

Terra Energy Partners

Sample Delivery Group: L1423565
Samples Received: 10/28/2021
Project Number:
Description:
Site: RISER SPILL-EXCAVATION
Report To: Mike Gardner
1058 County Road 215
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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

Pace Analytical National

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¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

EXC-SP 1 L1423565-01 Solid

Collected by
Kris Rowe

Collected date/time
10/27/21 14:00

Received date/time
10/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1766437	1	11/03/21 12:55	11/03/21 12:55	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1767470	1	11/02/21 12:43	11/03/21 10:43	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1766621	1	11/03/21 03:25	11/03/21 07:13	ARD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1766242	1	10/28/21 21:02	10/30/21 18:42	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1765827	1	10/29/21 17:37	10/30/21 01:28	AAT	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

EXC-SP 2 L1423565-02 Solid

Collected by
Kris Rowe

Collected date/time
10/27/21 14:15

Received date/time
10/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1766242	1	10/28/21 21:02	10/30/21 19:01	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1765827	1	10/29/21 17:37	10/30/21 01:45	AAT	Mt. Juliet, TN

⁵ Sr

⁶ Qc

⁷ Gl

EXC-SP 3 L1423565-03 Solid

Collected by
Kris Rowe

Collected date/time
10/27/21 14:20

Received date/time
10/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1766437	1	11/03/21 12:58	11/03/21 12:58	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1767470	1	11/02/21 12:43	11/03/21 10:43	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1766621	1	11/03/21 03:25	11/03/21 07:13	ARD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1765544	1	10/28/21 21:02	10/29/21 07:53	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1766242	1	10/28/21 21:02	10/30/21 19:20	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1765805	1	10/29/21 17:29	10/30/21 16:01	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1766468	1	10/31/21 17:12	11/01/21 09:36	AAT	Mt. Juliet, TN

⁸ Al

⁹ Sc

EXC-SP 4 L1423565-04 Solid

Collected by
Kris Rowe

Collected date/time
10/27/21 14:25

Received date/time
10/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1766437	1	11/03/21 13:01	11/03/21 13:01	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1767470	1	11/02/21 12:43	11/03/21 10:43	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1766621	1	11/03/21 03:25	11/03/21 07:13	ARD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1766242	1	10/28/21 21:02	10/30/21 19:51	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1766468	1	10/31/21 17:12	11/01/21 09:56	AAT	Mt. Juliet, TN

EXC-SP 5 L1423565-05 Solid

Collected by
Kris Rowe

Collected date/time
10/27/21 14:35

Received date/time
10/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1766437	1	11/03/21 13:04	11/03/21 13:04	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1767470	1	11/02/21 12:43	11/03/21 10:43	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1766621	1	11/03/21 03:25	11/03/21 07:13	ARD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1766242	1	10/28/21 21:02	10/30/21 20:10	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1766468	1	10/31/21 17:12	11/01/21 10:16	AAT	Mt. Juliet, TN

SAMPLE SUMMARY

EXC-SP 6 L1423565-06 Solid

Collected by
Kris Rowe

Collected date/time
10/27/21 14:45

Received date/time
10/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1766437	1	11/03/21 13:07	11/03/21 13:07	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1768529	1	11/03/21 23:30	11/05/21 18:23	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1767470	1	11/02/21 12:43	11/03/21 10:43	KAB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1766621	1	11/03/21 03:25	11/03/21 07:13	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1767957	1	11/03/21 11:07	11/03/21 22:44	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1766443	1	11/01/21 16:50	11/04/21 10:24	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1767960	5	11/03/21 11:06	11/03/21 21:56	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1765544	1	10/28/21 21:02	10/29/21 08:17	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1766242	1	10/28/21 21:02	10/30/21 20:29	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1768641	1	11/04/21 08:56	11/04/21 19:10	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1766468	1	10/31/21 17:12	11/01/21 10:36	AAT	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

CASE NARRATIVE

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



Chris Ward
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte					
Sodium Adsorption Ratio	22.0		1	11/03/2021 12:55	WG1766437

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	su				
pH	8.19	T8	1	11/03/2021 10:43	WG1767470

Sample Narrative:

