

Entrada Consulting Group

Sample Delivery Group: L1523076

Samples Received: 08/09/2022

Project Number: HSC 3

Description: HSC 3

Report To: Matt Kasten
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Entire Report Reviewed By:



Chris Ward
Project Manager

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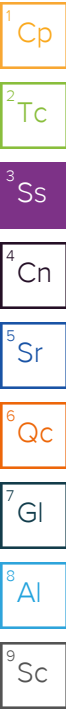


SAMPLE SUMMARY

20220808-HSC 3-WELLHEAD WN WALL 7-8' L1523076-01 Solid

Collected by Jax Nourse
Collected date/time 08/08/22 10:20
Received date/time 08/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1909015	1	08/18/22 13:20	08/18/22 13:20	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1915449	1	08/26/22 11:09	08/28/22 15:06	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1909201	1	08/11/22 14:55	08/11/22 17:00	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1912531	1	08/19/22 08:48	08/21/22 15:47	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1909166	1	08/12/22 17:14	08/17/22 00:19	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1908824	1	08/11/22 09:30	08/17/22 09:04	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1910801	5	08/15/22 08:40	08/16/22 14:13	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1908366	1	08/09/22 16:54	08/12/22 13:49	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1908704	1	08/09/22 16:54	08/10/22 16:55	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1908691	1	08/11/22 00:49	08/11/22 10:32	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1908340	1	08/10/22 08:52	08/10/22 20:13	CCW	Mt. Juliet, TN



20220808-HSC 3-TANK 6-10" L1523076-02 Solid

Collected by Jax Nourse
Collected date/time 08/08/22 10:30
Received date/time 08/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1909015	1	08/18/22 13:23	08/18/22 13:23	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1915449	1	08/26/22 11:09	08/28/22 15:13	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1909201	1	08/11/22 14:55	08/11/22 17:00	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1912531	1	08/19/22 08:48	08/21/22 15:47	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1909166	1	08/12/22 17:14	08/17/22 00:22	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1908824	1	08/11/22 09:30	08/17/22 09:07	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1910801	5	08/15/22 08:40	08/16/22 14:17	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1908366	1	08/09/22 16:54	08/12/22 14:36	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1908845	1	08/09/22 16:54	08/11/22 00:21	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1908691	1	08/11/22 00:49	08/11/22 12:56	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1908340	1	08/10/22 08:52	08/10/22 20:31	CCW	Mt. Juliet, TN

20220808-HSC 3-SEPARATOR 6-10" L1523076-03 Solid

Collected by Jax Nourse
Collected date/time 08/08/22 10:45
Received date/time 08/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1909015	1	08/18/22 13:26	08/18/22 13:26	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1911533	1	08/16/22 14:46	08/18/22 08:07	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1909201	1	08/11/22 14:55	08/11/22 17:00	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1916228	1	08/25/22 09:08	08/28/22 17:00	JD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1909166	1	08/12/22 17:14	08/17/22 00:30	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1908824	1	08/11/22 09:30	08/17/22 09:10	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1910801	5	08/15/22 08:40	08/16/22 14:20	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1908366	1	08/09/22 16:54	08/12/22 14:59	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1908845	1	08/09/22 16:54	08/11/22 00:41	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1908691	1	08/11/22 00:49	08/11/22 13:09	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1908340	1	08/10/22 08:52	08/10/22 20:49	CCW	Mt. Juliet, TN

20220808-HSC 3-METER 6-10" L1523076-04 Solid

Collected by Jax Nourse
Collected date/time 08/08/22 11:00
Received date/time 08/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1909015	1	08/18/22 13:29	08/18/22 13:29	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1911533	1	08/16/22 14:46	08/18/22 08:15	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1909201	1	08/11/22 14:55	08/11/22 17:00	RLS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1916228	1	08/25/22 09:08	08/28/22 17:00	JD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1909166	1	08/12/22 17:14	08/17/22 00:33	ZSA	Mt. Juliet, TN

