0-142			13.1	28
2-Methylnaphthalene	0.0796	ND	0.0508	0.0589	63.8	74.0	1	10.0-137			14.8	28
2-Chloronaphthalene	0.0796	ND	0.0560	0.0641	70.4	80.5	1	29.0-120			13.5	24
(S) Nitrobenzene-d5					*73.9*	*77.7*		*14.0-149*				
(S) 2-Fluorobiphenyl					*65.7*	*78.2*		*34.0-125*				
(S) p-Terphenyl-d14					*59.0*	*61.7*		*23.0-120*				

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.
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.
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

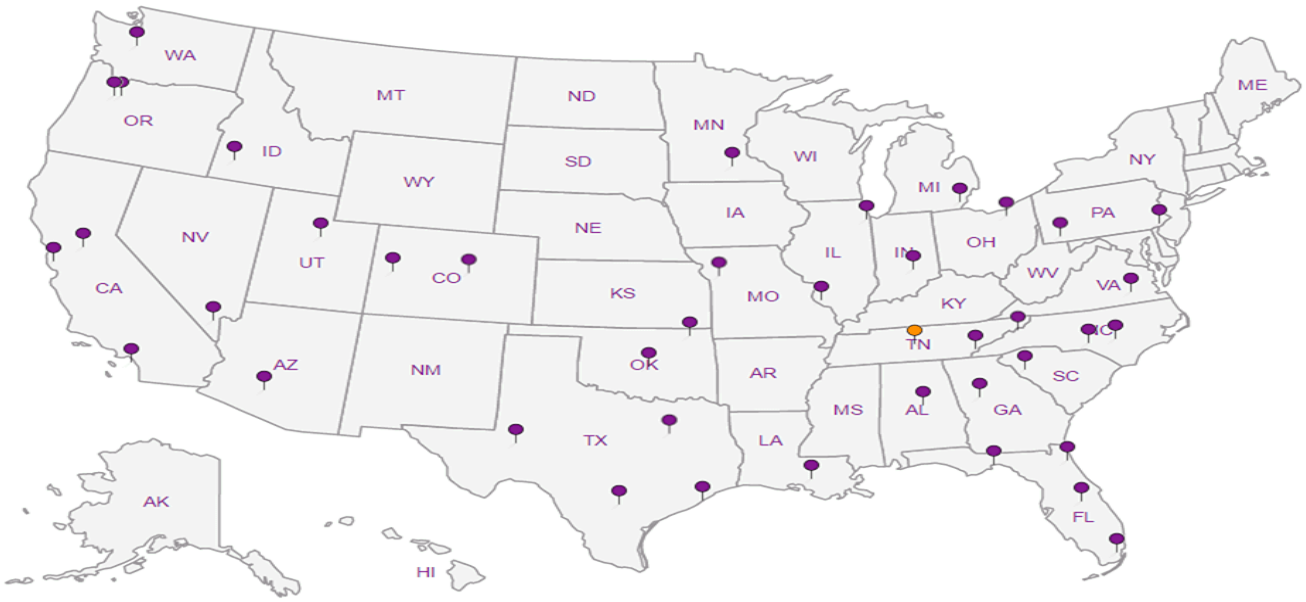
Third Party Federal Accreditations

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 and Gas
143 Diamond Avenue
Parachute, CO 81635

Billing Information: **Same as left**

Report to: **Blair Rollins**

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

Project Description: F26 Stockpile

City/State Collected: **CO**

Phone: **(970) 640-6919**
Fax:

Client Project #: F26

Lab Project #

Collected by (print): Matt Kasten

Site/Facility ID #: F26

P.O. #

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)
X Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TPH (DRO and GRO)	BTEX	Table 910-1 metals in soil	Table 910-1 PAHs	EC, SAR, pH	Remarks	Sample # (lab only)
20200617 - F26 Stock1	Comp	SS	6-12"	6/17/20	905	3	X	X	X	X	X		-01
20200617 - F26 Stock2					915	3	X	X	X	X	X		-02
20200617 - F26 Stock3					940	3	X	X	X	X	X		-03
20200617 - F26 Stock4					950	3	X	X	X	X	X		-04
20200617 - F26 Stock5					1000	3	X	X	X	X	X		-05

Chain of Custody Page 1 of 1

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 # L230545

Ta D232

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

	Date:	Time:	
Relinquished by: (Signature)	6/17/20	1800	Received by: (Signature)
Relinquished by: (Signature)	6/17/2020	1500	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 4.2 °C
1.4+0=1.4

Bottles Received: 15

Date: 6-18-20 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

June 24, 2020

Caerus Oil and Gas

Sample Delivery Group:	L1230550
Samples Received:	06/18/2020
Project Number:	F26
Description:	F26
Site:	F26
Report To:	Blair Rollins 143 Diamond Avenue Parachute, CO 81635

Entire Report Reviewed By:

Jason Romer
Project Manager

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20200617-F26 SE CORNER L1230550-01 Solid

Collected by: Matt Kasten
Collected date/time: 06/17/20 08:45
Received date/time: 06/18/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1494734	1	06/22/20 23:58	06/22/20 23:58	EL	Mt. Juliet, TN
Calculated Results	WG1495787	1	06/19/20 14:40	06/23/20 17:04	KPS	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1496642	1	06/22/20 19:08	06/23/20 17:04	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1497168	1	06/23/20 13:30	06/23/20 14:26	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1497173	1	06/23/20 09:52	06/23/20 16:00	LRP	Mt. Juliet, TN
Mercury by Method 7471A	WG1495549	1	06/19/20 08:48	06/21/20 21:52	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1495787	1	06/19/20 14:40	06/20/20 10:54	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1495325	1	06/18/20 19:43	06/19/20 18:22	AV	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1496286	1	06/20/20 13:42	06/20/20 21:03	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1495439	1	06/20/20 01:49	06/20/20 16:20	LEA	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.

Jason Romer
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.838		1	06/22/2020 23:58	WG1494734

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	32.9		1.00	1	06/23/2020 17:04	WG1495787

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	06/23/2020 17:04	WG1496642

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.97	T8	1	06/23/2020 14:26	WG1497168

Sample Narrative:

L1230550-01 WG1497168: 8.97 at 25.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	177		10.0	1	06/23/2020 16:00	WG1497173

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	06/21/2020 21:52	WG1495549

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.83		2.00	1	06/20/2020 10:54	WG1495787
Barium	328		0.500	1	06/20/2020 10:54	WG1495787
Cadmium	0.776		0.500	1	06/20/2020 10:54	WG1495787
Chromium	32.9		1.00	1	06/20/2020 10:54	WG1495787
Copper	20.4		2.00	1	06/20/2020 10:54	WG1495787
Lead	12.1		0.500	1	06/20/2020 10:54	WG1495787
Nickel	24.8		2.00	1	06/20/2020 10:54	WG1495787
Selenium	ND		2.00	1	06/20/2020 10:54	WG1495787
Silver	ND		1.00	1	06/20/2020 10:54	WG1495787
Zinc	56.0		5.00	1	06/20/2020 10:54	WG1495787

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00160		0.000500	1	06/19/2020 18:22	WG1495325
Toluene	ND		0.00500	1	06/19/2020 18:22	WG1495325
Ethylbenzene	ND		0.000500	1	06/19/2020 18:22	WG1495325
Total Xylene	0.00343		0.00150	1	06/19/2020 18:22	WG1495325
TPH (GC/FID) Low Fraction	ND		0.100	1	06/19/2020 18:22	WG1495325

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*100*		*77.0-120*		*06/19/2020 18:22*	WG1495325
(S) a,a,a-Trifluorotoluene(PID)	*96.4*		*72.0-128*		*06/19/2020 18:22*	WG1495325

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	5.93		4.00	1	06/20/2020 21:03	WG1496286
(S) o-Terphenyl	*62.4*		*18.0-148*		*06/20/2020 21:03*	WG1496286

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	06/20/2020 16:20	WG1495439
Acenaphthene	ND		0.00600	1	06/20/2020 16:20	WG1495439
Acenaphthylene	ND		0.00600	1	06/20/2020 16:20	WG1495439
Benzo(a)anthracene	ND		0.00600	1	06/20/2020 16:20	WG1495439
Benzo(a)pyrene	ND		0.00600	1	06/20/2020 16:20	WG1495439
Benzo(b)fluoranthene	ND		0.00600	1	06/20/2020 16:20	WG1495439
Benzo(g,h,i)perylene	ND		0.00600	1	06/20/2020 16:20	WG1495439
Benzo(k)fluoranthene	ND		0.00600	1	06/20/2020 16:20	WG1495439
Chrysene	ND		0.00600	1	06/20/2020 16:20	WG1495439
Dibenz(a,h)anthracene	ND		0.00600	1	06/20/2020 16:20	WG1495439
Fluoranthene	ND		0.00600	1	06/20/2020 16:20	WG1495439
Fluorene	ND		0.00600	1	06/20/2020 16:20	WG1495439
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	06/20/2020 16:20	WG1495439
Naphthalene	ND		0.0200	1	06/20/2020 16:20	WG1495439
Phenanthrene	ND		0.00600	1	06/20/2020 16:20	WG1495439
Pyrene	ND		0.00600	1	06/20/2020 16:20	WG1495439
1-Methylnaphthalene	ND		0.0200	1	06/20/2020 16:20	WG1495439
2-Methylnaphthalene	ND		0.0200	1	06/20/2020 16:20	WG1495439
2-Chloronaphthalene	ND		0.0200	1	06/20/2020 16:20	WG1495439
(S) p-Terphenyl-d14	*67.2*		*23.0-120*		*06/20/2020 16:20*	WG1495439
(S) Nitrobenzene-d5	*70.3*		*14.0-149*		*06/20/2020 16:20*	WG1495439
(S) 2-Fluorobiphenyl	*67.8*		*34.0-125*		*06/20/2020 16:20*	WG1495439

