

January 20, 2022

Terra Energy Partners

Sample Delivery Group: L1448180
Samples Received: 01/05/2022
Project Number: SPILL. CONF.
Description: Terra Energy Partners-RGU Mud Can 2.0
Site: TEP RGU MUD CAN 2.0
Report To: Mike Gardner
1058 County Road 215
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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Pace Analytical National

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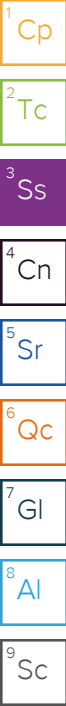
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SAMPLE SUMMARY

SP 1 L1448180-01 Solid

				Collected by Kris Rowe	Collected date/time 01/03/22 13:15	Received date/time 01/05/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1799368	1	01/20/22 00:22	01/20/22 00:22	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1800007	1	01/10/22 21:00	01/11/22 19:20	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1798775	1	01/09/22 09:00	01/09/22 12:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1799561	1	01/10/22 05:18	01/10/22 06:55	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010	WG1801583	.96	01/13/22 09:19	01/14/22 14:36	TJG	Allen, TX
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1798206	1	01/09/22 11:30	01/10/22 19:22	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1803585	1	01/17/22 17:11	01/19/22 12:26	CLK	Allen, TX
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1798735	1	01/05/22 17:34	01/06/22 01:11	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1798721	1	01/05/22 17:34	01/06/22 06:16	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1799433	1	01/10/22 08:13	01/10/22 15:26	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1798918	1	01/09/22 16:10	01/10/22 14:56	LEA	Mt. Juliet, TN



SP 2 L1448180-02 Solid

				Collected by Kris Rowe	Collected date/time 01/03/22 13:30	Received date/time 01/05/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1799368	1	01/20/22 00:24	01/20/22 00:24	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1800007	1	01/10/22 21:00	01/11/22 19:25	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1798775	1	01/09/22 09:00	01/09/22 12:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1799561	1	01/10/22 05:18	01/10/22 06:55	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010	WG1801583	.97	01/13/22 09:19	01/14/22 16:16	TJG	Allen, TX
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1798206	1	01/09/22 11:30	01/10/22 19:30	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1803585	1	01/17/22 17:11	01/19/22 12:48	CLK	Allen, TX
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1798735	1	01/05/22 17:34	01/06/22 01:33	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1798721	1	01/05/22 17:34	01/06/22 06:35	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1799433	1	01/10/22 08:13	01/10/22 15:39	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1798918	1	01/09/22 16:10	01/10/22 15:14	LEA	Mt. Juliet, TN

SP 3 L1448180-03 Solid

				Collected by Kris Rowe	Collected date/time 01/03/22 14:00	Received date/time 01/05/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1799368	1	01/20/22 00:27	01/20/22 00:27	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1800007	1	01/10/22 21:00	01/11/22 20:12	JER	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1798775	1	01/09/22 09:00	01/09/22 12:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1799561	1	01/10/22 05:18	01/10/22 06:55	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010	WG1801583	1.05	01/13/22 09:19	01/14/22 16:20	TJG	Allen, TX
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1798206	1	01/09/22 11:30	01/10/22 19:32	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1803585	1	01/17/22 17:11	01/19/22 12:55	CLK	Allen, TX
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1798735	1	01/05/22 17:34	01/06/22 01:55	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1798721	1	01/05/22 17:34	01/06/22 06:54	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1799433	1	01/10/22 08:13	01/10/22 14:19	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1798918	1	01/09/22 16:10	01/10/22 15:31	LEA	Mt. Juliet, TN

BKGD 1 L1448180-04 Solid

				Collected by Kris Rowe	Collected date/time 01/03/22 14:20	Received date/time 01/05/22 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1799368	1	01/20/22 00:30	01/20/22 00:30	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1798775	1	01/09/22 09:00	01/09/22 12:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1799561	1	01/10/22 05:18	01/10/22 06:55	ARD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1803585	1	01/17/22 17:11	01/19/22 13:02	CLK	Allen, TX