SAMPLE SUMMARY

20220808-HSC 3-METER 6-10" L1523076-04 Solid

Collected by
Jax Nourse

Collected date/time
08/08/22 11:00

Received date/time
08/09/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1908824	1	08/11/22 09:30	08/17/22 09:13	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1910801	5	08/15/22 08:40	08/16/22 13:27	SJM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1908366	1	08/09/22 16:54	08/12/22 15:22	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1909230	1	08/09/22 16:54	08/11/22 19:05	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1908691	1	08/11/22 00:49	08/11/22 10:58	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1908340	1	08/10/22 08:52	08/10/22 21:07	CCW	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



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.51		1	08/18/2022 13:20	WG1909015

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	08/28/2022 15:06	WG1915449

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.66	T8	1	08/11/2022 17:00	WG1909201

Sample Narrative:

L1523076-01 WG1909201: 7.66 at 24.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2880		10.0	1	08/21/2022 15:47	WG1912531

Sample Narrative:

L1523076-01 WG1912531: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	239		0.0852	0.500	1	08/17/2022 00:19	WG1909166
Cadmium	0.228	J	0.0471	0.500	1	08/17/2022 00:19	WG1909166
Copper	10.8		0.400	2.00	1	08/17/2022 00:19	WG1909166
Lead	10.2		0.208	0.500	1	08/17/2022 00:19	WG1909166
Nickel	9.91		0.132	2.00	1	08/17/2022 00:19	WG1909166
Selenium	U		0.764	2.00	1	08/17/2022 00:19	WG1909166
Silver	U		0.127	1.00	1	08/17/2022 00:19	WG1909166
Zinc	41.7		0.832	5.00	1	08/17/2022 00:19	WG1909166

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	0.400		0.0167	0.200	1	08/17/2022 09:04	WG1908824

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.33		0.100	1.00	5	08/16/2022 14:13	WG1910801

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	0.141		0.0217	0.100	1	08/12/2022 13:49	WG1908366
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	106			77.0-120		08/12/2022 13:49	WG1908366

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	08/10/2022 16:55	WG1908704
Toluene	U		0.00130	0.00500	1	08/10/2022 16:55	WG1908704
Ethylbenzene	U		0.000737	0.00250	1	08/10/2022 16:55	WG1908704
Xylenes, Total	U		0.000880	0.00650	1	08/10/2022 16:55	WG1908704
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/10/2022 16:55	WG1908704
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/10/2022 16:55	WG1908704
(S) Toluene-d8	97.9			75.0-131		08/10/2022 16:55	WG1908704
(S) 4-Bromofluorobenzene	111			67.0-138		08/10/2022 16:55	WG1908704
(S) 1,2-Dichloroethane-d4	106			70.0-130		08/10/2022 16:55	WG1908704

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	08/11/2022 10:32	WG1908691
C28-C36 Motor Oil Range	0.951	J	0.274	4.00	1	08/11/2022 10:32	WG1908691
(S) o-Terphenyl	58.3			18.0-148		08/11/2022 10:32	WG1908691

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/10/2022 20:13	WG1908340
Anthracene	U		0.00230	0.00600	1	08/10/2022 20:13	WG1908340
Benzo(a)anthracene	U		0.00173	0.00600	1	08/10/2022 20:13	WG1908340
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/10/2022 20:13	WG1908340
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/10/2022 20:13	WG1908340
Benzo(a)pyrene	U		0.00179	0.00600	1	08/10/2022 20:13	WG1908340
Chrysene	U		0.00232	0.00600	1	08/10/2022 20:13	WG1908340
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/10/2022 20:13	WG1908340
Fluoranthene	U		0.00227	0.00600	1	08/10/2022 20:13	WG1908340
Fluorene	U		0.00205	0.00600	1	08/10/2022 20:13	WG1908340
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/10/2022 20:13	WG1908340
1-Methylnaphthalene	U		0.00449	0.0200	1	08/10/2022 20:13	WG1908340
2-Methylnaphthalene	U		0.00427	0.0200	1	08/10/2022 20:13	WG1908340
Naphthalene	U		0.00408	0.0200	1	08/10/2022 20:13	WG1908340
Pyrene	U		0.00200	0.00600	1	08/10/2022 20:13	WG1908340
(S) p-Terphenyl-d14	62.4			23.0-120		08/10/2022 20:13	WG1908340
(S) Nitrobenzene-d5	78.4			14.0-149		08/10/2022 20:13	WG1908340
(S) 2-Fluorobiphenyl	73.2			34.0-125		08/10/2022 20:13	WG1908340