Method Blank (MB)

(MB) R3542013-1 06/23/20 16:58

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

Laboratory Control Sample (LCS)

(LCS) R3542013-2 06/23/20 16:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium,Hexavalent	24.0	25.0	104	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3541911-1 06/23/20 14:26

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.98	99.8	99.0-101	

Sample Narrative:

LCS: 9.98 at 23.5C

Method Blank (MB)

(MB) R3542014-1 06/23/20 16:00

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) R3542014-2 06/23/20 16:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	445	451	101	85.0-115	

Method Blank (MB)

(MB) R3541139-1 06/21/20 20:37

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

Laboratory Control Sample (LCS)

(LCS) R3541139-2 06/21/20 20:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.489	97.8	80.0-120	

Method Blank (MB)

(MB) R3540906-1 06/20/20 09:13

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.460	2.00
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	0.210	J	0.208	0.500
Nickel	U		0.490	2.00
Selenium	U		0.617	2.00
Silver	U		0.228	1.00
Zinc	U		0.939	5.00

Laboratory Control Sample (LCS)

(LCS) R3540906-2 06/20/20 09:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	87.9	87.9	80.0-120	
Barium	100	102	102	80.0-120	
Cadmium	100	94.6	94.6	80.0-120	
Chromium	100	95.3	95.3	80.0-120	
Copper	100	98.4	98.4	80.0-120	
Lead	100	98.6	98.6	80.0-120	
Nickel	100	98.9	98.9	80.0-120	
Selenium	100	93.5	93.5	80.0-120	
Silver	20.0	17.7	88.4	80.0-120	
Zinc	100	93.2	93.2	80.0-120	

Method Blank (MB)

(MB) R3541760-3 06/19/20 15:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000447	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*104*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*102*			*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3541760-1 06/19/20 15:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0521	104	76.0-121	
Toluene	0.0500	0.0552	110	80.0-120	
Ethylbenzene	0.0500	0.0551	110	80.0-124	
Total Xylene	0.150	0.162	108	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			*104*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*101*	*72.0-128*	

Laboratory Control Sample (LCS)

(LCS) R3541760-2 06/19/20 15:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.08	111	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*108*	*72.0-128*	

Method Blank (MB)

(MB) R3540996-1 06/20/20 18:43

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	*74.9*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3540996-2 06/20/20 18:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	46.5	93.0	50.0-150	
(S) o-Terphenyl			*97.9*	*18.0-148*	

Method Blank (MB)

(MB) R3541124-2 06/20/20 09:04

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	*87.6*			*14.0-149*
(S) 2-Fluorobiphenyl	*81.9*			*34.0-125*
(S) p-Terphenyl-d14	*81.4*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3541124-1 06/20/20 08:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0620	77.5	50.0-126	
Acenaphthene	0.0800	0.0726	90.8	50.0-120	
Acenaphthylene	0.0800	0.0728	91.0	50.0-120	
Benzo(a)anthracene	0.0800	0.0673	84.1	45.0-120	
Benzo(a)pyrene	0.0800	0.0571	71.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0601	75.1	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0582	72.8	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0617	77.1	49.0-125	
Chrysene	0.0800	0.0671	83.9	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0559	69.9	47.0-125	
Fluoranthene	0.0800	0.0671	83.9	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3541124-1 06/20/20 08:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0696	87.0	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0587	73.4	46.0-125	
Naphthalene	0.0800	0.0647	80.9	50.0-120	
Phenanthrene	0.0800	0.0673	84.1	47.0-120	
Pyrene	0.0800	0.0659	82.4	43.0-123	
1-Methylnaphthalene	0.0800	0.0726	90.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0648	81.0	50.0-120	
2-Chloronaphthalene	0.0800	0.0711	88.9	50.0-120	
(S) Nitrobenzene-d5			*92.7*	*14.0-149*	
(S) 2-Fluorobiphenyl			*85.6*	*34.0-125*	
(S) p-Terphenyl-d14			*76.4*	*23.0-120*	

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.
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.
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

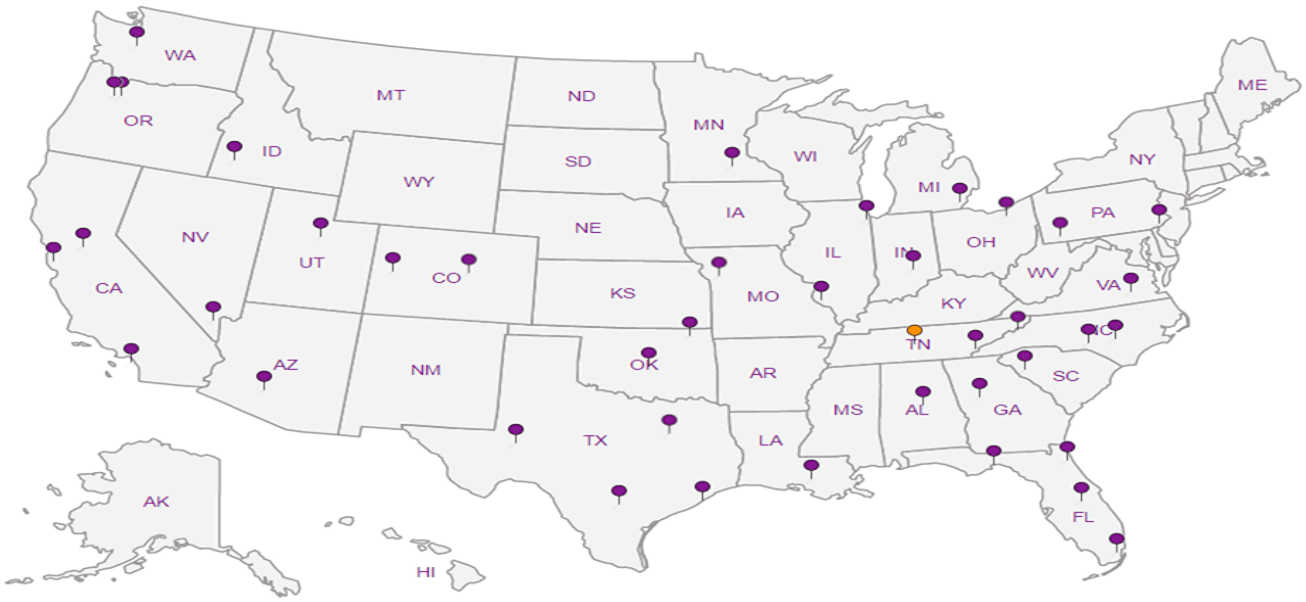
Third Party Federal Accreditations

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 and Gas
143 Diamond Avenue
Parachute, CO 81635

Billing Information: **Same as left**

Report to: **Blair Rollins**

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

Project Description: F26

City/State Collected: **CO**

Phone: **(970) 640-6919**
Fax:

Client Project # F26

Lab Project #

Collected by (print): Matt Kaster

Site/Facility ID # F26

P.O. #

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)
X Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Pres Chk	TPH (DRO and GRO)	BTEX	Table 910-1 metals in soil	Table 910-1 PAHs	EC, SAR, pH						Remarks	Sample # (lab only)
20200617 - F26 SE Corner	Grab	SS	22'	6/17/20	845	3		x	x	x	x	x							-01

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

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 # L1230550
D233

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
	6/17/20	1800		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.2°C Bottles Received: 3
	6/17/2020	1500		1.4±0=1.4
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 6-18-20 Time: 0845

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

ALS Environmental

01-Feb-2012

Herman Lucero
HRL Compliance Solutions
744 Horizon Ct. Suite 140
Grand Junction, CO 81506

Re: **PDC Mesa 16 Background 5/4/11** Work Order: **1105150**

Dear Herman,

ALS Environmental received 5 samples on 06-May-2011 10:00 AM for the analyses presented in the following report.

This is a REVISED REPORT. The Case Narrative provides information discussing the reason for issuing a revised report. The total number of pages in this revision is 34.

If you have any questions regarding these test results, please feel free to contact me.

Sincerely,

Ann Preston

Electronically approved by: Alex Csaszar

Ann Preston
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Certificate No: MN331938

ALS Group USA, Corp

Date: 01-Feb-12

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
Work Order: 1105150

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1105150-01	Drill Cuttings	Soil		5/4/2011 10:30	5/6/2011 10:00	☑
1105150-02	AS 1	Soil		5/4/2011 10:45	5/6/2011 10:00	☐
1105150-03	AS 2	Soil		5/4/2011 10:50	5/6/2011 10:00	☐
1105150-04	AS 3	Soil		5/6/2011 11:00	5/6/2011 10:00	☐
1105150-05	Background	Soil		5/4/2011 11:05	5/6/2011 10:00	☐

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
Work Order: 1105150

Case Narrative

The Drill Cuttings data are not included in this revised report, per the client's request 1/11/12.