L1423565-01 WG1767470: 8.19 at 19.9C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	5930		10.0	1	11/03/2021 07:13	WG1766621

Sample Narrative:

L1423565-01 WG1766621: at 25C

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/30/2021 18:42	WG1766242
Toluene	U		0.00130	0.00500	1	10/30/2021 18:42	WG1766242
Ethylbenzene	U		0.000737	0.00250	1	10/30/2021 18:42	WG1766242
Xylenes, Total	U		0.000880	0.00650	1	10/30/2021 18:42	WG1766242
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/30/2021 18:42	WG1766242
(S) Toluene-d8	94.1			75.0-131		10/30/2021 18:42	WG1766242
(S) 4-Bromofluorobenzene	93.3			67.0-138		10/30/2021 18:42	WG1766242
(S) 1,2-Dichloroethane-d4	120			70.0-130		10/30/2021 18:42	WG1766242

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	U		0.00408	0.0200	1	10/30/2021 01:28	WG1765827
1-Methylnaphthalene	U		0.00449	0.0200	1	10/30/2021 01:28	WG1765827
2-Methylnaphthalene	U		0.00427	0.0200	1	10/30/2021 01:28	WG1765827
(S) p-Terphenyl-d14	86.8			23.0-120		10/30/2021 01:28	WG1765827
(S) Nitrobenzene-d5	59.7			14.0-149		10/30/2021 01:28	WG1765827
(S) 2-Fluorobiphenyl	67.1			34.0-125		10/30/2021 01:28	WG1765827

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00195		0.000467	0.00100	1	10/30/2021 19:01	WG1766242
Toluene	0.00288	J	0.00130	0.00500	1	10/30/2021 19:01	WG1766242
Ethylbenzene	U		0.000737	0.00250	1	10/30/2021 19:01	WG1766242
Xylenes, Total	0.00113	J	0.000880	0.00650	1	10/30/2021 19:01	WG1766242
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/30/2021 19:01	WG1766242
(S) Toluene-d8	96.5			75.0-131		10/30/2021 19:01	WG1766242
(S) 4-Bromofluorobenzene	95.6			67.0-138		10/30/2021 19:01	WG1766242
(S) 1,2-Dichloroethane-d4	118			70.0-130		10/30/2021 19:01	WG1766242

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Naphthalene	U		0.00408	0.0200	1	10/30/2021 01:45	WG1765827
1-Methylnaphthalene	U		0.00449	0.0200	1	10/30/2021 01:45	WG1765827
(S) p-Terphenyl-d14	92.4			23.0-120		10/30/2021 01:45	WG1765827
(S) Nitrobenzene-d5	68.4			14.0-149		10/30/2021 01:45	WG1765827
(S) 2-Fluorobiphenyl	74.0			34.0-125		10/30/2021 01:45	WG1765827

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	10.0		1	11/03/2021 12:58	WG1766437

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.62	T8	1	11/03/2021 10:43	WG1767470

Sample Narrative:

L1423565-03 WG1767470: 8.62 at 19.6C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	2570		10.0	1	11/03/2021 07:13	WG1766621

Sample Narrative:

L1423565-03 WG1766621: at 25C

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.150		0.0217	0.100	1	10/29/2021 07:53	WG1765544
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	93.5			77.0-120		10/29/2021 07:53	WG1765544

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	0.00698		0.000467	0.00100	1	10/30/2021 19:20	WG1766242
Toluene	0.00965		0.00130	0.00500	1	10/30/2021 19:20	WG1766242
Ethylbenzene	U		0.000737	0.00250	1	10/30/2021 19:20	WG1766242
Xylenes, Total	0.00277	J	0.000880	0.00650	1	10/30/2021 19:20	WG1766242
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/30/2021 19:20	WG1766242
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/30/2021 19:20	WG1766242
(S) Toluene-d8	97.9			75.0-131		10/30/2021 19:20	WG1766242
(S) 4-Bromofluorobenzene	92.4			67.0-138		10/30/2021 19:20	WG1766242
(S) 1,2-Dichloroethane-d4	112			70.0-130		10/30/2021 19:20	WG1766242