SAMPLE SUMMARY

BKGD 2 L1448180-05 Solid

Collected by
Kris Rowe

Collected date/time
01/03/22 14:40

Received date/time
01/05/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1799368	1	01/19/22 23:24	01/19/22 23:24	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1798775	1	01/09/22 09:00	01/09/22 12:00	BMD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1799561	1	01/10/22 05:18	01/10/22 06:55	ARD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1803585	1	01/17/22 17:11	01/19/22 13:54	CLK	Allen, TX

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



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.53		1	01/20/2022 00:22	WG1799368

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.514	J	0.255	1.00	1	01/11/2022 19:20	WG1800007

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.72	T8	1	01/09/2022 12:00	WG1798775

Sample Narrative:

L1448180-01 WG1798775: 7.72 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1740		10.0	1	01/10/2022 06:55	WG1799561

Sample Narrative:

L1448180-01 WG1799561: at 25C

Metals (ICP) by Method 6010

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	258		0.0749	0.960	.96	01/14/2022 14:36	WG1801583
Cadmium	0.274	J	0.0442	0.480	.96	01/14/2022 14:36	WG1801583
Copper	13.3		0.265	0.960	.96	01/14/2022 14:36	WG1801583
Lead	9.90		0.101	0.480	.96	01/14/2022 14:36	WG1801583
Nickel	14.0		0.0730	0.480	.96	01/14/2022 14:36	WG1801583
Selenium	0.951	J	0.348	0.960	.96	01/14/2022 14:36	WG1801583
Silver	U		0.0246	0.240	.96	01/14/2022 14:36	WG1801583
Zinc	47.1		0.375	4.80	.96	01/14/2022 14:36	WG1801583

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	1.17		0.0167	0.200	1	01/10/2022 19:22	WG1798206

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.05		0.130	1.50	1	01/19/2022 12:26	WG1803585

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	0.0519	J	0.0217	0.100	1	01/06/2022 01:11	WG1798735
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	106			77.0-120		01/06/2022 01:11	WG1798735

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	01/06/2022 06:16	WG1798721
Toluene	U		0.00130	0.00500	1	01/06/2022 06:16	WG1798721
Ethylbenzene	U		0.000737	0.00250	1	01/06/2022 06:16	WG1798721
Xylenes, Total	U		0.000880	0.00650	1	01/06/2022 06:16	WG1798721
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	01/06/2022 06:16	WG1798721
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	01/06/2022 06:16	WG1798721
(S) Toluene-d8	106			75.0-131		01/06/2022 06:16	WG1798721
(S) 4-Bromofluorobenzene	96.6			67.0-138		01/06/2022 06:16	WG1798721
(S) 1,2-Dichloroethane-d4	100			70.0-130		01/06/2022 06:16	WG1798721

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	11.4		1.61	4.00	1	01/10/2022 15:26	WG1799433
C28-C36 Motor Oil Range	41.6		0.274	4.00	1	01/10/2022 15:26	WG1799433
(S) o-Terphenyl	62.0			18.0-148		01/10/2022 15:26	WG1799433