Batch 33205, Diesel Range Organics by GC-FID, Sample 1105150-01A:Surrogate recovery was above control limits due to matrix interference.

Batch 33203 MS/MSD data for Metals is not related to this project's samples.

Batch 33204 LCS/LCSD recoveries for a few Semi-volatile compounds were above control limits. All samples in this quality control batch were ND for these compounds. The MS/MSD data for Semi-Volatiles is not related to this project's samples.

Batch 33240 MS/MSD data for Hexavalent Chromium is not related to this project's samples.

A revised report was issued per client request to remove Drill Cuttings data.

ALS Group USA, Corp

Date: 01-Feb-12

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
WorkOrder: 1105150

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
SD	Serial Dilution
TDL	Target Detection Limit

Units Reported	Description
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight
s.u.	Standard Units

ALS Group USA, Corp

Date: *01-Feb-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
Work Order: 1105150
Sample ID: AS 1
Lab ID: 1105150-02
Collection Date: 5/4/2011 10:45 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **5/7/2011**	Analyst: **CES**
Arsenic	**23**		**0.94**	**mg/Kg-dry**	2	5/10/2011 06:40 AM
MOISTURE			**A2540 G**			Analyst: **JJG**
Moisture	**26**		**0.050**	**% of sample**	1	5/6/2011 12:01 PM

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

ALS Group USA, Corp

Date: *01-Feb-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
Work Order: 1105150
Sample ID: AS 2
Lab ID: 1105150-03
Collection Date: 5/4/2011 10:50 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **5/7/2011**	Analyst: **CES**
Arsenic	**28**		**1.1**	**mg/Kg-dry**	2	5/10/2011 06:46 AM
MOISTURE			**A2540 G**			Analyst: **JJG**
Moisture	**29**		**0.050**	**% of sample**	1	5/6/2011 12:01 PM

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

ALS Group USA, Corp

Date: *01-Feb-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11 **Work Order:** 1105150
Sample ID: AS 3 **Lab ID:** 1105150-04
Collection Date: 5/6/2011 11:00 AM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **5/7/2011**	Analyst: **CES**
Arsenic	**44**		**1.0**	**mg/Kg-dry**	2	5/10/2011 06:52 AM
MOISTURE			**A2540 G**			Analyst: **JJG**
Moisture	**25**		**0.050**	**% of sample**	1	5/6/2011 12:01 PM

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

ALS Group USA, Corp

Date: *01-Feb-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 16 Background 5/4/11
Work Order: 1105150
Sample ID: Background
Lab ID: 1105150-05
Collection Date: 5/4/2011 11:05 AM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
SUBCONTRACTED ANALYSES			SUBCONTRACT			Analyst: **A&LGL**
Subcontracted Analyses	Rcvd 5/11/11			attached	1	5/11/2011
MOISTURE			A2540 G			Analyst: **JJG**
Moisture	26		0.050	% of sample	1	5/6/2011 12:01 PM
PH			SW9045D			Analyst: **JJG**
pH	7.44			s.u.	1	5/6/2011 11:00 AM

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

Report Number: F11129-0258
Acount Number: 91000

A & L GREAT LAKES LABORATORIES, INC.

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QUALITY ANALYSES FOR INFORMED DECISIONS

REPORT PRINTED 2/1/2012

TO: ALS LABORATORY GROUP
3352 128TH AVE
HOLLAND, MI 49424-9263

RE: 1105150

DATE RECEIVED: 05/09/2011
DATE REPORTED: 02/01/2012
PAGE: 1
P.O. NUMBER: 20-122010075

ATTN: ANN PRESTON

REPORT OF ANALYSIS

LAB NO.	SAMPLE ID	ANALYSIS	RESULT	UNIT	METHOD
30107	05B	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	0.21	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	23	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	8	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	16	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	0.7	-	USDA Handbook 60

SOILMISC

ALS Group USA, Corp

Date: 01-Feb-12

Client: HRL Compliance Solutions

Work Order: 1105150

Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33205** Instrument ID **GC8** Method: **SW8015M**

MBLK Sample ID: **DBLKS1-33205-33205** Units: **mg/Kg** Analysis Date: **5/10/2011 09:15 PM**

Client ID: Run ID: **GC8_110510A** SeqNo: **1623019** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	4.2								
Surr: 4-Terphenyl-d14	*1.602*	0	*1.667*	0	*96.1*	*39-115*	0			

LCS Sample ID: **DLCSS1-33205-33205** Units: **mg/Kg** Analysis Date: **5/10/2011 07:37 PM**

Client ID: Run ID: **GC8_110510A** SeqNo: **1623016** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	180.9	5.0	200	0	90.4	60-130	0			
Surr: 4-Terphenyl-d14	*1.756*	0	*2*	0	*87.8*	*39-115*	0			

LCSD Sample ID: **DLCSDS1-33205-33205** Units: **mg/Kg** Analysis Date: **5/10/2011 08:02 PM**

Client ID: Run ID: **GC8_110510A** SeqNo: **1623047** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
RO (C10-C28)	175.7	5.0	200	0	87.8	60-130	180.9	2.92	30	
Surr: 4-Terphenyl-d14	*1.672*	0	*2*	0	*83.6*	*39-115*	1.756	*4.85*	*30*	

MS Sample ID: **1105174-04A MS** Units: **mg/Kg** Analysis Date: **5/10/2011 03:57 PM**

Client ID: Run ID: **GC8_110510A** SeqNo: **1623008** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	299.6	8.2	328	8.159	88.9	60-130	0			
Surr: 4-Terphenyl-d14	*2.175*	0	*3.28*	0	*66.3*	*39-115*	0			

MSD Sample ID: **1105174-04A MSD** Units: **mg/Kg** Analysis Date: **5/10/2011 04:21 PM**

Client ID: Run ID: **GC8_110510A** SeqNo: **1623039** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	313.1	7.9	317.1	8.159	96.1	60-130	299.6	4.39	30	
Surr: 4-Terphenyl-d14	*1.937*	0	*3.171*	0	*61.1*	*39-115*	2.175	*11.6*	*30*	

The following samples were analyzed in this batch: 1105150-01A

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89951** Instrument ID **GC9** Method: **SW8015**

MBLK Sample ID: **MBLK-R89951-R89951** Units: **µg/L** Analysis Date: **5/10/2011 12:38 PM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622997** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	200								
Surr: Toluene-d8	*94.8*	0	*100*	0	*94.8*	*70-130*	0			

LCS Sample ID: **LCS-R89951-R89951** Units: **µg/L** Analysis Date: **5/10/2011 11:15 AM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622995** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	27010	200	25000	0	108	70-130	0			
Surr: Toluene-d8	*104.5*	0	*100*	0	*105*	*70-130*	0			

LCSD Sample ID: **LCSD-R89951-R89951** Units: **µg/L** Analysis Date: **5/10/2011 11:41 AM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622996** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	28380	200	25000	0	114	70-130	27010	4.93	30	
Surr: Toluene-d8	*103.7*	0	*100*	0	*104*	*70-130*	104.5	*0.816*	*30*	

MS Sample ID: **1105136-03A MS** Units: **µg/Kg** Analysis Date: **5/10/2011 09:44 PM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622987** Prep Date: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	2573000	5,000	2500000	0	103	70-130	0			
Surr: Toluene-d8	*9665*	0	*10000*	0	*96.6*	*50-150*	0			

MS Sample ID: **1105174-04B MS** Units: **µg/Kg** Analysis Date: **5/10/2011 10:10 PM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622988** Prep Date: DF: **118**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	2956000	5,900	2950000	0	100	70-130	0			
Surr: Toluene-d8	*11290*	0	*11800*	0	*95.7*	*50-150*	0			

MSD Sample ID: **1105136-03A MSD** Units: **µg/Kg** Analysis Date: **5/10/2011 10:36 PM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622989** Prep Date: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	2406000	5,000	2500000	0	96.3	70-130	2573000	6.68	30	
Surr: Toluene-d8	*9269*	0	*10000*	0	*92.7*	*50-150*	9665	*4.18*	*30*	

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89951** Instrument ID **GC9** Method: **SW8015**

MSD Sample ID: **1105174-04B MSD** Units: **µg/Kg** Analysis Date: **5/10/2011 11:01 PM**
Client ID: Run ID: **GC9_110510B** SeqNo: **1622990** Prep Date: DF: **118**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	2744000	5,900	2950000	0	93	70-130	2956000	7.46	30	
Surr: Toluene-d8	*11240*	0	*11800*	0	*95.2*	*50-150*	11290	*0.45*	*30*	

The following samples were analyzed in this batch: 1105150-01B

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33259** Instrument ID **HG1** Method: **SW7471**

MBLK Sample ID: **MBLK-33259-33259** Units: **mg/Kg** Analysis Date: **5/12/2011 12:36 PM**
Client ID: Run ID: **HG1_110512A** SeqNo: **1623668** Prep Date: **5/12/2011** DF: **1**

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

LCS Sample ID: **LCS-33259-33259** Units: **mg/Kg** Analysis Date: **5/12/2011 12:38 PM**
Client ID: Run ID: **HG1_110512A** SeqNo: **1623669** Prep Date: **5/12/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1652	0.020	0.1665	0	99.2	80-120	0			