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.28	J	1.61	4.00	1	10/30/2021 16:01	WG1765805
C28-C36 Motor Oil Range	2.30	J	0.274	4.00	1	10/30/2021 16:01	WG1765805
(S) <i>o</i> -Terphenyl	38.5			18.0-148		10/30/2021 16:01	WG1765805

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Naphthalene	U		0.00408	0.0200	1	11/01/2021 09:36	WG1766468
1-Methylnaphthalene	0.00453	J	0.00449	0.0200	1	11/01/2021 09:36	WG1766468
2-Methylnaphthalene	0.00556	J	0.00427	0.0200	1	11/01/2021 09:36	WG1766468
(S) <i>p</i> -Terphenyl-d14	74.2			23.0-120		11/01/2021 09:36	WG1766468
(S) Nitrobenzene-d5	70.0			14.0-149		11/01/2021 09:36	WG1766468

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) 2-Fluorobiphenyl	65.5			34.0-125		11/01/2021 09:36	WG1766468

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	25.1		1	11/03/2021 13:01	WG1766437

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.18	T8	1	11/03/2021 10:43	WG1767470

Sample Narrative:

L1423565-04 WG1767470: 8.18 at 19.5C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	7650		10.0	1	11/03/2021 07:13	WG1766621

Sample Narrative:

L1423565-04 WG1766621: at 25C

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
Benzene	U		0.000467	0.00100	1	10/30/2021 19:51	WG1766242
Toluene	0.00213	J	0.00130	0.00500	1	10/30/2021 19:51	WG1766242
Ethylbenzene	0.000950	J	0.000737	0.00250	1	10/30/2021 19:51	WG1766242
Xylenes, Total	0.0137		0.000880	0.00650	1	10/30/2021 19:51	WG1766242
1,2,4-Trimethylbenzene	0.00365	J	0.00158	0.00500	1	10/30/2021 19:51	WG1766242
(S) Toluene-d8	96.9			75.0-131		10/30/2021 19:51	WG1766242
(S) 4-Bromofluorobenzene	94.1			67.0-138		10/30/2021 19:51	WG1766242
(S) 1,2-Dichloroethane-d4	118			70.0-130		10/30/2021 19:51	WG1766242

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
Naphthalene	U		0.00408	0.0200	1	11/01/2021 09:56	WG1766468
(S) p-Terphenyl-d14	89.9			23.0-120		11/01/2021 09:56	WG1766468
(S) Nitrobenzene-d5	83.3			14.0-149		11/01/2021 09:56	WG1766468
(S) 2-Fluorobiphenyl	76.8			34.0-125		11/01/2021 09:56	WG1766468

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.37		1	11/03/2021 13:04	WG1766437

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.96	T8	1	11/03/2021 10:43	WG1767470

Sample Narrative:

L1423565-05 WG1767470: 7.96 at 19.5C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	987		10.0	1	11/03/2021 07:13	WG1766621

Sample Narrative:

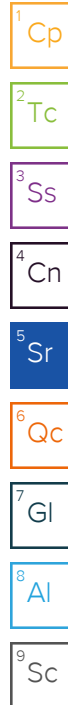
L1423565-05 WG1766621: at 25C

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
Benzene	0.000742	J	0.000467	0.00100	1	10/30/2021 20:10	WG1766242
Toluene	0.00369	J	0.00130	0.00500	1	10/30/2021 20:10	WG1766242
Ethylbenzene	0.00225	J	0.000737	0.00250	1	10/30/2021 20:10	WG1766242
Xylenes, Total	0.0370		0.000880	0.00650	1	10/30/2021 20:10	WG1766242
1,2,4-Trimethylbenzene	0.0173		0.00158	0.00500	1	10/30/2021 20:10	WG1766242
(S) Toluene-d8	94.9			75.0-131		10/30/2021 20:10	WG1766242
(S) 4-Bromofluorobenzene	94.1			67.0-138		10/30/2021 20:10	WG1766242
(S) 1,2-Dichloroethane-d4	120			70.0-130		10/30/2021 20:10	WG1766242