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	01/10/2022 14:56	WG1798918
Acenaphthene	U		0.00209	0.00600	1	01/10/2022 14:56	WG1798918
Acenaphthylene	U		0.00216	0.00600	1	01/10/2022 14:56	WG1798918
Benzo(a)anthracene	U		0.00173	0.00600	1	01/10/2022 14:56	WG1798918
Benzo(a)pyrene	U		0.00179	0.00600	1	01/10/2022 14:56	WG1798918
Benzo(b)fluoranthene	U		0.00153	0.00600	1	01/10/2022 14:56	WG1798918
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	01/10/2022 14:56	WG1798918
Benzo(k)fluoranthene	U		0.00215	0.00600	1	01/10/2022 14:56	WG1798918
Chrysene	U		0.00232	0.00600	1	01/10/2022 14:56	WG1798918
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	01/10/2022 14:56	WG1798918
Fluoranthene	U		0.00227	0.00600	1	01/10/2022 14:56	WG1798918
Fluorene	U		0.00205	0.00600	1	01/10/2022 14:56	WG1798918
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	01/10/2022 14:56	WG1798918
Naphthalene	U		0.00408	0.0200	1	01/10/2022 14:56	WG1798918
Phenanthrene	U		0.00231	0.00600	1	01/10/2022 14:56	WG1798918
Pyrene	U		0.00200	0.00600	1	01/10/2022 14:56	WG1798918
1-Methylnaphthalene	U		0.00449	0.0200	1	01/10/2022 14:56	WG1798918
2-Methylnaphthalene	U		0.00427	0.0200	1	01/10/2022 14:56	WG1798918
2-Chloronaphthalene	U		0.00466	0.0200	1	01/10/2022 14:56	WG1798918
(S) p-Terphenyl-d14	95.8			23.0-120		01/10/2022 14:56	WG1798918
(S) Nitrobenzene-d5	69.0			14.0-149		01/10/2022 14:56	WG1798918
(S) 2-Fluorobiphenyl	82.4			34.0-125		01/10/2022 14:56	WG1798918

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	1.04		1	01/20/2022 00:24	WG1799368

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	01/11/2022 19:25	WG1800007

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.97	T8	1	01/09/2022 12:00	WG1798775

Sample Narrative:

L1448180-02 WG1798775: 7.97 at 19.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	309		10.0	1	01/10/2022 06:55	WG1799561

Sample Narrative:

L1448180-02 WG1799561: at 25C

Metals (ICP) by Method 6010

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	225		0.0757	0.970	.97	01/14/2022 16:16	WG1801583
Cadmium	0.258	J	0.0446	0.485	.97	01/14/2022 16:16	WG1801583
Copper	12.3		0.268	0.970	.97	01/14/2022 16:16	WG1801583
Lead	9.82		0.102	0.485	.97	01/14/2022 16:16	WG1801583
Nickel	12.6		0.0737	0.485	.97	01/14/2022 16:16	WG1801583
Selenium	0.931	J	0.351	0.970	.97	01/14/2022 16:16	WG1801583
Silver	U		0.0248	0.243	.97	01/14/2022 16:16	WG1801583
Zinc	43.1		0.379	4.85	.97	01/14/2022 16:16	WG1801583

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.762		0.0167	0.200	1	01/10/2022 19:30	WG1798206

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.30		0.130	1.50	1	01/19/2022 12:48	WG1803585

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	1.36		0.0217	0.100	1	01/06/2022 01:33	WG1798735
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	98.3			77.0-120		01/06/2022 01:33	WG1798735

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	01/06/2022 06:35	WG1798721
Toluene	U		0.00130	0.00500	1	01/06/2022 06:35	WG1798721
Ethylbenzene	U		0.000737	0.00250	1	01/06/2022 06:35	WG1798721
Xylenes, Total	0.00913		0.000880	0.00650	1	01/06/2022 06:35	WG1798721
1,2,4-Trimethylbenzene	0.0194		0.00158	0.00500	1	01/06/2022 06:35	WG1798721
1,3,5-Trimethylbenzene	0.0176		0.00200	0.00500	1	01/06/2022 06:35	WG1798721
(S) Toluene-d8	106			75.0-131		01/06/2022 06:35	WG1798721
(S) 4-Bromofluorobenzene	99.2			67.0-138		01/06/2022 06:35	WG1798721
(S) 1,2-Dichloroethane-d4	97.9			70.0-130		01/06/2022 06:35	WG1798721

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	14.1		1.61	4.00	1	01/10/2022 15:39	WG1799433
C28-C36 Motor Oil Range	35.1		0.274	4.00	1	01/10/2022 15:39	WG1799433
(S) o-Terphenyl	60.9			18.0-148		01/10/2022 15:39	WG1799433

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	0.00644		0.00230	0.00600	1	01/10/2022 15:14	WG1798918
Acenaphthene	0.00463	U	0.00209	0.00600	1	01/10/2022 15:14	WG1798918
Acenaphthylene	U		0.00216	0.00600	1	01/10/2022 15:14	WG1798918
Benzo(a)anthracene	0.0114		0.00173	0.00600	1	01/10/2022 15:14	WG1798918
Benzo(a)pyrene	0.00936		0.00179	0.00600	1	01/10/2022 15:14	WG1798918
Benzo(b)fluoranthene	0.0126		0.00153	0.00600	1	01/10/2022 15:14	WG1798918
Benzo(g,h,i)perylene	0.00619		0.00177	0.00600	1	01/10/2022 15:14	WG1798918
Benzo(k)fluoranthene	0.00424	U	0.00215	0.00600	1	01/10/2022 15:14	WG1798918
Chrysene	0.0111		0.00232	0.00600	1	01/10/2022 15:14	WG1798918
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	01/10/2022 15:14	WG1798918
Fluoranthene	0.0321		0.00227	0.00600	1	01/10/2022 15:14	WG1798918
Fluorene	0.00368	U	0.00205	0.00600	1	01/10/2022 15:14	WG1798918
Indeno(1,2,3-cd)pyrene	0.00706		0.00181	0.00600	1	01/10/2022 15:14	WG1798918
Naphthalene	U		0.00408	0.0200	1	01/10/2022 15:14	WG1798918
Phenanthrene	0.0305		0.00231	0.00600	1	01/10/2022 15:14	WG1798918
Pyrene	0.0292		0.00200	0.00600	1	01/10/2022 15:14	WG1798918
1-Methylnaphthalene	U		0.00449	0.0200	1	01/10/2022 15:14	WG1798918
2-Methylnaphthalene	0.00633	U	0.00427	0.0200	1	01/10/2022 15:14	WG1798918
2-Chloronaphthalene	U		0.00466	0.0200	1	01/10/2022 15:14	WG1798918
(S) p-Terphenyl-d14	112			23.0-120		01/10/2022 15:14	WG1798918
(S) Nitrobenzene-d5	84.7			14.0-149		01/10/2022 15:14	WG1798918
(S) 2-Fluorobiphenyl	97.3			34.0-125		01/10/2022 15:14	WG1798918

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	1.08		1	01/20/2022 00:27	WG1799368

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.336	J P1	0.255	1.00	1	01/11/2022 20:12	WG1800007

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.33	T8	1	01/09/2022 12:00	WG1798775

Sample Narrative:

L1448180-03 WG1798775: 8.33 at 20.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	207		10.0	1	01/10/2022 06:55	WG1799561

Sample Narrative:

L1448180-03 WG1799561: at 25C

Metals (ICP) by Method 6010

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	264		0.0819	1.05	1.05	01/14/2022 16:20	WG1801583
Cadmium	0.289	J	0.0483	0.525	1.05	01/14/2022 16:20	WG1801583
Copper	14.2		0.290	1.05	1.05	01/14/2022 16:20	WG1801583
Lead	11.2		0.110	0.525	1.05	01/14/2022 16:20	WG1801583
Nickel	14.5		0.0798	0.525	1.05	01/14/2022 16:20	WG1801583
Selenium	0.824	J	0.380	1.05	1.05	01/14/2022 16:20	WG1801583
Silver	U		0.0269	0.263	1.05	01/14/2022 16:20	WG1801583
Zinc	49.5		0.410	5.25	1.05	01/14/2022 16:20	WG1801583

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.740		0.0167	0.200	1	01/10/2022 19:32	WG1798206

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.48		0.130	1.50	1	01/19/2022 12:55	WG1803585

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	0.0699	J	0.0217	0.100	1	01/06/2022 01:55	WG1798735
(S) a,a,a-Trifluorotoluene(FID)	102			77.0-120		01/06/2022 01:55	WG1798735

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	01/06/2022 06:54	WG1798721
Toluene	U		0.00130	0.00500	1	01/06/2022 06:54	WG1798721
Ethylbenzene	U		0.000737	0.00250	1	01/06/2022 06:54	WG1798721
Xylenes, Total	0.00102	<u>J</u>	0.000880	0.00650	1	01/06/2022 06:54	WG1798721
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	01/06/2022 06:54	WG1798721
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	01/06/2022 06:54	WG1798721
(S) Toluene-d8	106			75.0-131		01/06/2022 06:54	WG1798721
(S) 4-Bromofluorobenzene	96.9			67.0-138		01/06/2022 06:54	WG1798721
(S) 1,2-Dichloroethane-d4	98.4			70.0-130		01/06/2022 06:54	WG1798721

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	4.24		1.61	4.00	1	01/10/2022 14:19	WG1799433
C28-C36 Motor Oil Range	16.3		0.274	4.00	1	01/10/2022 14:19	WG1799433
(S) o-Terphenyl	52.7			18.0-148		01/10/2022 14:19	WG1799433

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	01/10/2022 15:31	WG1798918
Acenaphthene	U		0.00209	0.00600	1	01/10/2022 15:31	WG1798918
Acenaphthylene	U		0.00216	0.00600	1	01/10/2022 15:31	WG1798918
Benzo(a)anthracene	U		0.00173	0.00600	1	01/10/2022 15:31	WG1798918
Benzo(a)pyrene	U		0.00179	0.00600	1	01/10/2022 15:31	WG1798918
Benzo(b)fluoranthene	U		0.00153	0.00600	1	01/10/2022 15:31	WG1798918
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	01/10/2022 15:31	WG1798918
Benzo(k)fluoranthene	U		0.00215	0.00600	1	01/10/2022 15:31	WG1798918
Chrysene	U		0.00232	0.00600	1	01/10/2022 15:31	WG1798918
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	01/10/2022 15:31	WG1798918
Fluoranthene	U		0.00227	0.00600	1	01/10/2022 15:31	WG1798918
Fluorene	U		0.00205	0.00600	1	01/10/2022 15:31	WG1798918
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	01/10/2022 15:31	WG1798918
Naphthalene	U		0.00408	0.0200	1	01/10/2022 15:31	WG1798918
Phenanthrene	U		0.00231	0.00600	1	01/10/2022 15:31	WG1798918
Pyrene	U		0.00200	0.00600	1	01/10/2022 15:31	WG1798918
1-Methylnaphthalene	U		0.00449	0.0200	1	01/10/2022 15:31	WG1798918
2-Methylnaphthalene	U		0.00427	0.0200	1	01/10/2022 15:31	WG1798918
2-Chloronaphthalene	U		0.00466	0.0200	1	01/10/2022 15:31	WG1798918
(S) p-Terphenyl-d14	109			23.0-120		01/10/2022 15:31	WG1798918
(S) Nitrobenzene-d5	78.5			14.0-149		01/10/2022 15:31	WG1798918
(S) 2-Fluorobiphenyl	90.3			34.0-125		01/10/2022 15:31	WG1798918

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.965		1	01/20/2022 00:30	WG1799368

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.07	T8	1	01/09/2022 12:00	WG1798775

Sample Narrative:

L1448180-04 WG1798775: 8.07 at 20.2C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	391		10.0	1	01/10/2022 06:55	WG1799561

Sample Narrative:

L1448180-04 WG1799561: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
Arsenic	4.53		0.130	1.50	1	01/19/2022 13:02	WG1803585

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.922		1	01/19/2022 23:24	WG1799368

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.23	T8	1	01/09/2022 12:00	WG1798775

Sample Narrative:

L1448180-05 WG1798775: 8.23 at 19.9C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
Specific Conductance	410		10.0	1	01/10/2022 06:55	WG1799561

Sample Narrative:

L1448180-05 WG1799561: at 25C

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
	mg/kg		mg/kg	mg/kg			
Arsenic	4.57		0.130	1.50	1	01/19/2022 13:54	WG1803585

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3749169-1 01/11/22 18:05

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

L1445383-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1445383-12 01/11/22 19:51 • (DUP) R3749169-7 01/11/22 19:56

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	2.08	2.00	1	3.87		20

L1448180-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1448180-03 01/11/22 20:12 • (DUP) R3749169-8 01/11/22 20:17

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	0.336	U	1	200	P1	20

Laboratory Control Sample (LCS)

(LCS) R3749169-2 01/11/22 18:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.0	100	80.0-120	

L1442269-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1442269-01 01/11/22 18:17 • (MS) R3749169-3 01/11/22 18:23 • (MSD) R3749169-4 01/11/22 18:28

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	20.0	U	7.16	0.385	35.8	1.92	1	75.0-125	J6	J3 J6	180	20

L1442269-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1442269-01 01/11/22 18:17 • (MS) R3749169-5 01/11/22 18:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	658	U	633	96.1	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1448180-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1448180-01 01/09/22 12:00 • (DUP) R3748227-2 01/09/22 12:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.72	7.75	1	0.388		1

Sample Narrative:

OS: 7.72 at 20.2C

DUP: 7.75 at 20.1C

Laboratory Control Sample (LCS)

(LCS) R3748227-1 01/09/22 12:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	9.99	99.9	99.0-101	

Sample Narrative:

LCS: 9.99 at 19.2C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3748323-1 01/10/22 06:55

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

L1448180-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1448180-05 01/10/22 06:55 • (DUP) R3748323-3 01/10/22 06:55

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	410	397	1	3.22		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3748323-2 01/10/22 06:55

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	266	99.4	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) R3750150-4 01/14/22 14:28

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0780	1.00
Cadmium	U		0.0460	0.500
Copper	U		0.276	1.00
Lead	U		0.105	0.500
Nickel	U		0.0760	0.500
Selenium	U		0.362	1.00
Silver	U		0.0256	0.250
Zinc	0.552	J	0.391	5.00

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

Laboratory Control Sample (LCS)

(LCS) R3750150-5 01/14/22 14:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	50.0	49.7	99.3	80.0-120	
Cadmium	50.0	47.1	94.1	80.0-120	
Copper	50.0	50.4	101	80.0-120	
Lead	50.0	49.2	98.4	80.0-120	
Nickel	50.0	48.9	97.7	80.0-120	
Selenium	50.0	45.8	91.5	80.0-120	
Silver	25.0	23.1	92.4	80.0-120	
Zinc	50.0	50.1	100	80.0-120	

7
Gl

8
Al

9
Sc

L1448180-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1448180-01 01/14/22 14:36 • (MS) R3750150-6 01/14/22 14:41 • (MSD) R3750150-7 01/14/22 15:43

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	50.0	258	299	296	81.5	75.2	1.02	10.0-200			1.06	20
Cadmium	50.0	0.274	45.2	43.9	89.9	87.2	1.02	37.0-120			2.99	20
Copper	50.0	13.3	59.3	58.3	92.0	90.0	1.02	47.0-130			1.72	20
Lead	50.0	9.90	47.9	47.0	76.0	74.2	1.02	17.0-138			1.88	20
Nickel	50.0	14.0	52.8	51.4	77.6	74.8	1.02	40.0-123			2.66	20
Selenium	50.0	0.951	42.4	41.8	83.0	81.7	1.02	29.0-112			1.55	20
Silver	25.0	U	23.5	22.9	93.9	91.8	1.02	35.0-129			2.31	20
Zinc	50.0	47.1	91.6	86.5	89.1	78.9	1.02	10.0-177			5.70	20

Method Blank (MB)

(MB) R3748726-1 01/10/22 18:24

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) R3748726-2 01/10/22 18:26 • (LCSD) R3748726-3 01/10/22 18:29

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	1.04	1.05	104	105	80.0-120			0.630	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3751483-1 01/19/22 12:12

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.130	1.50

Laboratory Control Sample (LCS)

(LCS) R3751483-2 01/19/22 12:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	50.0	50.0	100	80.0-120	

L1448180-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1448180-01 01/19/22 12:26 • (MS) R3751483-3 01/19/22 12:33 • (MSD) R3751483-4 01/19/22 12:40

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 %
Arsenic	50.0	5.05	56.2	55.7	102	101	1	75.0-125			0.923	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3748302-2 01/05/22 20:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	109			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3748302-1 01/05/22 20:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.54	82.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			97.2	77.0-120	

L1448148-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1448148-01 01/05/22 21:56 • (MS) R3748302-3 01/06/22 02:16 • (MSD) R3748302-4 01/06/22 02:38

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	U	4.56	3.87	82.9	70.4	1	10.0-151			16.4	28
(S) a,a,a-Trifluorotoluene(FID)					92.9	95.8		77.0-120				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3748045-3 01/06/22 00:33

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	0.000600	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	103			75.0-131
(S) 4-Bromofluorobenzene	97.4			67.0-138
(S) 1,2-Dichloroethane-d4	103			70.0-130

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

(LCS) R3748045-1 01/05/22 22:46 • (LCSD) R3748045-2 01/05/22 23:05

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	0.131	0.122	105	97.6	70.0-123			7.11	20
Ethylbenzene	0.125	0.137	0.122	110	97.6	74.0-126			11.6	20
Toluene	0.125	0.133	0.122	106	97.6	75.0-121			8.63	20
1,2,4-Trimethylbenzene	0.125	0.134	0.127	107	102	70.0-126			5.36	20
1,3,5-Trimethylbenzene	0.125	0.133	0.122	106	97.6	73.0-127			8.63	20
Xylenes, Total	0.375	0.401	0.372	107	99.2	72.0-127			7.50	20
(S) Toluene-d8				103	104	75.0-131				
(S) 4-Bromofluorobenzene				99.4	101	67.0-138				
(S) 1,2-Dichloroethane-d4				106	107	70.0-130				

L1448002-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1448002-01 01/06/22 00:52 • (MS) R3748045-4 01/06/22 07:13 • (MSD) R3748045-5 01/06/22 07:32

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.104	U	0.108	0.115	104	111	1	10.0-149			6.28	37
Ethylbenzene	0.104	0.00164	0.120	0.122	114	116	1	10.0-160			1.65	38
Toluene	0.104	U	0.118	0.120	113	115	1	10.0-156			1.68	38
1,2,4-Trimethylbenzene	0.104	0.00278	0.116	0.127	109	119	1	10.0-160			9.05	36
1,3,5-Trimethylbenzene	0.104	U	0.115	0.123	111	118	1	10.0-160			6.72	38
Xylenes, Total	0.312	U	0.342	0.351	110	113	1	10.0-160			2.60	38
(S) Toluene-d8					106	103		75.0-131				
(S) 4-Bromofluorobenzene					96.5	95.5		67.0-138				
(S) 1,2-Dichloroethane-d4					91.9	96.6		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3748613-1 01/10/22 12:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C36 Motor Oil Range	1.13	⬇	0.274	4.00
(S) o-Terphenyl	73.6			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3748613-2 01/10/22 13:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	39.9	79.8	50.0-150	
(S) o-Terphenyl			93.7	18.0-148	

L1448189-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1448189-01 01/10/22 14:32 • (MS) R3748613-3 01/10/22 14:46 • (MSD) R3748613-4 01/10/22 14:59

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 %
C10-C28 Diesel Range	48.5	U	31.2	33.4	64.3	69.2	1	50.0-150			6.81	20
(S) o-Terphenyl					78.2	77.6		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3748464-2 01/10/22 10:36

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	84.5			14.0-149
(S) 2-Fluorobiphenyl	96.5			34.0-125
(S) p-Terphenyl-d14	122	J1		23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3748464-1 01/10/22 10:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0665	83.1	50.0-126	
Acenaphthene	0.0800	0.0719	89.9	50.0-120	
Acenaphthylene	0.0800	0.0698	87.3	50.0-120	
Benzo(a)anthracene	0.0800	0.0635	79.4	45.0-120	
Benzo(a)pyrene	0.0800	0.0617	77.1	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0722	90.3	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0713	89.1	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0685	85.6	49.0-125	
Chrysene	0.0800	0.0711	88.9	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0631	78.9	47.0-125	
Fluoranthene	0.0800	0.0668	83.5	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3748464-1 01/10/22 10:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0680	85.0	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0701	87.6	46.0-125	
Naphthalene	0.0800	0.0686	85.8	50.0-120	
Phenanthrene	0.0800	0.0691	86.4	47.0-120	
Pyrene	0.0800	0.0839	105	43.0-123	
1-Methylnaphthalene	0.0800	0.0721	90.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0730	91.3	50.0-120	
2-Chloronaphthalene	0.0800	0.0679	84.9	50.0-120	
(S) Nitrobenzene-d5			89.7	14.0-149	
(S) 2-Fluorobiphenyl			103	34.0-125	
(S) p-Terphenyl-d14			117	23.0-120	

L1448152-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1448152-01 01/10/22 12:20 • (MS) R3748464-3 01/10/22 12:38 • (MSD) R3748464-4 01/10/22 12:55

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 %
Anthracene	0.0780	U	0.0588	0.0591	75.4	76.6	1	10.0-145			0.509	30
Acenaphthene	0.0780	U	0.0638	0.0644	81.8	83.4	1	14.0-127			0.936	27
Acenaphthylene	0.0780	U	0.0617	0.0621	79.1	80.4	1	21.0-124			0.646	25
Benzo(a)anthracene	0.0780	U	0.0556	0.0553	71.3	71.6	1	10.0-139			0.541	30
Benzo(a)pyrene	0.0780	U	0.0660	0.0666	84.6	86.3	1	10.0-141			0.905	31
Benzo(b)fluoranthene	0.0780	U	0.0615	0.0626	78.8	81.1	1	10.0-140			1.77	36
Benzo(g,h,i)perylene	0.0780	U	0.0641	0.0649	82.2	84.1	1	10.0-140			1.24	33
Benzo(k)fluoranthene	0.0780	U	0.0618	0.0631	79.2	81.7	1	10.0-137			2.08	31
Chrysene	0.0780	U	0.0645	0.0640	82.7	82.9	1	10.0-145			0.778	30
Dibenz(a,h)anthracene	0.0780	U	0.0554	0.0563	71.0	72.9	1	10.0-132			1.61	31
Fluoranthene	0.0780	U	0.0599	0.0600	76.8	77.7	1	10.0-153			0.167	33
Fluorene	0.0780	U	0.0610	0.0614	78.2	79.5	1	11.0-130			0.654	29
Indeno(1,2,3-cd)pyrene	0.0780	U	0.0619	0.0628	79.4	81.3	1	10.0-137			1.44	32
Naphthalene	0.0780	U	0.0617	0.0612	78.8	78.9	1	10.0-135			0.814	27
Phenanthrene	0.0780	U	0.0612	0.0616	78.5	79.8	1	10.0-144			0.651	31
Pyrene	0.0780	U	0.0754	0.0754	96.7	97.7	1	10.0-148			0.000	35
1-Methylnaphthalene	0.0780	U	0.0650	0.0644	83.1	83.2	1	10.0-142			0.927	28
2-Methylnaphthalene	0.0780	U	0.0659	0.0651	84.2	84.0	1	10.0-137			1.22	28
2-Chloronaphthalene	0.0780	U	0.0606	0.0609	77.6	78.8	1	29.0-120			0.494	24
(S) Nitrobenzene-d5					84.1	81.4		14.0-149				
(S) 2-Fluorobiphenyl					97.2	96.3		34.0-125				
(S) p-Terphenyl-d14					113	110		23.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

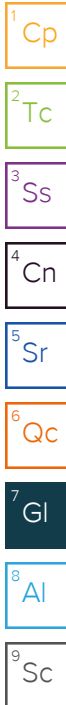
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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.
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		

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Arkansas	88-0647	Kansas	E10388
Florida	E871118	Texas	T104704232-20-32
Iowa	408	Oklahoma	8727
Louisiana	30686		

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.