LCSD Sample ID: **LCSD-33259-33259** Units: **mg/Kg** Analysis Date: **5/12/2011 12:40 PM**
Client ID: Run ID: **HG1_110512A** SeqNo: **1623670** Prep Date: **5/12/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1705	0.020	0.1665	0	102	80-120	0.1652	3.13	20	

MS Sample ID: **1105208-03BMS** Units: **mg/Kg** Analysis Date: **5/12/2011 01:14 PM**
Client ID: Run ID: **HG1_110512A** SeqNo: **1623685** Prep Date: **5/12/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1671	0.018	0.1516	0.006278	106	75-125	0			

MSD Sample ID: **1105208-03BMSD** Units: **mg/Kg** Analysis Date: **5/12/2011 01:16 PM**
Client ID: Run ID: **HG1_110512A** SeqNo: **1623686** Prep Date: **5/12/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1695	0.019	0.1611	0.006278	101	75-125	0.1671	1.41	35	

The following samples were analyzed in this batch: 1105150-01A

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33203** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK Sample ID: **MBLK-33203-33203** Units: **mg/Kg** Analysis Date: **5/10/2011 04:12 AM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621165** Prep Date: **5/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.10								
Chromium	ND	0.25								
Copper	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.25								
Silver	ND	0.25								
Zinc	ND	0.50								

MBLK Sample ID: **MBLK-33203-33203** Units: **mg/Kg** Analysis Date: **5/10/2011 01:17 PM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621829** Prep Date: **5/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	ND	0.25								

LCS Sample ID: **LCS-33203-33203** Units: **mg/Kg** Analysis Date: **5/10/2011 04:18 AM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621167** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	5.132	0.50	5	0	103	80-120	0			
Barium	4.909	0.50	5	0	98.2	80-120	0			
Cadmium	4.589	0.20	5	0	91.8	80-120	0			
Chromium	5.625	0.50	5	0	112	80-120	0			
Copper	5.414	0.50	5	0	108	80-120	0			
Nickel	5.598	0.50	5	0	112	80-120	0			
Selenium	4.753	0.50	5	0	95.1	80-120	0			
Silver	4.485	0.50	5	0	89.7	80-120	0			
Zinc	5.422	1.0	5	0	108	80-120	0			

LCS Sample ID: **LCS-33203-33203** Units: **mg/Kg** Analysis Date: **5/10/2011 01:47 PM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621832** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	4.871	0.50	5	0	97.4	80-120	0			

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33203** Instrument ID **ICPMS1** Method: **SW6020A**

LCSD Sample ID: **LCSD-33203-33203** Units: **mg/Kg** Analysis Date: **5/10/2011 04:24 AM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621169** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.943	0.50	5	0	98.9	80-120	5.132	3.75	20	
Barium	4.747	0.50	5	0	94.9	80-120	4.909	3.36	20	
Cadmium	4.422	0.20	5	0	88.4	80-120	4.589	3.71	20	
Chromium	5.33	0.50	5	0	107	80-120	5.625	5.39	20	
Copper	5.166	0.50	5	0	103	80-120	5.414	4.69	20	
Nickel	5.33	0.50	5	0	107	80-120	5.598	4.9	20	
Selenium	4.559	0.50	5	0	91.2	80-120	4.753	4.17	20	
Silver	4.271	0.50	5	0	85.4	80-120	4.485	4.89	20	
Zinc	5.176	1.0	5	0	104	80-120	5.422	4.64	20	

LCSD Sample ID: **LCSD-33203-33203** Units: **mg/Kg** Analysis Date: **5/10/2011 01:53 PM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621833** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	4.738	0.50	5	0	94.8	80-120	4.871	2.77	20	

MS Sample ID: **1105171-04BMS** Units: **mg/Kg** Analysis Date: **5/10/2011 10:13 AM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621291** Prep Date: **5/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.409	0.41	8.157	1.531	84.3	80-120	0			
Barium	51.66	0.41	8.157	40.99	131	80-120	0			SO
Cadmium	7.184	0.16	8.157	0.03361	87.7	80-120	0			
Lead	13.59	0.41	8.157	4.057	117	80-120	0			
Selenium	6.488	0.41	8.157	0.2389	76.6	80-120	0			S
Silver	7.121	0.41	8.157	0.002449	87.3	80-120	0			
Zinc	18.16	0.82	8.157	11.3	84.1	80-120	0			

MS Sample ID: **1105171-04BMS** Units: **mg/Kg** Analysis Date: **5/10/2011 06:20 PM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1622158** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Copper	9.561	0.82	8.157	1.912	93.8	80-120	0			

MS Sample ID: **1105171-04BMS** Units: **mg/Kg** Analysis Date: **5/11/2011 11:00 AM**
Client ID: Run ID: **ICPMS2_110511A** SeqNo: **1622606** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	12.8	0.82	8.157	4.15	106	80-120	0			

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33203** Instrument ID **ICPMS1** Method: **SW6020A**

MSD Sample ID: **1105171-04BMSD** Units: **mg/Kg** Analysis Date: **5/10/2011 10:19 AM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1621292** Prep Date: **5/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.626	0.41	8.278	1.531	85.7	80-120	8.409	2.54	25	
Barium	49.83	0.41	8.278	40.99	107	80-120	51.66	3.61	25	O
Cadmium	7.455	0.17	8.278	0.03361	89.7	80-120	7.184	3.7	25	
Lead	13.82	0.41	8.278	4.057	118	80-120	13.59	1.72	25	
Selenium	6.759	0.41	8.278	0.2389	78.8	80-120	6.488	4.1	25	S
Silver	7.342	0.41	8.278	0.002449	88.7	80-120	7.121	3.06	25	
Zinc	20.02	0.83	8.278	11.3	105	80-120	18.16	9.74	25	

MSD Sample ID: **1105171-04BMSD** Units: **mg/Kg** Analysis Date: **5/10/2011 06:26 PM**
Client ID: Run ID: **ICPMS1_110509A** SeqNo: **1622159** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Copper	9.882	0.83	8.278	1.912	96.3	80-120	9.561	3.3	25	

MSD Sample ID: **1105171-04BMSD** Units: **mg/Kg** Analysis Date: **5/11/2011 11:05 AM**
Client ID: Run ID: **ICPMS2_110511A** SeqNo: **1622607** Prep Date: **5/7/2011** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium	13.09	0.83	8.278	4.15	108	80-120	12.8	2.29	25	

The following samples were analyzed in this batch: 1105150-01A 1105150-02A 1105150-03A 1105150-04A

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

MBLK Sample ID: **SBLKS1-33204-33204** Units: **µg/Kg** Analysis Date: **5/11/2011 09:02 AM**
Client ID: Run ID: **SVMS5_110510A** SeqNo: **1622740** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	ND	160								
1,2-Dichlorobenzene	ND	160								
1,3-Dichlorobenzene	ND	160								
1,4-Dichlorobenzene	ND	160								
2,4,5-Trichlorophenol	ND	160								
2,4,6-Trichlorophenol	ND	160								
2,4-Dichlorophenol	ND	160								
2,4-Dimethylphenol	ND	330								
2,4-Dinitrophenol	ND	660								
2,4-Dinitrotoluene	ND	160								
2,6-Dinitrotoluene	ND	160								
2-Chloronaphthalene	ND	80								
2-Chlorophenol	ND	160								
2-Methylnaphthalene	ND	80								
2-Methylphenol	ND	160								
2-Nitroaniline	ND	660								
2-Nitrophenol	ND	160								
3,3'-Dichlorobenzidine	ND	660								
3-Nitroaniline	ND	660								
4,6-Dinitro-2-methylphenol	ND	330								
4-Bromophenyl phenyl ether	ND	160								
4-Chloro-3-methylphenol	ND	160								
4-Chloroaniline	ND	660								
4-Chlorophenyl phenyl ether	ND	160								
4-Methylphenol	ND	160								
4-Nitroaniline	ND	660								
4-Nitrophenol	ND	660								
Acenaphthene	ND	30								
Acenaphthylene	ND	30								
Anthracene	ND	30								
Benzo(a)anthracene	ND	30								
Benzo(a)pyrene	ND	30								
Benzo(b)fluoranthene	ND	30								
Benzo(g,h,i)perylene	ND	30								
Benzo(k)fluoranthene	ND	30								
Bis(2-chloroethoxy)methane	ND	160								
Bis(2-chloroethyl)ether	ND	160								
Bis(2-chloroisopropyl)ether	ND	160								
Bis(2-ethylhexyl)phthalate	ND	330								
Butyl benzyl phthalate	ND	160								
Carbazole	ND	160								
Chrysene	ND	30								

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

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

Dibenzo(a,h)anthracene	ND	30						
Dibenzofuran	ND	160						
Diethyl phthalate	ND	330						
Dimethyl phthalate	ND	330						
Di-n-butyl phthalate	76.67	330						J
Di-n-octyl phthalate	ND	160						
Famphur	ND	0						
Fluoranthene	ND	30						
Fluorene	ND	30						
Hexachlorobenzene	ND	160						
Hexachlorobutadiene	ND	160						
Hexachlorocyclopentadiene	ND	330						
Hexachloroethane	ND	160						
Indeno(1,2,3-cd)pyrene	ND	30						
Isophorone	ND	160						
Naphthalene	ND	30						
Nitrobenzene	ND	160						
N-Nitrosodi-n-propylamine	ND	160						
N-Nitrosodiphenylamine	ND	160						
Pentachlorophenol	ND	330						
Phenanthrene	ND	30						
Phenol	ND	160						
Pyrene	ND	30						
Pyridine	ND	160						
Surr: 2,4,6-Tribromophenol	*1198*	0	*1667*	0	*71.9*	*34-140*	0	
Surr: 2-Fluorobiphenyl	*953*	0	*1667*	0	*57.2*	*12-100*	0	
Surr: 2-Fluorophenol	*1080*	0	*1667*	0	*64.8*	*33-117*	0	
Surr: 4-Terphenyl-d14	*1615*	0	*1667*	0	*96.9*	*25-137*	0	
Surr: Nitrobenzene-d5	*1009*	0	*1667*	0	*60.6*	*37-107*	0	
Surr: Phenol-d6	*1033*	0	*1667*	0	*62*	*40-106*	0	