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
1-Methylnaphthalene	0.0206		0.00449	0.0200	1	11/01/2021 10:16	WG1766468
(S) p-Terphenyl-d14	80.2			23.0-120		11/01/2021 10:16	WG1766468
(S) Nitrobenzene-d5	95.8			14.0-149		11/01/2021 10:16	WG1766468
(S) 2-Fluorobiphenyl	71.7			34.0-125		11/01/2021 10:16	WG1766468



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	7.48		1	11/03/2021 13:07	WG1766437

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	11/05/2021 18:23	WG1768529

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.16	T8	1	11/03/2021 10:43	WG1767470

Sample Narrative:

L1423565-06 WG1767470: 8.16 at 19.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1620		10.0	1	11/03/2021 07:13	WG1766621

Sample Narrative:

L1423565-06 WG1766621: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	111		0.0852	0.500	1	11/03/2021 22:44	WG1767957
Cadmium	0.395	J	0.0471	0.500	1	11/03/2021 22:44	WG1767957
Copper	8.68		0.400	2.00	1	11/03/2021 22:44	WG1767957
Lead	16.7		0.208	0.500	1	11/03/2021 22:44	WG1767957
Nickel	8.59		0.132	2.00	1	11/03/2021 22:44	WG1767957
Selenium	U		0.764	2.00	1	11/03/2021 22:44	WG1767957
Silver	U		0.127	1.00	1	11/03/2021 22:44	WG1767957
Zinc	43.6	O1	0.832	5.00	1	11/03/2021 22:44	WG1767957

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.32		0.0167	0.200	1	11/04/2021 10:24	WG1766443

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	1.70		0.100	1.00	5	11/03/2021 21:56	WG1767960

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0495	J	0.0217	0.100	1	10/29/2021 08:17	WG1765544
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	89.2			77.0-120		10/29/2021 08:17	WG1765544

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	10/30/2021 20:29	WG1766242
Toluene	U		0.00130	0.00500	1	10/30/2021 20:29	WG1766242
Ethylbenzene	U		0.000737	0.00250	1	10/30/2021 20:29	WG1766242
Xylenes, Total	U		0.000880	0.00650	1	10/30/2021 20:29	WG1766242
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	10/30/2021 20:29	WG1766242
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	10/30/2021 20:29	WG1766242
(S) Toluene-d8	96.6			75.0-131		10/30/2021 20:29	WG1766242
(S) 4-Bromofluorobenzene	94.9			67.0-138		10/30/2021 20:29	WG1766242
(S) 1,2-Dichloroethane-d4	115			70.0-130		10/30/2021 20:29	WG1766242

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	2.81	U	1.61	4.00	1	11/04/2021 19:10	WG1768641
C28-C36 Motor Oil Range	4.56		0.274	4.00	1	11/04/2021 19:10	WG1768641
(S) o-Terphenyl	28.7			18.0-148		11/04/2021 19:10	WG1768641

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	11/01/2021 10:36	WG1766468
Acenaphthene	U		0.00209	0.00600	1	11/01/2021 10:36	WG1766468
Acenaphthylene	U		0.00216	0.00600	1	11/01/2021 10:36	WG1766468
Benzo(a)anthracene	U		0.00173	0.00600	1	11/01/2021 10:36	WG1766468
Benzo(a)pyrene	U		0.00179	0.00600	1	11/01/2021 10:36	WG1766468
Benzo(b)fluoranthene	U		0.00153	0.00600	1	11/01/2021 10:36	WG1766468
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	11/01/2021 10:36	WG1766468
Benzo(k)fluoranthene	U		0.00215	0.00600	1	11/01/2021 10:36	WG1766468
Chrysene	U		0.00232	0.00600	1	11/01/2021 10:36	WG1766468
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	11/01/2021 10:36	WG1766468
Fluoranthene	U		0.00227	0.00600	1	11/01/2021 10:36	WG1766468
Fluorene	U		0.00205	0.00600	1	11/01/2021 10:36	WG1766468
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	11/01/2021 10:36	WG1766468
Naphthalene	U		0.00408	0.0200	1	11/01/2021 10:36	WG1766468
Phenanthrene	0.00282	U	0.00231	0.00600	1	11/01/2021 10:36	WG1766468
Pyrene	U		0.00200	0.00600	1	11/01/2021 10:36	WG1766468
1-Methylnaphthalene	U		0.00449	0.0200	1	11/01/2021 10:36	WG1766468
2-Methylnaphthalene	U		0.00427	0.0200	1	11/01/2021 10:36	WG1766468
2-Chloronaphthalene	U		0.00466	0.0200	1	11/01/2021 10:36	WG1766468
(S) p-Terphenyl-d14	93.7			23.0-120		11/01/2021 10:36	WG1766468
(S) Nitrobenzene-d5	92.1			14.0-149		11/01/2021 10:36	WG1766468
(S) 2-Fluorobiphenyl	81.8			34.0-125		11/01/2021 10:36	WG1766468