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	3.32		1	08/18/2022 13:23	WG1909015

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	08/28/2022 15:13	WG1915449

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.16	T8	1	08/11/2022 17:00	WG1909201

Sample Narrative:

L1523076-02 WG1909201: 8.16 at 24.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	852		10.0	1	08/21/2022 15:47	WG1912531

Sample Narrative:

L1523076-02 WG1912531: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	145		0.0852	0.500	1	08/17/2022 00:22	WG1909166
Cadmium	0.145	J	0.0471	0.500	1	08/17/2022 00:22	WG1909166
Copper	8.85		0.400	2.00	1	08/17/2022 00:22	WG1909166
Lead	8.97		0.208	0.500	1	08/17/2022 00:22	WG1909166
Nickel	7.64		0.132	2.00	1	08/17/2022 00:22	WG1909166
Selenium	U		0.764	2.00	1	08/17/2022 00:22	WG1909166
Silver	U		0.127	1.00	1	08/17/2022 00:22	WG1909166
Zinc	35.3		0.832	5.00	1	08/17/2022 00:22	WG1909166

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	0.296		0.0167	0.200	1	08/17/2022 09:07	WG1908824

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.42		0.100	1.00	5	08/16/2022 14:17	WG1910801

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	0.0584	J	0.0217	0.100	1	08/12/2022 14:36	WG1908366
(S) a,a,a-Trifluorotoluene(FID)	106			77.0-120		08/12/2022 14:36	WG1908366

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	08/11/2022 00:21	WG1908845
Toluene	U		0.00130	0.00500	1	08/11/2022 00:21	WG1908845
Ethylbenzene	U		0.000737	0.00250	1	08/11/2022 00:21	WG1908845
Xylenes, Total	U		0.000880	0.00650	1	08/11/2022 00:21	WG1908845
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/11/2022 00:21	WG1908845
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/11/2022 00:21	WG1908845
(S) Toluene-d8	99.7			75.0-131		08/11/2022 00:21	WG1908845
(S) 4-Bromofluorobenzene	98.0			67.0-138		08/11/2022 00:21	WG1908845
(S) 1,2-Dichloroethane-d4	101			70.0-130		08/11/2022 00:21	WG1908845

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	4.07		1.61	4.00	1	08/11/2022 12:56	WG1908691
C28-C36 Motor Oil Range	11.7		0.274	4.00	1	08/11/2022 12:56	WG1908691
(S) o-Terphenyl	58.2			18.0-148		08/11/2022 12:56	WG1908691

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/10/2022 20:31	WG1908340
Anthracene	U		0.00230	0.00600	1	08/10/2022 20:31	WG1908340
Benzo(a)anthracene	U		0.00173	0.00600	1	08/10/2022 20:31	WG1908340
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/10/2022 20:31	WG1908340
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/10/2022 20:31	WG1908340
Benzo(a)pyrene	U		0.00179	0.00600	1	08/10/2022 20:31	WG1908340
Chrysene	U		0.00232	0.00600	1	08/10/2022 20:31	WG1908340
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/10/2022 20:31	WG1908340
Fluoranthene	U		0.00227	0.00600	1	08/10/2022 20:31	WG1908340
Fluorene	U		0.00205	0.00600	1	08/10/2022 20:31	WG1908340
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/10/2022 20:31	WG1908340
1-Methylnaphthalene	U		0.00449	0.0200	1	08/10/2022 20:31	WG1908340
2-Methylnaphthalene	U		0.00427	0.0200	1	08/10/2022 20:31	WG1908340
Naphthalene	U		0.00408	0.0200	1	08/10/2022 20:31	WG1908340
Pyrene	U		0.00200	0.00600	1	08/10/2022 20:31	WG1908340
(S) p-Terphenyl-d14	78.9			23.0-120		08/10/2022 20:31	WG1908340
(S) Nitrobenzene-d5	80.7			14.0-149		08/10/2022 20:31	WG1908340
(S) 2-Fluorobiphenyl	73.7			34.0-125		08/10/2022 20:31	WG1908340

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	6.82		1	08/18/2022 13:26	WG1909015

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	08/18/2022 08:07	WG1911533

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.52	T8	1	08/11/2022 17:00	WG1909201

Sample Narrative:

L1523076-03 WG1909201: 8.52 at 24.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	642		10.0	1	08/28/2022 17:00	WG1916228

Sample Narrative:

L1523076-03 WG1916228: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	149		0.0852	0.500	1	08/17/2022 00:30	WG1909166
Cadmium	0.137	J	0.0471	0.500	1	08/17/2022 00:30	WG1909166
Copper	7.52		0.400	2.00	1	08/17/2022 00:30	WG1909166
Lead	8.67		0.208	0.500	1	08/17/2022 00:30	WG1909166
Nickel	6.59		0.132	2.00	1	08/17/2022 00:30	WG1909166
Selenium	U		0.764	2.00	1	08/17/2022 00:30	WG1909166
Silver	U		0.127	1.00	1	08/17/2022 00:30	WG1909166
Zinc	26.1		0.832	5.00	1	08/17/2022 00:30	WG1909166

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	0.360		0.0167	0.200	1	08/17/2022 09:10	WG1908824

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.02		0.100	1.00	5	08/16/2022 14:20	WG1910801

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	0.0361	J	0.0217	0.100	1	08/12/2022 14:59	WG1908366
(S) a,a,a-Trifluorotoluene(FID)	106			77.0-120		08/12/2022 14:59	WG1908366

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	08/11/2022 00:41	WG1908845
Toluene	U		0.00130	0.00500	1	08/11/2022 00:41	WG1908845
Ethylbenzene	U		0.000737	0.00250	1	08/11/2022 00:41	WG1908845
Xylenes, Total	U		0.000880	0.00650	1	08/11/2022 00:41	WG1908845
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/11/2022 00:41	WG1908845
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/11/2022 00:41	WG1908845
(S) Toluene-d8	100			75.0-131		08/11/2022 00:41	WG1908845
(S) 4-Bromofluorobenzene	99.3			67.0-138		08/11/2022 00:41	WG1908845
(S) 1,2-Dichloroethane-d4	97.1			70.0-130		08/11/2022 00:41	WG1908845

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	17.6		1.61	4.00	1	08/11/2022 13:09	WG1908691
C28-C36 Motor Oil Range	25.7		0.274	4.00	1	08/11/2022 13:09	WG1908691
(S) o-Terphenyl	46.7			18.0-148		08/11/2022 13:09	WG1908691

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/10/2022 20:49	WG1908340
Anthracene	U		0.00230	0.00600	1	08/10/2022 20:49	WG1908340
Benzo(a)anthracene	U		0.00173	0.00600	1	08/10/2022 20:49	WG1908340
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/10/2022 20:49	WG1908340
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/10/2022 20:49	WG1908340
Benzo(a)pyrene	U		0.00179	0.00600	1	08/10/2022 20:49	WG1908340
Chrysene	U		0.00232	0.00600	1	08/10/2022 20:49	WG1908340
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/10/2022 20:49	WG1908340
Fluoranthene	U		0.00227	0.00600	1	08/10/2022 20:49	WG1908340
Fluorene	U		0.00205	0.00600	1	08/10/2022 20:49	WG1908340
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/10/2022 20:49	WG1908340
1-Methylnaphthalene	U		0.00449	0.0200	1	08/10/2022 20:49	WG1908340
2-Methylnaphthalene	U		0.00427	0.0200	1	08/10/2022 20:49	WG1908340
Naphthalene	U		0.00408	0.0200	1	08/10/2022 20:49	WG1908340
Pyrene	0.00246	U	0.00200	0.00600	1	08/10/2022 20:49	WG1908340
(S) p-Terphenyl-d14	78.6			23.0-120		08/10/2022 20:49	WG1908340
(S) Nitrobenzene-d5	78.2			14.0-149		08/10/2022 20:49	WG1908340
(S) 2-Fluorobiphenyl	74.3			34.0-125		08/10/2022 20:49	WG1908340

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	0.520		1	08/18/2022 13:29	WG1909015

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	08/18/2022 08:15	WG1911533

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.40	T8	1	08/11/2022 17:00	WG1909201

Sample Narrative:

L1523076-04 WG1909201: 8.4 at 23.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	231		10.0	1	08/28/2022 17:00	WG1916228

Sample Narrative:

L1523076-04 WG1916228: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	151		0.0852	0.500	1	08/17/2022 00:33	WG1909166
Cadmium	0.127	J	0.0471	0.500	1	08/17/2022 00:33	WG1909166
Copper	8.04		0.400	2.00	1	08/17/2022 00:33	WG1909166
Lead	9.23		0.208	0.500	1	08/17/2022 00:33	WG1909166
Nickel	7.80		0.132	2.00	1	08/17/2022 00:33	WG1909166
Selenium	U		0.764	2.00	1	08/17/2022 00:33	WG1909166
Silver	U		0.127	1.00	1	08/17/2022 00:33	WG1909166
Zinc	27.6		0.832	5.00	1	08/17/2022 00:33	WG1909166

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

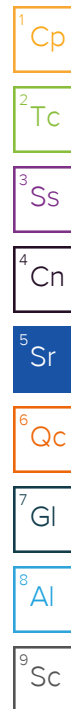
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.488		0.0167	0.200	1	08/17/2022 09:13	WG1908824

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.96		0.100	1.00	5	08/16/2022 13:27	WG1910801

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	0.0648	J	0.0217	0.100	1	08/12/2022 15:22	WG1908366
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	106			77.0-120		08/12/2022 15:22	WG1908366



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	08/11/2022 19:05	WG1909230
Toluene	U		0.00130	0.00500	1	08/11/2022 19:05	WG1909230
Ethylbenzene	U		0.000737	0.00250	1	08/11/2022 19:05	WG1909230
Xylenes, Total	U		0.000880	0.00650	1	08/11/2022 19:05	WG1909230
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	08/11/2022 19:05	WG1909230
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	08/11/2022 19:05	WG1909230
(S) Toluene-d8	103			75.0-131		08/11/2022 19:05	WG1909230
(S) 4-Bromofluorobenzene	98.9			67.0-138		08/11/2022 19:05	WG1909230
(S) 1,2-Dichloroethane-d4	92.6			70.0-130		08/11/2022 19:05	WG1909230

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	08/11/2022 10:58	WG1908691
C28-C36 Motor Oil Range	U		0.274	4.00	1	08/11/2022 10:58	WG1908691
(S) o-Terphenyl	37.4			18.0-148		08/11/2022 10:58	WG1908691

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.00209	0.00600	1	08/10/2022 21:07	WG1908340
Anthracene	U		0.00230	0.00600	1	08/10/2022 21:07	WG1908340
Benzo(a)anthracene	U		0.00173	0.00600	1	08/10/2022 21:07	WG1908340
Benzo(b)fluoranthene	U		0.00153	0.00600	1	08/10/2022 21:07	WG1908340
Benzo(k)fluoranthene	U		0.00215	0.00600	1	08/10/2022 21:07	WG1908340
Benzo(a)pyrene	U		0.00179	0.00600	1	08/10/2022 21:07	WG1908340
Chrysene	U		0.00232	0.00600	1	08/10/2022 21:07	WG1908340
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	08/10/2022 21:07	WG1908340
Fluoranthene	U		0.00227	0.00600	1	08/10/2022 21:07	WG1908340
Fluorene	U		0.00205	0.00600	1	08/10/2022 21:07	WG1908340
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	08/10/2022 21:07	WG1908340
1-Methylnaphthalene	U		0.00449	0.0200	1	08/10/2022 21:07	WG1908340
2-Methylnaphthalene	U		0.00427	0.0200	1	08/10/2022 21:07	WG1908340
Naphthalene	U		0.00408	0.0200	1	08/10/2022 21:07	WG1908340
Pyrene	U		0.00200	0.00600	1	08/10/2022 21:07	WG1908340
(S) p-Terphenyl-d14	64.6			23.0-120		08/10/2022 21:07	WG1908340
(S) Nitrobenzene-d5	77.7			14.0-149		08/10/2022 21:07	WG1908340
(S) 2-Fluorobiphenyl	71.4			34.0-125		08/10/2022 21:07	WG1908340

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3834971-1 08/28/22 14:54

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

L1523076-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1523076-02 08/28/22 15:13 • (DUP) R3834971-3 08/28/22 15:19

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

L1524229-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1524229-04 08/28/22 16:36 • (DUP) R3834971-4 08/28/22 16:42

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

Laboratory Control Sample (LCS)

(LCS) R3834971-2 08/28/22 14:59

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	9.88	98.8	80.0-120	

L1524229-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1524229-07 08/28/22 17:08 • (MS) R3834971-5 08/28/22 17:13 • (MSD) R3834971-6 08/28/22 17:18

	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	16.0	16.8	80.1	83.8	1	75.0-125			4.55	20

L1524229-07 Original Sample (OS) • Matrix Spike (MS)

(OS) L1524229-07 08/28/22 17:08 • (MS) R3834971-8 08/28/22 17:28

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	638	U	758	119	50	75.0-125	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1523536-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1523536-03 08/11/22 17:00 • (DUP) R3825369-3 08/11/22 17:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.04	8.07	1	0.372		1

Sample Narrative:

OS: 8.04 at 23.6C

DUP: 8.07 at 23.4C

Laboratory Control Sample (LCS)

(LCS) R3825369-1 08/11/22 17:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	9.90	99.0	99.0-101	

Sample Narrative:

LCS: 9.9 at 23.7C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3828663-1 08/21/22 15:47

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

L1522343-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1522343-04 08/21/22 15:47 • (DUP) R3828663-3 08/21/22 15:47

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	7910	7830	1	1.02		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1522629-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1522629-01 08/21/22 15:47 • (DUP) R3828663-4 08/21/22 15:47

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	359	358	1	0.279		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3828663-2 08/21/22 15:47

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	286	284	99.1	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) R3831259-1 08/28/22 17:00

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

Sample Narrative:
BLANK: at 25C

L1523076-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1523076-04 08/28/22 17:00 • (DUP) R3831259-4 08/28/22 17:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	231	220	1	4.48		20

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

L1523267-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1523267-05 08/28/22 17:00 • (DUP) R3831259-5 08/28/22 17:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1490	1400	1	6.51		20

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

Laboratory Control Sample (LCS)

(LCS) R3831259-3 08/28/22 17:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1120	99.6	85.0-115	

Sample Narrative:
LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3827090-1 08/16/22 23:24

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) R3827090-2 08/16/22 23:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	96.3	96.3	80.0-120	
Cadmium	100	91.6	91.6	80.0-120	
Copper	100	92.6	92.6	80.0-120	
Lead	100	92.3	92.3	80.0-120	
Nickel	100	93.1	93.1	80.0-120	
Selenium	100	91.8	91.8	80.0-120	
Silver	20.0	18.2	91.0	80.0-120	
Zinc	100	90.2	90.2	80.0-120	

L1522244-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1522244-06 08/16/22 23:29 • (MS) R3827090-5 08/16/22 23:38 • (MSD) R3827090-6 08/16/22 23:40

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 %
Barium	100	188	354	280	167	92.8	1	75.0-125	J5	J3	23.2	20
Cadmium	100	0.236	88.1	105	87.9	105	1	75.0-125			17.3	20
Copper	100	15.4	109	126	93.1	111	1	75.0-125			15.2	20
Lead	100	12.1	102	119	90.3	107	1	75.0-125			14.7	20
Nickel	100	21.5	119	128	97.1	106	1	75.0-125			7.55	20
Selenium	100	U	87.1	105	87.1	105	1	75.0-125			18.7	20
Silver	20.0	U	17.3	20.9	86.7	104	1	75.0-125			18.4	20
Zinc	100	63.9	167	191	103	127	1	75.0-125		J5	13.4	20

Method Blank (MB)

(MB) R3827265-1 08/17/22 08:56

Analyte	MB Result mg/l	<u>MB Qualifier</u>	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) R3827265-2 08/17/22 08:59 • (LCSD) R3827265-3 08/17/22 09:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	0.978	0.991	97.8	99.1	80.0-120			1.36	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3826761-1 08/16/22 11:55

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

Laboratory Control Sample (LCS)

(LCS) R3826761-2 08/16/22 11:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	96.9	96.9	80.0-120	

L1523185-15 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1523185-15 08/16/22 12:02 • (MS) R3826761-5 08/16/22 12:12 • (MSD) R3826761-6 08/16/22 12:15

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 %
Arsenic	100	3.22	84.2	86.0	81.0	82.7	5	75.0-125			2.03	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3826324-2 08/12/22 09:24

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)	106			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3826324-1 08/12/22 08:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.16	112	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			108	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3825115-1 08/10/22 10:24

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	98.0			75.0-131
(S) 4-Bromofluorobenzene	104			67.0-138
(S) 1,2-Dichloroethane-d4	89.6			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3825115-2 08/10/22 11:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.123	98.4	70.0-123	
Toluene	0.125	0.106	84.8	75.0-121	
Ethylbenzene	0.125	0.115	92.0	74.0-126	
Xylenes, Total	0.375	0.346	92.3	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.105	84.0	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.101	80.8	73.0-127	
(S) Toluene-d8			93.5	75.0-131	
(S) 4-Bromofluorobenzene			112	67.0-138	
(S) 1,2-Dichloroethane-d4			113	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3825645-3 08/10/22 23:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	102			75.0-131
(S) 4-Bromofluorobenzene	97.6			67.0-138
(S) 1,2-Dichloroethane-d4	98.3			70.0-130

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

(LCS) R3825645-1 08/10/22 22:05 • (LCSD) R3825645-2 08/10/22 22:24

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	0.120	0.109	96.0	87.2	70.0-123			9.61	20
Toluene	0.125	0.116	0.109	92.8	87.2	75.0-121			6.22	20
Ethylbenzene	0.125	0.111	0.102	88.8	81.6	74.0-126			8.45	20
Xylenes, Total	0.375	0.332	0.286	88.5	76.3	72.0-127			14.9	20
1,2,4-Trimethylbenzene	0.125	0.119	0.114	95.2	91.2	70.0-126			4.29	20
1,3,5-Trimethylbenzene	0.125	0.123	0.117	98.4	93.6	73.0-127			5.00	20
(S) Toluene-d8				98.0	99.4	75.0-131				
(S) 4-Bromofluorobenzene				95.6	96.8	67.0-138				
(S) 1,2-Dichloroethane-d4				110	109	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3825669-3 08/11/22 11:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	102			75.0-131
(S) 4-Bromofluorobenzene	97.1			67.0-138
(S) 1,2-Dichloroethane-d4	98.8			70.0-130

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

(LCS) R3825669-1 08/11/22 10:15 • (LCSD) R3825669-2 08/11/22 10:35

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	0.120	0.124	96.0	99.2	70.0-123			3.28	20
Toluene	0.125	0.118	0.118	94.4	94.4	75.0-121			0.000	20
Ethylbenzene	0.125	0.110	0.115	88.0	92.0	74.0-126			4.44	20
Xylenes, Total	0.375	0.306	0.338	81.6	90.1	72.0-127			9.94	20
1,2,4-Trimethylbenzene	0.125	0.128	0.124	102	99.2	70.0-126			3.17	20
1,3,5-Trimethylbenzene	0.125	0.131	0.131	105	105	73.0-127			0.000	20
(S) Toluene-d8				99.6	97.1	75.0-131				
(S) 4-Bromofluorobenzene				97.1	92.2	67.0-138				
(S) 1,2-Dichloroethane-d4				110	110	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3825345-1 08/11/22 10:06

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	73.6			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3825345-2 08/11/22 10:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	35.8	71.6	50.0-150	
(S) o-Terphenyl			84.1	18.0-148	

L1523084-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1523084-11 08/11/22 14:42 • (MS) R3825345-3 08/11/22 14:55 • (MSD) R3825345-4 08/11/22 15:08

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 %
C10-C28 Diesel Range	50.0	3.14	41.0	36.1	75.7	65.9	1	50.0-150			12.7	20
(S) o-Terphenyl					67.7	58.7		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3825302-2 08/10/22 19:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	90.9			23.0-120
(S) Nitrobenzene-d5	82.0			14.0-149
(S) 2-Fluorobiphenyl	81.7			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3825302-1 08/10/22 19:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0689	86.1	50.0-120	
Anthracene	0.0800	0.0690	86.3	50.0-126	
Benzo(a)anthracene	0.0800	0.0677	84.6	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0696	87.0	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0691	86.4	49.0-125	
Benzo(a)pyrene	0.0800	0.0700	87.5	42.0-120	
Chrysene	0.0800	0.0690	86.3	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0730	91.3	47.0-125	
Fluoranthene	0.0800	0.0719	89.9	49.0-129	
Fluorene	0.0800	0.0717	89.6	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0708	88.5	46.0-125	
1-Methylnaphthalene	0.0800	0.0660	82.5	51.0-121	
2-Methylnaphthalene	0.0800	0.0733	91.6	50.0-120	
Naphthalene	0.0800	0.0708	88.5	50.0-120	
Pyrene	0.0800	0.0734	91.8	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3825302-1 08/10/22 19:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
(S) p-Terphenyl-d14			93.9	23.0-120	
(S) Nitrobenzene-d5			92.3	14.0-149	
(S) 2-Fluorobiphenyl			91.2	34.0-125	

L1523195-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1523195-12 08/11/22 00:57 • (MS) R3825302-3 08/11/22 01:15 • (MSD) R3825302-4 08/11/22 01:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0764	U	0.0629	0.0575	82.3	74.5	1	14.0-127			8.97	27
Anthracene	0.0764	U	0.0601	0.0554	78.7	71.8	1	10.0-145			8.14	30
Benzo(a)anthracene	0.0764	U	0.0570	0.0487	74.6	63.1	1	10.0-139			15.7	30
Benzo(b)fluoranthene	0.0764	U	0.0569	0.0505	74.5	65.4	1	10.0-140			11.9	36
Benzo(k)fluoranthene	0.0764	U	0.0592	0.0518	77.5	67.1	1	10.0-137			13.3	31
Benzo(a)pyrene	0.0764	U	0.0651	0.0570	85.2	73.8	1	10.0-141			13.3	31
Chrysene	0.0764	U	0.0627	0.0539	82.1	69.8	1	10.0-145			15.1	30
Dibenz(a,h)anthracene	0.0764	U	0.0629	0.0554	82.3	71.8	1	10.0-132			12.7	31
Fluoranthene	0.0764	U	0.0639	0.0562	83.6	72.8	1	10.0-153			12.8	33
Fluorene	0.0764	U	0.0627	0.0566	82.1	73.3	1	11.0-130			10.2	29
Indeno(1,2,3-cd)pyrene	0.0764	U	0.0588	0.0530	77.0	68.7	1	10.0-137			10.4	32
1-Methylnaphthalene	0.0764	U	0.0594	0.0575	77.7	74.5	1	10.0-142			3.25	28
2-Methylnaphthalene	0.0764	U	0.0612	0.0568	80.1	73.6	1	10.0-137			7.46	28
Naphthalene	0.0764	U	0.0583	0.0572	76.3	74.1	1	10.0-135			1.90	27
Pyrene	0.0764	U	0.0690	0.0620	90.3	80.3	1	10.0-148			10.7	35
(S) p-Terphenyl-d14					85.2	72.8		23.0-120				
(S) Nitrobenzene-d5					80.8	80.2		14.0-149				
(S) 2-Fluorobiphenyl					80.9	76.8		34.0-125				

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.

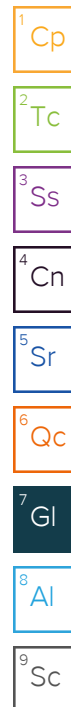
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