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

LCS Sample ID: **SLCSS1-33204-33204** Units: **µg/Kg** Analysis Date: **5/11/2011 09:36 AM**
Client ID: Run ID: **SVMS5_110510A** SeqNo: **1622741** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1021	160	1333	0	76.6	45-110	0			
1,2-Dichlorobenzene	993	160	1333	0	74.5	45-95	0			
1,3-Dichlorobenzene	960.7	160	1333	0	72.1	40-100	0			
1,4-Dichlorobenzene	978	160	1333	0	73.4	35-105	0			
2,4,5-Trichlorophenol	1066	160	1333	0	80	50-110	0			
2,4,6-Trichlorophenol	1022	160	1333	0	76.7	45-110	0			
2,4-Dichlorophenol	1030	160	1333	0	77.3	45-110	0			
2,4-Dimethylphenol	1065	330	1333	0	79.9	30-105	0			
2,4-Dinitrophenol	745	660	1333	0	55.9	15-130	0			
2,4-Dinitrotoluene	1073	160	1333	0	80.5	50-115	0			
2,6-Dinitrotoluene	1135	160	1333	0	85.1	50-110	0			
2-Chloronaphthalene	1045	80	1333	0	78.4	45-105	0			
2-Chlorophenol	976.7	160	1333	0	73.3	45-105	0			
2-Methylnaphthalene	1102	80	1333	0	82.7	45-105	0			
2-Methylphenol	1018	160	1333	0	76.3	40-105	0			
2-Nitroaniline	1348	660	1333	0	101	45-120	0			
2-Nitrophenol	1008	160	1333	0	75.6	40-110	0			
3-Nitroaniline	1197	660	1333	0	89.8	25-150	0			
4-Bromophenyl phenyl ether	1161	160	1333	0	87.1	45-115	0			
4-Chloro-3-methylphenol	1155	160	1333	0	86.6	45-115	0			
4-Chloroaniline	4827	660	1333	0	362	15-110	0			SE
4-Chlorophenyl phenyl ether	1031	160	1333	0	77.3	45-110	0			
4-Methylphenol	1058	160	1333	0	79.3	40-105	0			
4-Nitroaniline	952	660	1333	0	71.4	35-150	0			
4-Nitrophenol	1033	660	1333	0	77.5	15-140	0			
Acenaphthene	1040	30	1333	0	78	45-110	0			
Acenaphthylene	1110	30	1333	0	83.3	45-105	0			
Anthracene	1225	30	1333	0	91.9	55-105	0			
Benzo(a)anthracene	1094	30	1333	0	82.1	50-110	0			
Benzo(a)pyrene	1171	30	1333	0	87.9	50-110	0			
Benzo(b)fluoranthene	1115	30	1333	0	83.6	45-115	0			
Benzo(g,h,i)perylene	1082	30	1333	0	81.2	40-125	0			
Benzo(k)fluoranthene	1194	30	1333	0	89.6	45-115	0			
Bis(2-chloroethoxy)methane	1081	160	1333	0	81.1	45-110	0			
Bis(2-chloroethyl)ether	1010	160	1333	0	75.8	40-105	0			
Bis(2-chloroisopropyl)ether	1009	160	1333	0	75.7	20-115	0			
Bis(2-ethylhexyl)phthalate	1183	330	1333	0	88.7	45-125	0			
Butyl benzyl phthalate	1117	160	1333	0	83.8	50-125	0			
Carbazole	1909	160	1333	0	143	50-150	0			
Chrysene	1158	30	1333	0	86.9	55-110	0			
Dibenzo(a,h)anthracene	1152	30	1333	0	86.4	40-125	0			
Dibenzofuran	1128	160	1333	0	84.6	50-105	0			

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

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

Diethyl phthalate	1194	330	1333	0	89.5	50-115	0	
Dimethyl phthalate	1143	330	1333	0	85.8	50-110	0	
Di-n-butyl phthalate	1105	330	1333	0	82.9	55-110	0	
Di-n-octyl phthalate	1169	160	1333	0	87.7	40-130	0	
Fluoranthene	1342	30	1333	0	101	55-115	0	
Fluorene	1127	30	1333	0	84.6	50-110	0	
Hexachlorobenzene	1162	160	1333	0	87.2	45-120	0	
Hexachlorobutadiene	1034	160	1333	0	77.5	40-115	0	
Hexachlorocyclopentadiene	812	330	1333	0	60.9	40-115	0	
Hexachloroethane	983	160	1333	0	73.7	35-110	0	
Indeno(1,2,3-cd)pyrene	1120	30	1333	0	84	40-120	0	
Isophorone	1096	160	1333	0	82.2	45-110	0	
Naphthalene	1035	30	1333	0	77.7	40-105	0	
Nitrobenzene	1063	160	1333	0	79.7	40-115	0	
N-Nitrosodi-n-propylamine	1079	160	1333	0	80.9	40-115	0	
N-Nitrosodiphenylamine	1665	160	1333	0	125	50-115	0	S
Pentachlorophenol	933.7	330	1333	0	70	25-120	0	
Phenanthrene	1199	30	1333	0	90	50-110	0	
Phenol	1040	160	1333	0	78	40-100	0	
Pyrene	1123	30	1333	0	84.2	45-125	0	
Surr: 2,4,6-Tribromophenol	*1488*	0	*1667*	0	*89.3*	*34-140*	0	
Surr: 2-Fluorobiphenyl	*1260*	0	*1667*	0	*75.6*	*12-100*	0	
Surr: 2-Fluorophenol	*1255*	0	*1667*	0	*75.3*	*33-117*	0	
Surr: 4-Terphenyl-d14	*1649*	0	*1667*	0	*99*	*25-137*	0	
Surr: Nitrobenzene-d5	*1315*	0	*1667*	0	*78.9*	*37-107*	0	
Surr: Phenol-d6	*1284*	0	*1667*	0	*77*	*40-106*	0	

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

LCSD Sample ID: **SLCSDS1-33204-33204** Units: **µg/Kg** Analysis Date: **5/11/2011 10:10 AM**
Client ID: Run ID: **SVMS5_110510A** SeqNo: **1622742** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1090	160	1333	0	81.7	45-110	1021	6.54	25	
1,2-Dichlorobenzene	1061	160	1333	0	79.6	45-95	993	6.65	25	
1,3-Dichlorobenzene	1039	160	1333	0	78	40-100	960.7	7.87	25	
1,4-Dichlorobenzene	1059	160	1333	0	79.4	35-105	978	7.95	25	
2,4,5-Trichlorophenol	1180	160	1333	0	88.5	50-110	1066	10.1	25	
2,4,6-Trichlorophenol	1108	160	1333	0	83.1	45-110	1022	8.04	25	
2,4-Dichlorophenol	1110	160	1333	0	83.2	45-110	1030	7.45	25	
2,4-Dimethylphenol	1026	330	1333	0	77	30-105	1065	3.67	25	
2,4-Dinitrophenol	1090	660	1333	0	81.7	15-130	745	37.6	25	R
2,4-Dinitrotoluene	1111	160	1333	0	83.4	50-115	1073	3.48	25	
2,6-Dinitrotoluene	1175	160	1333	0	88.2	50-110	1135	3.52	25	
2-Chloronaphthalene	1115	80	1333	0	83.6	45-105	1045	6.42	25	
2-Chlorophenol	1050	160	1333	0	78.8	45-105	976.7	7.24	25	
2-Methylnaphthalene	1168	80	1333	0	87.6	45-105	1102	5.79	25	
2-Methylphenol	1092	160	1333	0	81.9	40-105	1018	7.08	25	
2-Nitroaniline	1293	660	1333	0	97	45-120	1348	4.11	25	
2-Nitrophenol	1119	160	1333	0	83.9	40-110	1008	10.4	25	
3-Nitroaniline	1233	660	1333	0	92.5	25-110	1197	2.94	25	
4-Bromophenyl phenyl ether	1158	160	1333	0	86.9	45-115	1161	0.23	25	
4-Chloro-3-methylphenol	1209	160	1333	0	90.7	45-115	1155	4.57	25	
4-Chloroaniline	5039	660	1333	0	378	15-110	4827	4.3	25	SE
4-Chlorophenyl phenyl ether	1058	160	1333	0	79.4	45-110	1031	2.65	25	
4-Methylphenol	1127	160	1333	0	84.6	40-105	1058	6.38	25	
4-Nitroaniline	1004	660	1333	0	75.3	35-150	952	5.35	25	
4-Nitrophenol	1144	660	1333	0	85.8	15-140	1033	10.3	25	
Acenaphthene	1106	30	1333	0	83	45-110	1040	6.18	25	
Acenaphthylene	1171	30	1333	0	87.9	45-105	1110	5.35	25	
Anthracene	1243	30	1333	0	93.2	55-105	1225	1.46	25	
Benzo(a)anthracene	1135	30	1333	0	85.2	50-110	1094	3.68	25	
Benzo(a)pyrene	1206	30	1333	0	90.4	50-110	1171	2.89	25	
Benzo(b)fluoranthene	1158	30	1333	0	86.9	45-115	1115	3.81	25	
Benzo(g,h,i)perylene	1134	30	1333	0	85.1	40-125	1082	4.69	25	
Benzo(k)fluoranthene	1390	30	1333	0	104	45-115	1194	15.2	25	
Bis(2-chloroethoxy)methane	1169	160	1333	0	87.7	45-110	1081	7.88	25	
Bis(2-chloroethyl)ether	1102	160	1333	0	82.6	40-105	1010	8.65	25	
Bis(2-chloroisopropyl)ether	1068	160	1333	0	80.1	20-115	1009	5.68	25	
Bis(2-ethylhexyl)phthalate	1213	330	1333	0	91	45-125	1183	2.53	25	
Butyl benzyl phthalate	1162	160	1333	0	87.2	50-125	1117	3.95	25	
Carbazole	1921	160	1333	0	144	50-150	1909	0.609	25	
Chrysene	1182	30	1333	0	88.7	55-110	1158	2.08	25	
Dibenzo(a,h)anthracene	1212	30	1333	0	90.9	40-125	1152	5.08	25	
Dibenzofuran	1168	160	1333	0	87.6	50-105	1128	3.48	25	