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3726717-1 11/05/21 17:41

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

L1423839-51 Original Sample (OS) • Duplicate (DUP)

(OS) L1423839-51 11/05/21 18:41 • (DUP) R3726717-3 11/05/21 18:46

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	0.331	1	200	J P1	20

L1423839-61 Original Sample (OS) • Duplicate (DUP)

(OS) L1423839-61 11/05/21 20:41 • (DUP) R3726717-7 11/05/21 20:46

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	U	0.386	1	200	J P1	20

Laboratory Control Sample (LCS)

(LCS) R3726717-2 11/05/21 17:49

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.4	104	80.0-120	

L1423839-54 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1423839-54 11/05/21 19:23 • (MS) R3726717-4 11/05/21 19:31 • (MSD) R3726717-5 11/05/21 19:37

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Hexavalent Chromium	20.0	U	20.7	20.2	103	101	1	75.0-125			2.30	20

L1423839-54 Original Sample (OS) • Matrix Spike (MS)

(OS) L1423839-54 11/05/21 19:23 • (MS) R3726717-6 11/05/21 19:42

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	638	U	659	103	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1423565-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1423565-05 11/03/21 10:43 • (DUP) R3724853-2 11/03/21 10:43

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.96	7.95	1	0.126		1

Sample Narrative:

OS: 7.96 at 19.5C

DUP: 7.95 at 19.6C



L1423847-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1423847-06 11/03/21 10:43 • (DUP) R3724853-3 11/03/21 10:43

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.20	8.16	1	0.489		1

Sample Narrative:

OS: 8.2 at 19.1C

DUP: 8.16 at 19.4C

Laboratory Control Sample (LCS)

(LCS) R3724853-1 11/03/21 10:43

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

Sample Narrative:

LCS: 10 at 19.8C

Method Blank (MB)

(MB) R3724706-1 11/03/21 07:13

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

Sample Narrative:

BLANK: at 25C

L1424201-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1424201-05 11/03/21 07:13 • (DUP) R3724706-3 11/03/21 07:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	4670	4860	1	3.99		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1424346-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1424346-01 11/03/21 07:13 • (DUP) R3724706-4 11/03/21 07:13

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	233	234	1	0.557		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3724706-2 11/03/21 07:13

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	271	101	85.0-115	

Sample Narrative:

LCS: at 25C

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3725322-1 11/03/21 22:38

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3725322-2 11/03/21 22:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	104	104	80.0-120	
Cadmium	100	98.8	98.8	80.0-120	
Copper	100	105	105	80.0-120	
Lead	100	99.5	99.5	80.0-120	
Nickel	100	99.5	99.5	80.0-120	
Selenium	100	99.5	99.5	80.0-120	
Silver	20.0	19.9	99.3	80.0-120	
Zinc	100	96.2	96.2	80.0-120	

L1423565-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1423565-06 11/03/21 22:44 • (MS) R3725322-5 11/03/21 22:52 • (MSD) R3725322-6 11/03/21 22:55

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	100	111	202	190	90.2	79.0	1	75.0-125			5.71	20
Cadmium	100	0.395	101	91.0	101	90.6	1	75.0-125			10.3	20
Copper	100	8.68	115	105	107	95.8	1	75.0-125			9.72	20
Lead	100	16.7	117	107	99.9	90.6	1	75.0-125			8.29	20
Nickel	100	8.59	109	98.7	101	90.1	1	75.0-125			10.4	20
Selenium	100	U	102	93.5	102	93.5	1	75.0-125			9.08	20
Silver	20.0	U	20.9	18.8	104	94.2	1	75.0-125			10.2	20
Zinc	100	43.6	130	119	86.0	75.0	1	75.0-125			8.84	20

Method Blank (MB)

(MB) R3725570-1 11/04/21 10:14

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

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

(LCS) R3725570-2 11/04/21 10:16 • (LCSD) R3725570-3 11/04/21 10:19

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.914	0.908	91.4	90.8	80.0-120			0.696	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3725204-1 11/03/21 21:49

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

Laboratory Control Sample (LCS)

(LCS) R3725204-2 11/03/21 21:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	93.8	93.8	80.0-120	

L1423565-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1423565-06 11/03/21 21:56 • (MS) R3725204-5 11/03/21 22:06 • (MSD) R3725204-6 11/03/21 22:09

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	1.70	96.3	83.6	94.6	81.9	5	75.0-125			14.1	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3724320-3 10/29/21 04:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	97.3			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3724320-2 10/29/21 03:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.67	103	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			97.5	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3725900-3 10/30/21 10:37

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
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	97.7			75.0-131
(S) 4-Bromofluorobenzene	94.8			67.0-138
(S) 1,2-Dichloroethane-d4	112			70.0-130

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

(LCS) R3725900-1 10/30/21 09:21 • (LCSD) R3725900-2 10/30/21 09:40

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	0.133	0.129	106	103	70.0-123			3.05	20
Ethylbenzene	0.125	0.119	0.113	95.2	90.4	74.0-126			5.17	20
Toluene	0.125	0.118	0.112	94.4	89.6	75.0-121			5.22	20
1,2,4-Trimethylbenzene	0.125	0.122	0.121	97.6	96.8	70.0-126			0.823	20
1,3,5-Trimethylbenzene	0.125	0.129	0.126	103	101	73.0-127			2.35	20
Xylenes, Total	0.375	0.345	0.341	92.0	90.9	72.0-127			1.17	20
(S) Toluene-d8				94.9	94.5	75.0-131				
(S) 4-Bromofluorobenzene				100	101	67.0-138				
(S) 1,2-Dichloroethane-d4				119	120	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3723718-1 10/30/21 12:37

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	58.3			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3723718-2 10/30/21 12:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	27.3	54.6	50.0-150	
(S) o-Terphenyl			36.6	18.0-148	

L1423129-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1423129-07 10/30/21 13:45 • (MS) R3723718-3 10/30/21 13:59 • (MSD) R3723718-4 10/30/21 14:12

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 %
C10-C28 Diesel Range	49.4	3.01	31.5	29.0	57.7	52.6	1	50.0-150			8.26	20
(S) o-Terphenyl					41.8	33.0		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3725765-1 11/04/21 18:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	56.9			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3725765-2 11/04/21 18:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	35.4	70.8	50.0-150	
(S) o-Terphenyl			86.6	18.0-148	

L1423637-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1423637-06 11/04/21 19:49 • (MS) R3725765-3 11/04/21 20:02 • (MSD) R3725765-4 11/04/21 20:15

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 %
C10-C28 Diesel Range	48.8	U	26.1	30.6	53.5	61.9	1	50.0-150			15.9	20
(S) o-Terphenyl					59.4	67.0		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3723631-2 10/29/21 21:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Naphthalene	U		0.00408	0.0200
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
(S) Nitrobenzene-d5	69.3			14.0-149
(S) 2-Fluorobiphenyl	81.8			34.0-125
(S) p-Terphenyl-d14	110			23.0-120

Laboratory Control Sample (LCS)

(LCS) R3723631-1 10/29/21 20:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Naphthalene	0.0800	0.0521	65.1	50.0-120	
1-Methylnaphthalene	0.0800	0.0573	71.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0561	70.1	50.0-120	
(S) Nitrobenzene-d5			76.0	14.0-149	
(S) 2-Fluorobiphenyl			83.9	34.0-125	
(S) p-Terphenyl-d14			101	23.0-120	

L1422234-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1422234-06 10/29/21 21:18 • (MS) R3723631-3 10/29/21 21:35 • (MSD) R3723631-4 10/29/21 21:53

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 %
Naphthalene	0.0760	U	0.0381	0.0371	50.1	48.1	1	10.0-135			2.66	27
1-Methylnaphthalene	0.0760	U	0.0439	0.0418	57.8	54.1	1	10.0-142			4.90	28
2-Methylnaphthalene	0.0760	U	0.0413	0.0392	54.3	50.8	1	10.0-137			5.22	28
(S) Nitrobenzene-d5					50.5	55.4		14.0-149				
(S) 2-Fluorobiphenyl					63.5	67.0		34.0-125				
(S) p-Terphenyl-d14					93.9	83.4		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3723778-2 11/01/21 07:16

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	100			14.0-149
(S) 2-Fluorobiphenyl	101			34.0-125
(S) p-Terphenyl-d14	121	J1		23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3723778-1 11/01/21 06:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0690	86.3	50.0-126	
Acenaphthene	0.0800	0.0714	89.3	50.0-120	
Acenaphthylene	0.0800	0.0729	91.1	50.0-120	
Benzo(a)anthracene	0.0800	0.0685	85.6	45.0-120	
Benzo(a)pyrene	0.0800	0.0539	67.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0741	92.6	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0733	91.6	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0725	90.6	49.0-125	
Chrysene	0.0800	0.0705	88.1	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0747	93.4	47.0-125	
Fluoranthene	0.0800	0.0713	89.1	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3723778-1 11/01/21 06:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Fluorene	0.0800	0.0716	89.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0733	91.6	46.0-125	
Naphthalene	0.0800	0.0707	88.4	50.0-120	
Phenanthrene	0.0800	0.0709	88.6	47.0-120	
Pyrene	0.0800	0.0696	87.0	43.0-123	
1-Methylnaphthalene	0.0800	0.0707	88.4	51.0-121	
2-Methylnaphthalene	0.0800	0.0687	85.9	50.0-120	
2-Chloronaphthalene	0.0800	0.0704	88.0	50.0-120	
(S) Nitrobenzene-d5			101	14.0-149	
(S) 2-Fluorobiphenyl			99.8	34.0-125	
(S) p-Terphenyl-d14			116	23.0-120	

L1423845-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1423845-18 11/01/21 11:56 • (MS) R3723778-3 11/01/21 12:16 • (MSD) R3723778-4 11/01/21 12:36

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Anthracene	0.0784	U	0.0427	0.0420	54.5	52.8	1	10.0-145			1.65	30
Acenaphthene	0.0784	U	0.0451	0.0469	57.5	58.9	1	14.0-127			3.91	27
Acenaphthylene	0.0784	U	0.0459	0.0456	58.5	57.3	1	21.0-124			0.656	25
Benzo(a)anthracene	0.0784	0.00295	0.0426	0.0402	50.6	46.8	1	10.0-139			5.80	30
Benzo(a)pyrene	0.0784	0.00276	0.0445	0.0429	53.2	50.4	1	10.0-141			3.66	31
Benzo(b)fluoranthene	0.0784	0.00320	0.0458	0.0445	54.3	51.9	1	10.0-140			2.88	36
Benzo(g,h,i)perylene	0.0784	0.00246	0.0456	0.0447	55.0	53.1	1	10.0-140			1.99	33
Benzo(k)fluoranthene	0.0784	U	0.0469	0.0466	59.8	58.5	1	10.0-137			0.642	31
Chrysene	0.0784	0.00277	0.0469	0.0464	56.3	54.8	1	10.0-145			1.07	30
Dibenz(a,h)anthracene	0.0784	U	0.0434	0.0428	55.4	53.8	1	10.0-132			1.39	31
Fluoranthene	0.0784	0.00569	0.0459	0.0447	51.3	49.0	1	10.0-153			2.65	33
Fluorene	0.0784	U	0.0440	0.0461	56.1	57.9	1	11.0-130			4.66	29
Indeno(1,2,3-cd)pyrene	0.0784	0.00230	0.0418	0.0394	50.4	46.6	1	10.0-137			5.91	32
Naphthalene	0.0784	0.0174	0.0490	0.0780	40.3	76.1	1	10.0-135		J3	45.7	27
Phenanthrene	0.0784	0.00342	0.0441	0.0480	51.9	56.0	1	10.0-144			8.47	31
Pyrene	0.0784	0.00774	0.0490	0.0465	52.6	48.7	1	10.0-148			5.24	35
1-Methylnaphthalene	0.0784	0.0175	0.0480	0.0721	38.9	68.6	1	10.0-142		J3	40.1	28
2-Methylnaphthalene	0.0784	0.0534	0.0454	0.112	0.000	73.6	1	10.0-137	J6	J3	84.6	28
2-Chloronaphthalene	0.0784	U	0.0451	0.0470	57.5	59.0	1	29.0-120			4.13	24
(S) Nitrobenzene-d5					66.2	74.3		14.0-149				
(S) 2-Fluorobiphenyl					64.6	72.7		34.0-125				
(S) p-Terphenyl-d14					72.1	77.8		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

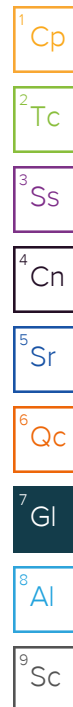
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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

Abbreviations and Definitions

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

Qualifier	Description
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.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

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

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

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



L1423565(not on COC but same cooler) HRLCSCO NCF

R5

Time estimate: 0h

Time spent: 0h

Grouping date: 29 October 20

Members

☒ Oliva Turner (responsible)



Chris Ward

- ☐ Parameter(s) past holding time
- ☐ Temperature not in range
- ☐ Improper container type
- ☐ pH not in range
- ☐ Insufficient sample volume
- ☐ Sample is biphasic
- ☐ Vials received with headspace
- ☐ Broken container
- ☐ Sufficient sample remains
- ☐ If broken container: Insufficient packing material around container
- ☐ If broken container: Insufficient packing material inside cooler
- ☐ If broken container: Improper handling by carrier: _____
- ☐ If broken container: Sample was frozen
- ☐ If broken container: Container lid not intact
- ☐ Client informed by Call
- ☐ Client informed by Email
- ☐ Client informed by Voicemail
- ☐ Date/Time: _____
- ☐ PM initials: _____
- ☐ Client Contact: _____
- ☐ Login Clarification needed
- ☐ Chain of custody is incomplete
- ☐ Please specify Metals requested
- ☐ Please specify TCLP requested
- ☐ Received additional samples not listed on COC
- ☐ Sample IDs on containers do not match IDs on COC
- ☐ Client did not "X" analysis
- ☐ Chain of Custody is missing
- ☐ If no COC: Received by: _____
- ☐ If no COC: Date/Time: _____
- ☐ If no COC: Temp./Cont.Rec./pH: _____
- ☐ If no COC: Carrier: _____
- ☐ If no COC: Tracking #: _____
- ☐ Client informed by call
- ☐ Client informed by Email
- ☐ Client informed by Voicemail
- ☐ Date/Time: _____

☐ PM initials: _____

☐ Client Contact: _____

☐ Login Clarification needed

☐ Chain of custody is incomplete

☐ Please specify Metals requested

☐ Please specify TCLP requested

☒ Received additional samples not listed on COC

☐ Sample IDs on containers do not match IDs on COC

☐ Client did not "X" analysis

☒ Chain of Custody is missing

☒ If no COC: Received by: Kate H.

☒ If no COC: Date/Time: 10/28/21 0930

☒ If no COC: Temp./Cont. Rec./pH: 2.0+0=2.0

☒ If no COC: Carrier: Fedex

☒ If no COC: Tracking #: 5016 1232 2242

☐ Client informed by call

☒ Client informed by Email

☐ Client informed by Voicemail

☒ Date/Time: 10/28/21@1751 _____

☒ PM initials: _____ CMW _____

☒ Client Contact: _____ Kris Rowe _____

Comments		
<div><i>Olivia Turner</i></div> <div>The ids are BKGD 1 16:10, BKGD 2 16:10, BKGD 3 16:20, BKGD 4 16:30, BKGD 5 16:40</div>		28 October 2021 5:22 PM
<div><i>Chris Ward</i></div> <div>Please log to its own SDG using the attached</div>		29 October 2021 9:00 AM
<div><i>Olivia Turner</i></div> <div>Done</div>		29 October 2021 3:23 PM