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

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

Diethyl phthalate	1224	330	1333	0	91.8	50-115	1194	2.54	25	
Dimethyl phthalate	1172	330	1333	0	87.9	50-110	1143	2.45	25	
Di-n-butyl phthalate	1125	330	1333	0	84.4	55-110	1105	1.76	25	
Di-n-octyl phthalate	1195	160	1333	0	89.6	40-130	1169	2.23	25	
Fluoranthene	1400	30	1333	0	105	55-115	1342	4.26	25	
Fluorene	1160	30	1333	0	87	50-110	1127	2.86	25	
Hexachlorobenzene	1186	160	1333	0	89	45-120	1162	2.04	25	
Hexachlorobutadiene	1095	160	1333	0	82.1	40-115	1034	5.73	25	
Hexachlorocyclopentadiene	932.3	330	1333	0	69.9	40-115	812	13.8	25	
Hexachloroethane	1062	160	1333	0	79.6	35-110	983	7.69	25	
Indeno(1,2,3-cd)pyrene	1175	30	1333	0	88.1	40-120	1120	4.79	25	
Isophorone	1169	160	1333	0	87.7	45-110	1096	6.45	25	
Naphthalene	1114	30	1333	0	83.6	40-105	1035	7.35	25	
Nitrobenzene	1128	160	1333	0	84.6	40-115	1063	5.96	25	
N-Nitrosodi-n-propylamine	1149	160	1333	0	86.2	40-115	1079	6.31	25	
N-Nitrosodiphenylamine	1697	160	1333	0	127	50-115	1665	1.94	25	S
Pentachlorophenol	1092	330	1333	0	81.9	25-120	933.7	15.6	25	
Phenanthrene	1220	30	1333	0	91.5	50-110	1199	1.71	25	
Phenol	1132	160	1333	0	84.9	40-100	1040	8.44	25	
Pyrene	1179	30	1333	0	88.5	45-125	1123	4.92	25	
Surr: 2,4,6-Tribromophenol	*1509*	0	*1667*	0	*90.6*	*34-140*	1488	*1.42*	*40*	
Surr: 2-Fluorobiphenyl	*1376*	0	*1667*	0	*82.6*	*12-100*	1260	*8.83*	*40*	
Surr: 2-Fluorophenol	*1331*	0	*1667*	0	*79.8*	*33-117*	1255	*5.85*	*40*	
Surr: 4-Terphenyl-d14	*1723*	0	*1667*	0	*103*	*25-137*	1649	*4.35*	*40*	
Surr: Nitrobenzene-d5	*1442*	0	*1667*	0	*86.5*	*37-107*	1315	*9.21*	*40*	
Surr: Phenol-d6	*1361*	0	*1667*	0	*81.7*	*40-106*	1284	*5.82*	*40*	

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

MS Sample ID: **1105174-04A MS** Units: **µg/Kg** Analysis Date: **5/11/2011 10:45 AM**
Client ID: Run ID: **SVMS5_110510A** SeqNo: **1622743** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1534	320	2632	0	58.3	45-110	0			
1,2-Dichlorobenzene	1422	320	2632	0	54	45-95	0			
1,3-Dichlorobenzene	1321	320	2632	0	50.2	40-100	0			
1,4-Dichlorobenzene	1329	320	2632	0	50.5	35-105	0			
2,4,5-Trichlorophenol	2204	320	2632	0	83.7	50-110	0			
2,4,6-Trichlorophenol	2183	320	2632	0	82.9	45-110	0			
2,4-Dichlorophenol	2010	320	2632	0	76.4	45-110	0			
2,4-Dimethylphenol	1683	650	2632	0	64	30-105	0			
2,4-Dinitrophenol	625.9	1,300	2632	0	23.8	15-130	0			J
2,4-Dinitrotoluene	2061	320	2632	0	78.3	50-115	0			
2,6-Dinitrotoluene	2154	320	2632	0	81.8	50-110	0			
2-Chloronaphthalene	1817	160	2632	0	69	45-105	0			
2-Chlorophenol	1637	320	2632	0	62.2	45-105	0			
2-Methylnaphthalene	1809	160	2632	9.926	68.3	45-105	0			
2-Methylphenol	1777	320	2632	0	67.5	40-105	0			
2-Nitroaniline	2436	1,300	2632	0	92.5	45-120	0			
2-Nitrophenol	1768	320	2632	0	67.2	40-110	0			
3-Nitroaniline	2351	1,300	2632	0	89.3	25-110	0			
4-Bromophenyl phenyl ether	1906	320	2632	0	72.4	45-115	0			
4-Chloro-3-methylphenol	2288	320	2632	0	86.9	45-115	0			
4-Chloroaniline	6998	1,300	2632	0	266	15-110	0			SE
4-Chlorophenyl phenyl ether	1770	320	2632	0	67.2	45-110	0			
4-Methylphenol	1901	320	2632	0	72.2	40-105	0			
4-Nitroaniline	1619	1,300	2632	0	61.5	35-150	0			
4-Nitrophenol	2178	1,300	2632	0	82.7	15-140	0			
Acenaphthene	1949	59	2632	31.43	72.9	45-110	0			
Acenaphthylene	2013	59	2632	16.54	75.8	45-105	0			
Anthracene	2359	59	2632	100.3	85.8	55-105	0			
Benzo(a)anthracene	3552	59	2632	666.4	110	50-110	0			
Benzo(a)pyrene	3721	59	2632	654.5	116	50-110	0			S
Benzo(b)fluoranthene	3741	59	2632	759.4	113	45-115	0			
Benzo(g,h,i)perylene	2599	59	2632	307.7	87	40-125	0			
Benzo(k)fluoranthene	5017	59	2632	882.1	157	45-115	0			SE
Bis(2-chloroethoxy)methane	1906	320	2632	0	72.4	45-110	0			
Bis(2-chloroethyl)ether	1587	320	2632	0	60.3	40-105	0			
Bis(2-chloroisopropyl)ether	1568	320	2632	0	59.6	20-115	0			
Bis(2-ethylhexyl)phthalate	1915	650	2632	35.4	71.4	45-125	0			
Butyl benzyl phthalate	1747	320	2632	0	66.4	50-125	0			
Carbazole	4235	320	2632	0	161	50-150	0			SE
Chrysene	3682	59	2632	770.9	111	55-110	0			S
Dibenzo(a,h)anthracene	2195	59	2632	116.1	79	40-125	0			
Dibenzofuran	2051	320	2632	14.89	77.3	50-105	0			

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

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

Diethyl phthalate	2124	650	2632	0	80.7	50-115	0	
Dimethyl phthalate	2268	650	2632	212.4	78.1	50-110	0	
Di-n-butyl phthalate	1830	650	2632	75.77	66.6	55-110	0	
Di-n-octyl phthalate	2114	320	2632	63.2	77.9	40-130	0	
Fluoranthene	8671	59	2632	2204	246	55-115	0	SE
Fluorene	2105	59	2632	45.66	78.2	50-110	0	
Hexachlorobenzene	1997	320	2632	0	75.9	45-120	0	
Hexachlorobutadiene	1443	320	2632	0	54.8	40-115	0	
Hexachlorocyclopentadiene	485	650	2632	0	18.4	40-115	0	JS
Hexachloroethane	1213	320	2632	0	46.1	35-110	0	
Indeno(1,2,3-cd)pyrene	2644	59	2632	274.6	90	40-120	0	
Isophorone	1953	320	2632	0	74.2	45-110	0	
Naphthalene	1629	59	2632	8.603	61.6	40-105	0	
Nitrobenzene	1744	320	2632	0	66.3	40-115	0	
N-Nitrosodi-n-propylamine	1874	320	2632	0	71.2	40-115	0	
N-Nitrosodiphenylamine	2458	320	2632	0	93.4	50-115	0	
Pentachlorophenol	1934	650	2632	0	73.5	25-120	0	
Phenanthrene	4681	59	2632	837.4	146	50-110	0	SE
Phenol	1797	320	2632	0	68.3	40-100	0	
Pyrene	5847	59	2632	1471	166	45-125	0	SE
Surr: 2,4,6-Tribromophenol	*2791*	0	*3291*	0	*84.8*	*34-140*	0	
Surr: 2-Fluorobiphenyl	*1997*	0	*3291*	0	*60.7*	*12-100*	0	
Surr: 2-Fluorophenol	*2156*	0	*3291*	0	*65.5*	*33-117*	0	
Surr: 4-Terphenyl-d14	*2081*	0	*3291*	0	*63.2*	*25-137*	0	
Surr: Nitrobenzene-d5	*2319*	0	*3291*	0	*70.5*	*37-107*	0	
Surr: Phenol-d6	*2328*	0	*3291*	0	*70.7*	*40-106*	0	

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

MSD Sample ID: **1105174-04A MSD** Units: **µg/Kg** Analysis Date: **5/11/2011 11:19 AM**
Client ID: Run ID: **SVMS5_110510A** SeqNo: **1622744** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1663	310	2567	0	64.8	45-110	1534	8.07	30	
1,2-Dichlorobenzene	1516	310	2567	0	59	45-95	1422	6.35	30	
1,3-Dichlorobenzene	1376	310	2567	0	53.6	40-100	1321	4.06	30	
1,4-Dichlorobenzene	1443	310	2567	0	56.2	35-105	1329	8.19	30	
2,4,5-Trichlorophenol	2258	310	2567	0	88	50-110	2204	2.43	30	
2,4,6-Trichlorophenol	2214	310	2567	0	86.2	45-110	2183	1.41	30	
2,4-Dichlorophenol	2090	310	2567	0	81.4	45-110	2010	3.91	30	
2,4-Dimethylphenol	1814	640	2567	0	70.7	30-105	1683	7.46	30	
2,4-Dinitrophenol	415.9	1,300	2567	0	16.2	15-130	625.9	0	30	J
2,4-Dinitrotoluene	2067	310	2567	0	80.5	50-115	2061	0.275	30	
2,6-Dinitrotoluene	2180	310	2567	0	84.9	50-110	2154	1.22	30	
2-Chloronaphthalene	1955	150	2567	0	76.1	45-105	1817	7.29	30	
2-Chlorophenol	1684	310	2567	0	65.6	45-105	1637	2.83	30	
2-Methylnaphthalene	1988	150	2567	9.926	77	45-105	1809	9.42	30	
2-Methylphenol	1903	310	2567	0	74.1	40-105	1777	6.83	30	
2-Nitroaniline	2476	1,300	2567	0	96.5	45-120	2436	1.66	30	
2-Nitrophenol	1801	310	2567	0	70.2	40-110	1768	1.84	30	
3-Nitroaniline	2447	1,300	2567	0	95.3	25-110	2351	3.98	30	
4-Bromophenyl phenyl ether	2128	310	2567	0	82.9	45-115	1906	11	30	
4-Chloro-3-methylphenol	2366	310	2567	0	92.2	45-115	2288	3.34	30	
4-Chloroaniline	7413	1,300	2567	0	289	15-110	6998	5.76	30	SE
4-Chlorophenyl phenyl ether	1930	310	2567	0	75.2	45-110	1770	8.64	30	
4-Methylphenol	2048	310	2567	0	79.8	40-105	1901	7.45	30	
4-Nitroaniline	1667	1,300	2567	0	64.9	35-150	1619	2.92	30	
4-Nitrophenol	2259	1,300	2567	0	88	15-140	2178	3.69	30	
Acenaphthene	2073	58	2567	31.43	79.5	45-110	1949	6.16	30	
Acenaphthylene	2190	58	2567	16.54	84.7	45-105	2013	8.45	30	
Anthracene	2399	58	2567	100.3	89.5	55-105	2359	1.71	30	
Benzo(a)anthracene	3363	58	2567	666.4	105	50-110	3552	5.48	30	
Benzo(a)pyrene	3566	58	2567	654.5	113	50-110	3721	4.26	30	S
Benzo(b)fluoranthene	3690	58	2567	759.4	114	45-115	3741	1.36	30	
Benzo(g,h,i)perylene	2051	58	2567	307.7	67.9	40-125	2599	23.5	30	
Benzo(k)fluoranthene	4774	58	2567	882.1	152	45-115	5017	4.95	30	SE
Bis(2-chloroethoxy)methane	1976	310	2567	0	77	45-110	1906	3.63	30	
Bis(2-chloroethyl)ether	1575	310	2567	0	61.4	40-105	1587	0.769	30	
Bis(2-chloroisopropyl)ether	1668	310	2567	0	65	20-115	1568	6.14	30	
Bis(2-ethylhexyl)phthalate	2036	640	2567	35.4	77.9	45-125	1915	6.12	30	
Butyl benzyl phthalate	1873	310	2567	0	73	50-125	1747	6.98	30	
Carbazole	4375	310	2567	0	170	50-150	4235	3.26	30	SE
Chrysene	3614	58	2567	770.9	111	55-110	3682	1.85	30	S
Dibenzo(a,h)anthracene	1939	58	2567	116.1	71	40-125	2195	12.4	30	
Dibenzofuran	2172	310	2567	14.89	84	50-105	2051	5.72	30	

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

QC BATCH REPORT

Batch ID: **33204** Instrument ID **SVMS5** Method: **SW8270**

Diethyl phthalate	2237	640	2567	0	87.1	50-115	2124	5.16	30	
Dimethyl phthalate	2212	640	2567	212.4	77.9	50-110	2268	2.5	30	
Di-n-butyl phthalate	1935	640	2567	75.77	72.4	55-110	1830	5.62	30	
Di-n-octyl phthalate	2388	310	2567	63.2	90.5	40-130	2114	12.2	30	
Fluoranthene	7003	58	2567	2204	187	55-115	8671	21.3	30	SE
Fluorene	2203	58	2567	45.66	84	50-110	2105	4.53	30	
Hexachlorobenzene	2159	310	2567	0	84.1	45-120	1997	7.8	30	
Hexachlorobutadiene	1578	310	2567	0	61.5	40-115	1443	8.95	30	
Hexachlorocyclopentadiene	341.5	640	2567	0	13.3	40-115	485	0	30	JS
Hexachloroethane	1145	310	2567	0	44.6	35-110	1213	5.75	30	
Indeno(1,2,3-cd)pyrene	2213	58	2567	274.6	75.5	40-120	2644	17.7	30	
Isophorone	2061	310	2567	0	80.3	45-110	1953	5.37	30	
Naphthalene	1794	58	2567	8.603	69.5	40-105	1629	9.62	30	
Nitrobenzene	1842	310	2567	0	71.7	40-115	1744	5.44	30	
N-Nitrosodi-n-propylamine	1974	310	2567	0	76.9	40-115	1874	5.2	30	
N-Nitrosodiphenylamine	2284	310	2567	0	89	50-115	2458	7.35	30	
Pentachlorophenol	2038	640	2567	0	79.4	25-120	1934	5.26	30	
Phenanthrene	4218	58	2567	837.4	132	50-110	4681	10.4	30	SE
Phenol	1841	310	2567	0	71.7	40-100	1797	2.44	30	
Pyrene	5017	58	2567	1471	138	45-125	5847	15.3	30	SE
Surr: 2,4,6-Tribromophenol	*2815*	0	*3210*	0	*87.7*	*34-140*	2791	*0.866*	*40*	
Surr: 2-Fluorobiphenyl	*2286*	0	*3210*	0	*71.2*	*12-100*	1997	*13.5*	*40*	
Surr: 2-Fluorophenol	*2143*	0	*3210*	0	*66.8*	*33-117*	2156	*0.621*	*40*	
Surr: 4-Terphenyl-d14	*2491*	0	*3210*	0	*77.6*	*25-137*	2081	*17.9*	*40*	
Surr: Nitrobenzene-d5	*2337*	0	*3210*	0	*72.8*	*37-107*	2319	*0.77*	*40*	
Surr: Phenol-d6	*2353*	0	*3210*	0	*73.3*	*40-106*	2328	*1.09*	*40*	

The following samples were analyzed in this batch: 1105150-01A

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89919** Instrument ID **VMS5** Method: **SW8260**

MBLK Sample ID: **VBLKW2-110510-R89919** Units: **µg/L** Analysis Date: **5/11/2011 12:16 PM**
Client ID: Run ID: **VMS5_110510B** SeqNo: **1622018** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
m,p-Xylene	ND	2.0								
o-Xylene	ND	1.0								
Toluene	ND	1.0								
Xylenes, Total	ND	2.0								

LCS Sample ID: **VLCSW2-110510-R89919** Units: **µg/L** Analysis Date: **5/10/2011 10:59 PM**
Client ID: Run ID: **VMS5_110510B** SeqNo: **1622016** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.67	1.0	20	0	113	80-120	0			
Ethylbenzene	22.42	1.0	20	0	112	75-125	0			
m,p-Xylene	42.21	2.0	40	0	106	75-130	0			
o-Xylene	21.2	1.0	20	0	106	80-120	0			
Toluene	21.6	1.0	20	0	108	75-120	0			
Xylenes, Total	63.41	2.0	60	0	106	75-130	0			

LCSD Sample ID: **VLCSDW2-110510-R89919** Units: **µg/L** Analysis Date: **5/10/2011 11:25 PM**
Client ID: Run ID: **VMS5_110510B** SeqNo: **1622017** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.8	1.0	20	0	109	80-120	22.67	3.91	30	
Ethylbenzene	21.34	1.0	20	0	107	75-125	22.42	4.94	30	
m,p-Xylene	40.57	2.0	40	0	101	75-130	42.21	3.96	30	
o-Xylene	20.4	1.0	20	0	102	80-120	21.2	3.85	30	
Toluene	20.82	1.0	20	0	104	75-120	21.6	3.68	30	
Xylenes, Total	60.97	2.0	60	0	102	75-130	63.41	3.92	30	

MS Sample ID: **1105174-04B MS** Units: **µg/Kg** Analysis Date: **5/11/2011 08:21 AM**
Client ID: Run ID: **VMS5_110510B** SeqNo: **1622623** Prep Date: DF: **118**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	2674	120	2360	0	113	75-125	0			
Ethylbenzene	2434	240	2360	0	103	75-125	0			
m,p-Xylene	4506	240	4720	0	95.5	80-125	0			
o-Xylene	2283	120	2360	0	96.8	75-125	0			
Toluene	2491	180	2360	0	106	70-125	0			
Xylenes, Total	6790	350	7080	0	95.9	75-125	0			

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89919** Instrument ID **VMS5** Method: **SW8260**

MSD Sample ID: **1105174-04B MSD** Units: **µg/Kg** Analysis Date: **5/11/2011 08:47 AM**
Client ID: Run ID: **VMS5_110510B** SeqNo: **1622624** Prep Date: DF: **118**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	2657	120	2360	0	113	75-125	2674	0.62	30	
Ethylbenzene	2447	240	2360	0	104	75-125	2434	0.532	30	
m,p-Xylene	4515	240	4720	0	95.6	80-125	4506	0.183	30	
o-Xylene	2259	120	2360	0	95.7	75-125	2283	1.09	30	
Toluene	2493	180	2360	0	106	70-125	2491	0.0947	30	
Xylenes, Total	6773	350	7080	0	95.7	75-125	6790	0.244	30	

The following samples were analyzed in this batch: 1105150-01B

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **33240** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK Sample ID: **MBLK-33240-33240** Units: **mg/Kg** Analysis Date: **5/10/2011 04:00 PM**
Client ID: Run ID: **WETCHEM_110510H** SeqNo: **1621803** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	ND	0.49								

LCS Sample ID: **LCS-33240-33240** Units: **mg/Kg** Analysis Date: **5/10/2011 04:00 PM**
Client ID: Run ID: **WETCHEM_110510H** SeqNo: **1621804** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.667	0.48	1.938	0	86	75-110	0			

LCSD Sample ID: **LCSD-33240-33240** Units: **mg/Kg** Analysis Date: **5/10/2011 04:00 PM**
Client ID: Run ID: **WETCHEM_110510H** SeqNo: **1621812** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.623	0.49	1.946	0	83.4	75-110	1.667	2.68	20	

MS Sample ID: **1105084-01B MS** Units: **mg/Kg** Analysis Date: **5/10/2011 04:00 PM**
Client ID: Run ID: **WETCHEM_110510H** SeqNo: **1621807** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.1	0.50	1.992	0	55.2	60-130	0			S

MSD Sample ID: **1105084-01B MSD** Units: **mg/Kg** Analysis Date: **5/10/2011 04:00 PM**
Client ID: Run ID: **WETCHEM_110510H** SeqNo: **1621808** Prep Date: **5/9/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.138	0.49	1.969	0	57.8	60-130	1.1	3.41	30	S

The following samples were analyzed in this batch: 1105150-01A

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89791** Instrument ID **WETCHEM** Method: **SW9040**

DUP Sample ID: **1105145-01A DUP** Units: **s.u.** Analysis Date: **5/6/2011 11:00 AM**
Client ID: Run ID: **WETCHEM_110506E** SeqNo: **1618948** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.85	0	0	0	0	0-0	6.85	0	20	

DUP Sample ID: **1105149-05A DUP** Units: **s.u.** Analysis Date: **5/6/2011 11:00 AM**
Client ID: Run ID: **WETCHEM_110506E** SeqNo: **1618954** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.45	0	0	0	0	0-0	6.45	0	20	

The following samples were analyzed in this batch: 1105150-01A 1105150-05A

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

Client: HRL Compliance Solutions
Work Order: 1105150
Project: PDC Mesa 16 Background 5/4/11

QC BATCH REPORT

Batch ID: **R89852** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS1-R89852** Units: **% of sample** Analysis Date: **5/6/2011 12:01 PM**
Client ID: Run ID: **MOIST_110506D** SeqNo: **1620089** Prep Date: DF: **1**

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

LCS Sample ID: **LCS-R89852** Units: **% of sample** Analysis Date: **5/6/2011 12:01 PM**
Client ID: Run ID: **MOIST_110506D** SeqNo: **1620085** Prep Date: DF: **1**

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

DUP Sample ID: **1105138-21A DUP** Units: **% of sample** Analysis Date: **5/6/2011 12:01 PM**
Client ID: Run ID: **MOIST_110506D** SeqNo: **1620065** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	18.18	0.050	0	0	0	0-0	18.06	0.662	20	

DUP Sample ID: **1105150-01A DUP** Units: **% of sample** Analysis Date: **5/6/2011 12:01 PM**
Client ID: **Drill Cuttings** Run ID: **MOIST_110506D** SeqNo: **1620079** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	36.15	0.050	0	0	0	0-0	35.4	2.1	20	

The following samples were analyzed in this batch:

1105150-01A	1105150-02A	1105150-03A
1105150-04A	1105150-05A	

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

ALS Laboratory Group

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Chain-of-Custody

Form 202r8

WORKORDER # 1105150

PAGE 1 of 1

DISPOSAL By Lab or Return to Client

PROJECT NAME	PDC Mesa 16 Drill Cuttings	SAMPLER	Casey Richardson
PROJECT No.		SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	HRL Compliance Solutions, Inc.	BILL TO COMPANY	PDC
SEND REPORT TO	Herman Lucero	INVOICE ATTN TO	Adell Heneghan
ADDRESS	744 Horizon Ct. Suite 140	ADDRESS	1775 Sherman Street #3000
CITY / STATE / ZIP	Grand Junction, CO. 81506	CITY / STATE / ZIP	Denver, CO 80203
PHONE	970-243-3271	PHONE	303-860-5800
FAX	970-243-3280	FAX	
E-MAIL	hlucero@hrlcomp.com	E-MAIL	ahenehghan@petd.com

DATE 5/4/2011

TURNAROUND Standard

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	BTEX	TVPH	TEPH	TOTAL METALS - TABLE 910.1	SEMI VOLS	SAR	EC	pH	ARSENIC
1	Drill Cuttings	soil	5/4/2011	1030	3	4°C		x	x	x	x	x	x	x	x	
2	AS 1	soil	5/4/2011	1045	1	4°C										x
3	AS 2	soil	5/4/2011	1050	1	4°C										x
4	AS 3	soil	5/4/2011	1100	1	4°C										x
5	BACKGROUND	soil	5/4/2011	1105	1	4°C							x	x	x	

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

For metals or anions, please detail analytes below.

Comments: 2.8 °C

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

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

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Casey Richardson	5/4/2011	1730
RECEIVED BY		KEITH WIERENGA	5/6/11	1000
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental

Subcontractor:
A & L Great Lakes Agricultural La
3505 Conestoga Dr
Ft. Wayne, IN 46808

TEL: (260) 483-4759
FAX:
Acct #: 91000

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: 06-May-11
COC ID: 2910
Due Date 12-May-11

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	1105150	A	Subcontracted Analyses (SUBCONTRACT)
Work Order		Project Number		B	
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C	
Send Report To	Ann Preston	Inv Attn	Accounts Payable	D	
Address	3352 128th Avenue	Address	3352 128th Avenue	E	
				F	
City/State/Zip	Holland, Michigan 49424-9263	City/State/Zip	Holland, Michigan 49424-9263	G	
Phone	(616) 399-6070	Phone	(616) 399-6070	H	
Fax	(616) 399-6185	Fax	(616) 399-6185	I	
eMail Address	ann.preston@alsglobal.com	eMail CC		J	

Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
1105150-01C (Drill Cuttings)	Soil	4/May/2011 10:30	(1) MISC	X									
1105150-05B (Background)	Soil	4/May/2011 11:05	(1) 8OZGNEAT	X									

Comments:

Please run for SAR-EC

Relinquished by:	Date/Time	Received by:	Date/Time	Cooler IDs	Report/QC Level
	5/6/11				Std
Relinquished by:	Date/Time	Received by:	Date/Time		

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **HRL** Date/Time Received: **06-May-11 10:00**

Work Order: **1105150** Received by: **KRW**

Checklist completed by *Keith Werenga* (eSignature) 06-May-11 (Date) Reviewed by: *Ann Preston* (eSignature) 13-May-11 (Date)

Matrices: Soil
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.8 C		
Cooler(s)/Kit(s):			
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction: