

November 11, 2020

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Caerus Oil and Gas

Sample Delivery Group: L1279933
Samples Received: 10/30/2020
Project Number:
Description: N23 Spill

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

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

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



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



20201029-N23-POR-0-6"-925 L1279933-01 Solid

Collected by
Chance Holder

Collected date/time
10/29/20 09:25

Received date/time
10/30/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1569151	1	11/03/20 00:35	11/03/20 00:35	CCE	Mt. Juliet, TN
Calculated Results	WG1568880	1	11/01/20 15:38	11/04/20 13:17	KEG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1568956	1	11/03/20 16:04	11/04/20 13:17	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1570416	1	11/04/20 22:22	11/05/20 01:58	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1570826	1	11/04/20 11:41	11/04/20 15:00	SRG	Mt. Juliet, TN
Mercury by Method 7471A	WG1569466	1	11/02/20 08:06	11/02/20 11:59	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1568880	5	11/01/20 15:38	11/03/20 21:39	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1568883	5	11/01/20 15:49	11/03/20 14:48	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1572210	2500	11/03/20 09:18	11/07/20 03:01	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1570972	20	11/03/20 09:18	11/05/20 01:43	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1573565	200	11/03/20 09:18	11/10/20 00:56	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1569679	10	11/02/20 16:55	11/03/20 02:55	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1570246	1	11/04/20 10:57	11/04/20 19:08	AAT	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1570246	20	11/04/20 10:57	11/05/20 18:12	LEA	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

20201029-N23-MID-0-6"-935 L1279933-02 Solid

Collected by
Chance Holder

Collected date/time
10/29/20 09:35

Received date/time
10/30/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1569151	1	11/03/20 00:38	11/03/20 00:38	CCE	Mt. Juliet, TN
Calculated Results	WG1568880	1	11/01/20 15:38	11/04/20 13:18	KEG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1568956	1	11/03/20 16:04	11/04/20 13:18	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1570416	1	11/04/20 22:22	11/05/20 01:58	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1570826	1	11/04/20 11:41	11/04/20 15:00	SRG	Mt. Juliet, TN
Mercury by Method 7471A	WG1569466	1	11/02/20 08:06	11/02/20 12:06	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1568880	1	11/01/20 15:38	11/03/20 08:48	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1568883	5	11/01/20 15:49	11/03/20 15:27	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1572210	25	11/03/20 09:18	11/07/20 01:54	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1570972	1	11/03/20 09:18	11/05/20 00:07	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1569965	10	11/03/20 08:41	11/04/20 11:39	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1570246	1	11/04/20 10:57	11/04/20 19:31	AAT	Mt. Juliet, TN

20201029-N23-SE-0-6"-940 L1279933-03 Solid

Collected by
Chance Holder

Collected date/time
10/29/20 09:40

Received date/time
10/30/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1569151	1	11/03/20 00:41	11/03/20 00:41	CCE	Mt. Juliet, TN
Calculated Results	WG1568880	1	11/01/20 15:38	11/04/20 13:20	KEG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1568956	1	11/03/20 16:04	11/04/20 13:20	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1570416	1	11/04/20 22:22	11/05/20 01:58	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1570826	1	11/04/20 11:41	11/04/20 15:00	SRG	Mt. Juliet, TN
Mercury by Method 7471A	WG1569464	1	11/02/20 10:17	11/03/20 08:24	BMF	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1568880	1	11/01/20 15:38	11/03/20 08:51	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1568883	5	11/01/20 15:49	11/03/20 15:31	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1572210	1	11/03/20 09:18	11/07/20 02:16	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1570972	1	11/03/20 09:18	11/05/20 00:26	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1570242	1	11/03/20 16:36	11/04/20 01:40	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1570246	1	11/04/20 10:57	11/04/20 19:54	AAT	Mt. Juliet, TN

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



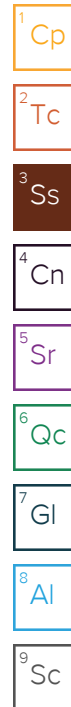
20201029-N23-SW-0-6"-945 L1279933-04 Solid

Collected by
Chance Holder

Collected date/time
10/29/20 09:45

Received date/time
10/30/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1569151	1	11/03/20 00:44	11/03/20 00:44	CCE	Mt. Juliet, TN
Calculated Results	WG1568880	1	11/01/20 15:38	11/04/20 13:31	KEG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1568956	1	11/03/20 16:04	11/04/20 13:31	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1570416	1	11/04/20 22:22	11/05/20 01:58	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1570826	1	11/04/20 11:41	11/04/20 15:00	SRG	Mt. Juliet, TN
Mercury by Method 7471A	WG1569466	1	11/02/20 08:06	11/02/20 12:09	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1568880	1	11/01/20 15:38	11/03/20 08:53	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1568883	5	11/01/20 15:49	11/03/20 15:34	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1571107	100	11/03/20 09:18	11/05/20 18:05	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1570972	8	11/03/20 09:18	11/05/20 01:05	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1570242	1	11/03/20 16:36	11/04/20 01:53	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1570246	1	11/04/20 10:57	11/04/20 20:17	AAT	Mt. Juliet, TN



20201029-N23-NE-0-6"-955 L1279933-05 Solid

Collected by
Chance Holder

Collected date/time
10/29/20 09:55

Received date/time
10/30/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1569151	1	11/03/20 00:46	11/03/20 00:46	CCE	Mt. Juliet, TN
Calculated Results	WG1568880	1	11/01/20 15:38	11/04/20 13:31	KEG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1568956	1	11/03/20 16:04	11/04/20 13:31	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1570416	1	11/04/20 22:22	11/05/20 01:58	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1570826	1	11/04/20 11:41	11/04/20 15:00	SRG	Mt. Juliet, TN
Mercury by Method 7471A	WG1569466	1	11/02/20 08:06	11/02/20 12:11	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1568880	1	11/01/20 15:38	11/03/20 08:56	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1568883	5	11/01/20 15:49	11/03/20 15:38	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1571524	25	11/03/20 09:18	11/06/20 01:20	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1570972	1	11/03/20 09:18	11/05/20 00:45	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1570242	5	11/03/20 16:36	11/04/20 02:31	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1570246	1	11/04/20 10:57	11/04/20 20:40	AAT	Mt. Juliet, TN

20201029-N23-SWDITCH-0-6"-1005 L1279933-06 Solid

Collected by
Chance Holder

Collected date/time
10/29/20 10:05

Received date/time
10/30/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1569151	1	11/03/20 00:49	11/03/20 00:49	CCE	Mt. Juliet, TN
Calculated Results	WG1568880	1	11/01/20 15:38	11/04/20 13:32	KEG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1568956	1	11/03/20 16:04	11/04/20 13:32	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1570416	1	11/04/20 22:22	11/05/20 01:58	WOS	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1570826	1	11/04/20 11:41	11/04/20 15:00	SRG	Mt. Juliet, TN
Mercury by Method 7471A	WG1569466	1	11/02/20 08:06	11/02/20 12:14	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1568880	1	11/01/20 15:38	11/03/20 08:59	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1568883	5	11/01/20 15:49	11/03/20 15:41	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1572514	100	11/06/20 16:57	11/07/20 00:46	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1570972	8	11/03/20 09:18	11/05/20 01:24	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1570242	1	11/03/20 16:36	11/04/20 01:15	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1570246	1	11/04/20 10:57	11/04/20 21:03	AAT	Mt. Juliet, TN



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

Chris Ward
Project Manager

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	36.0		1	11/03/2020 00:35	WG1569151

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	28.2		1.00	1	11/04/2020 13:17	WG1568880

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	11/04/2020 13:17	WG1568956

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.31	T8	1	11/05/2020 01:58	WG1570416

Sample Narrative:

L1279933-01 WG1570416: 8.31 at 20C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3790		10.0	1	11/04/2020 15:00	WG1570826

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.148		0.0400	1	11/02/2020 11:59	WG1569466

Metals (ICP) by Method 6010B

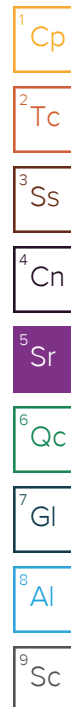
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	642		2.50	5	11/03/2020 21:39	WG1568880
Cadmium	ND		2.50	5	11/03/2020 21:39	WG1568880
Chromium	29.8		5.00	5	11/03/2020 21:39	WG1568880
Copper	26.1		10.0	5	11/03/2020 21:39	WG1568880
Lead	12.4		2.50	5	11/03/2020 21:39	WG1568880
Nickel	18.3		10.0	5	11/03/2020 21:39	WG1568880
Selenium	ND		10.0	5	11/03/2020 21:39	WG1568880
Silver	ND		5.00	5	11/03/2020 21:39	WG1568880
Zinc	62.3		25.0	5	11/03/2020 21:39	WG1568880

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	45.8	J6	1.00	5	11/03/2020 14:48	WG1568883

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	3950		250	2500	11/07/2020 03:01	WG1572210





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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	96.9		77.0-120		11/07/2020 03:01	WG1572210

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.113		0.0200	20	11/05/2020 01:43	WG1570972
Toluene	16.0		0.100	20	11/05/2020 01:43	WG1570972
Ethylbenzene	8.60		0.0500	20	11/05/2020 01:43	WG1570972
Total Xylenes	265		1.30	200	11/10/2020 00:56	WG1573565
(S) Toluene-d8	98.3		75.0-131		11/05/2020 01:43	WG1570972
(S) Toluene-d8	98.6		75.0-131		11/10/2020 00:56	WG1573565
(S) 4-Bromofluorobenzene	143	J1	67.0-138		11/05/2020 01:43	WG1570972
(S) 4-Bromofluorobenzene	106		67.0-138		11/10/2020 00:56	WG1573565
(S) 1,2-Dichloroethane-d4	101		70.0-130		11/05/2020 01:43	WG1570972
(S) 1,2-Dichloroethane-d4	110		70.0-130		11/10/2020 00:56	WG1573565

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	783		40.0	10	11/03/2020 02:55	WG1569679
(S) o-Terphenyl	0.000	J2	18.0-148		11/03/2020 02:55	WG1569679

Sample Narrative:

L1279933-01 WG1569679: Surrogate failure due to matrix interference

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	11/04/2020 19:08	WG1570246
Acenaphthene	0.0442		0.00600	1	11/04/2020 19:08	WG1570246
Acenaphthylene	ND		0.00600	1	11/04/2020 19:08	WG1570246
Benzo(a)anthracene	ND		0.00600	1	11/04/2020 19:08	WG1570246
Benzo(a)pyrene	ND		0.00600	1	11/04/2020 19:08	WG1570246
Benzo(b)fluoranthene	0.00657		0.00600	1	11/04/2020 19:08	WG1570246
Benzo(g,h,i)perylene	ND		0.00600	1	11/04/2020 19:08	WG1570246
Benzo(k)fluoranthene	ND		0.00600	1	11/04/2020 19:08	WG1570246
Chrysene	ND		0.00600	1	11/04/2020 19:08	WG1570246
Dibenz(a,h)anthracene	ND		0.00600	1	11/04/2020 19:08	WG1570246
Fluoranthene	ND		0.00600	1	11/04/2020 19:08	WG1570246
Fluorene	0.142		0.00600	1	11/04/2020 19:08	WG1570246
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	11/04/2020 19:08	WG1570246
Naphthalene	2.75		0.400	20	11/05/2020 18:12	WG1570246
Phenanthrene	0.0892		0.00600	1	11/04/2020 19:08	WG1570246
Pyrene	0.0154		0.00600	1	11/04/2020 19:08	WG1570246
1-Methylnaphthalene	1.70		0.400	20	11/05/2020 18:12	WG1570246
2-Methylnaphthalene	5.10		0.400	20	11/05/2020 18:12	WG1570246
2-Chloronaphthalene	ND		0.0200	1	11/04/2020 19:08	WG1570246
(S) p-Terphenyl-d14	76.9	J7	23.0-120		11/05/2020 18:12	WG1570246
(S) p-Terphenyl-d14	72.2		23.0-120		11/04/2020 19:08	WG1570246
(S) Nitrobenzene-d5	0.000	J2	14.0-149		11/04/2020 19:08	WG1570246
(S) Nitrobenzene-d5	1570	J7	14.0-149		11/05/2020 18:12	WG1570246
(S) 2-Fluorobiphenyl	87.6	J7	34.0-125		11/05/2020 18:12	WG1570246
(S) 2-Fluorobiphenyl	92.9		34.0-125		11/04/2020 19:08	WG1570246

Sample Narrative:



Collected date/time: 10/29/20 09:25

L1279933

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
L1279933-01 WG1570246: Surrogate failure due to matrix interference						

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



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	7.23		1	11/03/2020 00:38	WG1569151

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	29.2		1.00	1	11/04/2020 13:18	WG1568880

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	11/04/2020 13:18	WG1568956

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.22	T8	1	11/05/2020 01:58	WG1570416

Sample Narrative:

L1279933-02 WG1570416: 8.22 at 20.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2020		10.0	1	11/04/2020 15:00	WG1570826

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	11/02/2020 12:06	WG1569466

Metals (ICP) by Method 6010B

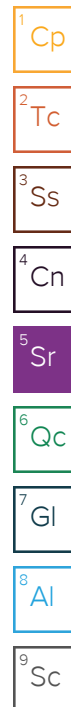
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	251		0.500	1	11/03/2020 08:48	WG1568880
Cadmium	ND		0.500	1	11/03/2020 08:48	WG1568880
Chromium	29.2		1.00	1	11/03/2020 08:48	WG1568880
Copper	17.6		2.00	1	11/03/2020 08:48	WG1568880
Lead	10.7		0.500	1	11/03/2020 08:48	WG1568880
Nickel	21.6		2.00	1	11/03/2020 08:48	WG1568880
Selenium	ND		2.00	1	11/03/2020 08:48	WG1568880
Silver	ND		1.00	1	11/03/2020 08:48	WG1568880
Zinc	50.9		5.00	1	11/03/2020 08:48	WG1568880

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.39		1.00	5	11/03/2020 15:27	WG1568883

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	119		2.50	25	11/07/2020 01:54	WG1572210





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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	96.0		77.0-120		11/07/2020 01:54	WG1572210

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00218		0.00100	1	11/05/2020 00:07	WG1570972
Toluene	0.0803		0.00500	1	11/05/2020 00:07	WG1570972
Ethylbenzene	0.0506		0.00250	1	11/05/2020 00:07	WG1570972
Total Xylenes	1.31		0.00650	1	11/05/2020 00:07	WG1570972
(S) Toluene-d8	105		75.0-131		11/05/2020 00:07	WG1570972
(S) 4-Bromofluorobenzene	109		67.0-138		11/05/2020 00:07	WG1570972
(S) 1,2-Dichloroethane-d4	101		70.0-130		11/05/2020 00:07	WG1570972

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	461		40.0	10	11/04/2020 11:39	WG1569965
(S) o-Terphenyl	87.8		18.0-148		11/04/2020 11:39	WG1569965

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	11/04/2020 19:31	WG1570246
Acenaphthene	0.0221		0.00600	1	11/04/2020 19:31	WG1570246
Acenaphthylene	ND		0.00600	1	11/04/2020 19:31	WG1570246
Benzo(a)anthracene	ND		0.00600	1	11/04/2020 19:31	WG1570246
Benzo(a)pyrene	ND		0.00600	1	11/04/2020 19:31	WG1570246
Benzo(b)fluoranthene	ND		0.00600	1	11/04/2020 19:31	WG1570246
Benzo(g,h,i)perylene	ND		0.00600	1	11/04/2020 19:31	WG1570246
Benzo(k)fluoranthene	ND		0.00600	1	11/04/2020 19:31	WG1570246
Chrysene	ND		0.00600	1	11/04/2020 19:31	WG1570246
Dibenz(a,h)anthracene	ND		0.00600	1	11/04/2020 19:31	WG1570246
Fluoranthene	ND		0.00600	1	11/04/2020 19:31	WG1570246
Fluorene	0.0419		0.00600	1	11/04/2020 19:31	WG1570246
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	11/04/2020 19:31	WG1570246
Naphthalene	0.404		0.0200	1	11/04/2020 19:31	WG1570246
Phenanthrene	0.0510		0.00600	1	11/04/2020 19:31	WG1570246
Pyrene	0.0284		0.00600	1	11/04/2020 19:31	WG1570246
1-Methylnaphthalene	0.412		0.0200	1	11/04/2020 19:31	WG1570246
2-Methylnaphthalene	0.809		0.0200	1	11/04/2020 19:31	WG1570246
2-Chloronaphthalene	ND		0.0200	1	11/04/2020 19:31	WG1570246
(S) p-Terphenyl-d14	79.8		23.0-120		11/04/2020 19:31	WG1570246
(S) Nitrobenzene-d5	0.000	J2	14.0-149		11/04/2020 19:31	WG1570246
(S) 2-Fluorobiphenyl	73.5		34.0-125		11/04/2020 19:31	WG1570246

Sample Narrative:

L1279933-02 WG1570246: Surrogate failure due to matrix interference



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.08		1	11/03/2020 00:41	WG1569151

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	36.5		1.00	1	11/04/2020 13:20	WG1568880

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	11/04/2020 13:20	WG1568956

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.97	T8	1	11/05/2020 01:58	WG1570416

Sample Narrative:

L1279933-03 WG1570416: 7.97 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2100		10.0	1	11/04/2020 15:00	WG1570826

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	11/03/2020 08:24	WG1569464

Metals (ICP) by Method 6010B

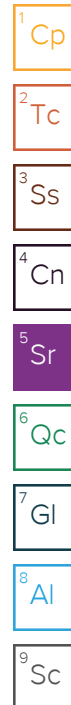
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	263		0.500	1	11/03/2020 08:51	WG1568880
Cadmium	ND		0.500	1	11/03/2020 08:51	WG1568880
Chromium	36.5		1.00	1	11/03/2020 08:51	WG1568880
Copper	23.0		2.00	1	11/03/2020 08:51	WG1568880
Lead	18.2		0.500	1	11/03/2020 08:51	WG1568880
Nickel	33.1		2.00	1	11/03/2020 08:51	WG1568880
Selenium	ND		2.00	1	11/03/2020 08:51	WG1568880
Silver	ND		1.00	1	11/03/2020 08:51	WG1568880
Zinc	66.2		5.00	1	11/03/2020 08:51	WG1568880

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	9.48		1.00	5	11/03/2020 15:31	WG1568883

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.665		0.100	1	11/07/2020 02:16	WG1572210





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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	93.4		77.0-120		11/07/2020 02:16	WG1572210

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00147		0.00100	1	11/05/2020 00:26	WG1570972
Toluene	0.0129		0.00500	1	11/05/2020 00:26	WG1570972
Ethylbenzene	0.00347		0.00250	1	11/05/2020 00:26	WG1570972
Total Xylenes	0.0854		0.00650	1	11/05/2020 00:26	WG1570972
(S) Toluene-d8	110		75.0-131		11/05/2020 00:26	WG1570972
(S) 4-Bromofluorobenzene	104		67.0-138		11/05/2020 00:26	WG1570972
(S) 1,2-Dichloroethane-d4	93.7		70.0-130		11/05/2020 00:26	WG1570972

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	17.2		4.00	1	11/04/2020 01:40	WG1570242
(S) o-Terphenyl	32.8		18.0-148		11/04/2020 01:40	WG1570242

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	11/04/2020 19:54	WG1570246
Acenaphthene	ND		0.00600	1	11/04/2020 19:54	WG1570246
Acenaphthylene	ND		0.00600	1	11/04/2020 19:54	WG1570246
Benzo(a)anthracene	ND		0.00600	1	11/04/2020 19:54	WG1570246
Benzo(a)pyrene	ND		0.00600	1	11/04/2020 19:54	WG1570246
Benzo(b)fluoranthene	ND		0.00600	1	11/04/2020 19:54	WG1570246
Benzo(g,h,i)perylene	ND		0.00600	1	11/04/2020 19:54	WG1570246
Benzo(k)fluoranthene	ND		0.00600	1	11/04/2020 19:54	WG1570246
Chrysene	ND		0.00600	1	11/04/2020 19:54	WG1570246
Dibenz(a,h)anthracene	ND		0.00600	1	11/04/2020 19:54	WG1570246
Fluoranthene	ND		0.00600	1	11/04/2020 19:54	WG1570246
Fluorene	ND		0.00600	1	11/04/2020 19:54	WG1570246
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	11/04/2020 19:54	WG1570246
Naphthalene	0.0547		0.0200	1	11/04/2020 19:54	WG1570246
Phenanthrene	0.0115		0.00600	1	11/04/2020 19:54	WG1570246
Pyrene	ND		0.00600	1	11/04/2020 19:54	WG1570246
1-Methylnaphthalene	0.0724		0.0200	1	11/04/2020 19:54	WG1570246
2-Methylnaphthalene	0.204		0.0200	1	11/04/2020 19:54	WG1570246
2-Chloronaphthalene	ND		0.0200	1	11/04/2020 19:54	WG1570246
(S) p-Terphenyl-d14	76.9		23.0-120		11/04/2020 19:54	WG1570246
(S) Nitrobenzene-d5	113		14.0-149		11/04/2020 19:54	WG1570246
(S) 2-Fluorobiphenyl	78.6		34.0-125		11/04/2020 19:54	WG1570246



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	11.9		1	11/03/2020 00:44	WG1569151

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	19.9		1.00	1	11/04/2020 13:31	WG1568880

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	11/04/2020 13:31	WG1568956

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.36	T8	1	11/05/2020 01:58	WG1570416

Sample Narrative:

L1279933-04 WG1570416: 8.36 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3480		10.0	1	11/04/2020 15:00	WG1570826

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	11/02/2020 12:09	WG1569466

Metals (ICP) by Method 6010B

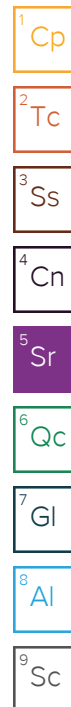
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	268		0.500	1	11/03/2020 08:53	WG1568880
Cadmium	ND		0.500	1	11/03/2020 08:53	WG1568880
Chromium	19.9		1.00	1	11/03/2020 08:53	WG1568880
Copper	13.4		2.00	1	11/03/2020 08:53	WG1568880
Lead	9.74		0.500	1	11/03/2020 08:53	WG1568880
Nickel	15.5		2.00	1	11/03/2020 08:53	WG1568880
Selenium	ND		2.00	1	11/03/2020 08:53	WG1568880
Silver	ND		1.00	1	11/03/2020 08:53	WG1568880
Zinc	42.9		5.00	1	11/03/2020 08:53	WG1568880

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.56		1.00	5	11/03/2020 15:34	WG1568883

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	226		10.0	100	11/05/2020 18:05	WG1571107





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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	102		77.0-120		11/05/2020 18:05	WG1571107

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.0714		0.00800	8	11/05/2020 01:05	WG1570972
Toluene	0.483		0.0400	8	11/05/2020 01:05	WG1570972
Ethylbenzene	0.122		0.0200	8	11/05/2020 01:05	WG1570972
Total Xylenes	2.24		0.0520	8	11/05/2020 01:05	WG1570972
(S) Toluene-d8	104		75.0-131		11/05/2020 01:05	WG1570972
(S) 4-Bromofluorobenzene	103		67.0-138		11/05/2020 01:05	WG1570972
(S) 1,2-Dichloroethane-d4	103		70.0-130		11/05/2020 01:05	WG1570972

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	26.5		4.00	1	11/04/2020 01:53	WG1570242
(S) o-Terphenyl	31.7		18.0-148		11/04/2020 01:53	WG1570242

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Acenaphthene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Acenaphthylene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Benzo(a)anthracene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Benzo(a)pyrene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Benzo(b)fluoranthene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Benzo(g,h,i)perylene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Benzo(k)fluoranthene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Chrysene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Dibenz(a,h)anthracene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Fluoranthene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Fluorene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Naphthalene	0.0520		0.0200	1	11/04/2020 20:17	WG1570246
Phenanthrene	ND		0.00600	1	11/04/2020 20:17	WG1570246
Pyrene	ND		0.00600	1	11/04/2020 20:17	WG1570246
1-Methylnaphthalene	0.0402		0.0200	1	11/04/2020 20:17	WG1570246
2-Methylnaphthalene	0.118		0.0200	1	11/04/2020 20:17	WG1570246
2-Chloronaphthalene	ND		0.0200	1	11/04/2020 20:17	WG1570246
(S) p-Terphenyl-d14	52.4		23.0-120		11/04/2020 20:17	WG1570246
(S) Nitrobenzene-d5	84.8		14.0-149		11/04/2020 20:17	WG1570246
(S) 2-Fluorobiphenyl	57.5		34.0-125		11/04/2020 20:17	WG1570246



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.70		1	11/03/2020 00:46	WG1569151

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	10.2		1.00	1	11/04/2020 13:31	WG1568880

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	11/04/2020 13:31	WG1568956

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.14	T8	1	11/05/2020 01:58	WG1570416

Sample Narrative:

L1279933-05 WG1570416: 8.14 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	948		10.0	1	11/04/2020 15:00	WG1570826

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	11/02/2020 12:11	WG1569466

Metals (ICP) by Method 6010B

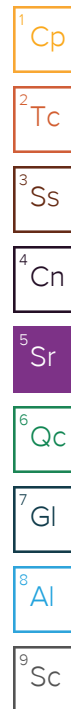
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	238		0.500	1	11/03/2020 08:56	WG1568880
Cadmium	ND		0.500	1	11/03/2020 08:56	WG1568880
Chromium	10.2		1.00	1	11/03/2020 08:56	WG1568880
Copper	15.5		2.00	1	11/03/2020 08:56	WG1568880
Lead	5.76		0.500	1	11/03/2020 08:56	WG1568880
Nickel	12.7		2.00	1	11/03/2020 08:56	WG1568880
Selenium	ND		2.00	1	11/03/2020 08:56	WG1568880
Silver	ND		1.00	1	11/03/2020 08:56	WG1568880
Zinc	31.2		5.00	1	11/03/2020 08:56	WG1568880

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.11		1.00	5	11/03/2020 15:38	WG1568883

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	35.6		2.50	25	11/06/2020 01:20	WG1571524





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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	97.7		77.0-120		11/06/2020 01:20	WG1571524

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00895		0.00100	1	11/05/2020 00:45	WG1570972
Toluene	0.158		0.00500	1	11/05/2020 00:45	WG1570972
Ethylbenzene	0.0326		0.00250	1	11/05/2020 00:45	WG1570972
Total Xylenes	0.643		0.00650	1	11/05/2020 00:45	WG1570972
(S) Toluene-d8	104		75.0-131		11/05/2020 00:45	WG1570972
(S) 4-Bromofluorobenzene	98.6		67.0-138		11/05/2020 00:45	WG1570972
(S) 1,2-Dichloroethane-d4	89.1		70.0-130		11/05/2020 00:45	WG1570972

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	334		20.0	5	11/04/2020 02:31	WG1570242
(S) o-Terphenyl	33.4		18.0-148		11/04/2020 02:31	WG1570242

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	11/04/2020 20:40	WG1570246
Acenaphthene	0.0154		0.00600	1	11/04/2020 20:40	WG1570246
Acenaphthylene	ND		0.00600	1	11/04/2020 20:40	WG1570246
Benzo(a)anthracene	ND		0.00600	1	11/04/2020 20:40	WG1570246
Benzo(a)pyrene	ND		0.00600	1	11/04/2020 20:40	WG1570246
Benzo(b)fluoranthene	ND		0.00600	1	11/04/2020 20:40	WG1570246
Benzo(g,h,i)perylene	ND		0.00600	1	11/04/2020 20:40	WG1570246
Benzo(k)fluoranthene	ND		0.00600	1	11/04/2020 20:40	WG1570246
Chrysene	ND		0.00600	1	11/04/2020 20:40	WG1570246
Dibenz(a,h)anthracene	ND		0.00600	1	11/04/2020 20:40	WG1570246
Fluoranthene	ND		0.00600	1	11/04/2020 20:40	WG1570246
Fluorene	0.0407		0.00600	1	11/04/2020 20:40	WG1570246
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	11/04/2020 20:40	WG1570246
Naphthalene	0.778		0.0200	1	11/04/2020 20:40	WG1570246
Phenanthrene	0.0315		0.00600	1	11/04/2020 20:40	WG1570246
Pyrene	ND		0.00600	1	11/04/2020 20:40	WG1570246
1-Methylnaphthalene	0.467		0.0200	1	11/04/2020 20:40	WG1570246
2-Methylnaphthalene	1.43		0.0200	1	11/04/2020 20:40	WG1570246
2-Chloronaphthalene	ND		0.0200	1	11/04/2020 20:40	WG1570246
(S) p-Terphenyl-d14	84.5		23.0-120		11/04/2020 20:40	WG1570246
(S) Nitrobenzene-d5	0.000	J2	14.0-149		11/04/2020 20:40	WG1570246
(S) 2-Fluorobiphenyl	75.9		34.0-125		11/04/2020 20:40	WG1570246

Sample Narrative:

L1279933-05 WG1570246: Surrogate failure due to matrix interference



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	18.7		1	11/03/2020 00:49	WG1569151

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	28.9		1.00	1	11/04/2020 13:32	WG1568880

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	11/04/2020 13:32	WG1568956

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.27	T8	1	11/05/2020 01:58	WG1570416

Sample Narrative:

L1279933-06 WG1570416: 8.27 at 20.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3840		10.0	1	11/04/2020 15:00	WG1570826

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0400	1	11/02/2020 12:14	WG1569466

Metals (ICP) by Method 6010B

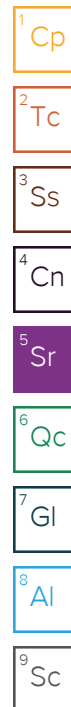
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	390		0.500	1	11/03/2020 08:59	WG1568880
Cadmium	ND		0.500	1	11/03/2020 08:59	WG1568880
Chromium	28.9		1.00	1	11/03/2020 08:59	WG1568880
Copper	23.6		2.00	1	11/03/2020 08:59	WG1568880
Lead	13.9		0.500	1	11/03/2020 08:59	WG1568880
Nickel	21.4		2.00	1	11/03/2020 08:59	WG1568880
Selenium	ND		2.00	1	11/03/2020 08:59	WG1568880
Silver	ND		1.00	1	11/03/2020 08:59	WG1568880
Zinc	50.7		5.00	1	11/03/2020 08:59	WG1568880

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.45		1.00	5	11/03/2020 15:41	WG1568883

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	263		10.0	100	11/07/2020 00:46	WG1572514





Collected date/time: 10/29/20 10:05

L1279933

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	97.4		77.0-120		11/07/2020 00:46	WG1572514

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.0452		0.00800	8	11/05/2020 01:24	WG1570972
Toluene	1.39		0.0400	8	11/05/2020 01:24	WG1570972
Ethylbenzene	0.900		0.0200	8	11/05/2020 01:24	WG1570972
Total Xylenes	19.6		0.0520	8	11/05/2020 01:24	WG1570972
(S) <i>Toluene-d8</i>	103		75.0-131		11/05/2020 01:24	WG1570972
(S) <i>4-Bromofluorobenzene</i>	73.9		67.0-138		11/05/2020 01:24	WG1570972
(S) <i>1,2-Dichloroethane-d4</i>	103		70.0-130		11/05/2020 01:24	WG1570972

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	153		4.00	1	11/04/2020 01:15	WG1570242
(S) <i>o</i> -Terphenyl	28.1		18.0-148		11/04/2020 01:15	WG1570242

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	11/04/2020 21:03	WG1570246
Acenaphthene	0.0105		0.00600	1	11/04/2020 21:03	WG1570246
Acenaphthylene	ND		0.00600	1	11/04/2020 21:03	WG1570246
Benzo(a)anthracene	ND		0.00600	1	11/04/2020 21:03	WG1570246
Benzo(a)pyrene	ND		0.00600	1	11/04/2020 21:03	WG1570246
Benzo(b)fluoranthene	ND		0.00600	1	11/04/2020 21:03	WG1570246
Benzo(g,h,i)perylene	ND		0.00600	1	11/04/2020 21:03	WG1570246
Benzo(k)fluoranthene	ND		0.00600	1	11/04/2020 21:03	WG1570246
Chrysene	ND		0.00600	1	11/04/2020 21:03	WG1570246
Dibenz(a,h)anthracene	ND		0.00600	1	11/04/2020 21:03	WG1570246
Fluoranthene	ND		0.00600	1	11/04/2020 21:03	WG1570246
Fluorene	0.0364		0.00600	1	11/04/2020 21:03	WG1570246
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	11/04/2020 21:03	WG1570246
Naphthalene	0.136		0.0200	1	11/04/2020 21:03	WG1570246
Phenanthrene	0.0377		0.00600	1	11/04/2020 21:03	WG1570246
Pyrene	ND		0.00600	1	11/04/2020 21:03	WG1570246
1-Methylnaphthalene	0.139		0.0200	1	11/04/2020 21:03	WG1570246
2-Methylnaphthalene	0.406		0.0200	1	11/04/2020 21:03	WG1570246
2-Chloronaphthalene	ND		0.0200	1	11/04/2020 21:03	WG1570246
(S) <i>p</i> -Terphenyl-d14	69.3		23.0-120		11/04/2020 21:03	WG1570246
(S) Nitrobenzene-d5	75.1		14.0-149		11/04/2020 21:03	WG1570246
(S) <i>2</i> -Fluorobiphenyl	66.1		34.0-125		11/04/2020 21:03	WG1570246



Method Blank (MB)

(MB) R3589271-1 11/04/20 13:14

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

L1279933-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1279933-02 11/04/20 13:18 • (DUP) R3589271-3 11/04/20 13:19

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

Laboratory Control Sample (LCS)

(LCS) R3589271-2 11/04/20 13:14

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	24.2	101	80.0-120	

L1279933-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1279933-03 11/04/20 13:20 • (MS) R3589271-4 11/04/20 13:21 • (MSD) R3589271-5 11/04/20 13:21

	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	%	%		%			%	%
Chromium,Hexavalent	20.0	ND	17.5	17.8	87.6	89.0	1	75.0-125			1.59	20

L1279933-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1279933-03 11/04/20 13:20 • (MS) R3589271-6 11/04/20 13:23

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	647	ND	650	100	50	75.0-125	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



L1276696-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1276696-03 11/05/20 01:58 • (DUP) R3589547-2 11/05/20 01:58

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.70	8.70	1	0.000		1

Sample Narrative:

OS: 8.7 at 20.6C

DUP: 8.7 at 20.5C



L1279933-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1279933-05 11/05/20 01:58 • (DUP) R3589547-3 11/05/20 01:58

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.14	8.18	1	0.490		1

Sample Narrative:

OS: 8.14 at 20.7C

DUP: 8.18 at 20.1C

Laboratory Control Sample (LCS)

(LCS) R3589547-1 11/05/20 01:58

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

Sample Narrative:

LCS: 9.98 at 18.9C

Method Blank (MB)

(MB) R3589345-1 11/04/20 15:00

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1279933-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1279933-02 11/04/20 15:00 • (DUP) R3589345-3 11/04/20 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	2020	2120	1	4.87		20

L1279944-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1279944-01 11/04/20 15:00 • (DUP) R3589345-4 11/04/20 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	4910	5410	1	9.69		20

Laboratory Control Sample (LCS)

(LCS) R3589345-2 11/04/20 15:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	umhos/cm	umhos/cm	%	%	
Specific Conductance	483	482	99.8	85.0-115	

Method Blank (MB)

(MB) R3588731-1 11/03/20 07:18				
	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3588731-2 11/03/20 07:20					
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	mg/kg	mg/kg	%	%	
Mercury	0.500	0.478	95.5	80.0-120	

L1279405-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1279405-01 11/03/20 07:23 • (MS) R3588731-3 11/03/20 07:25 • (MSD) R3588731-4 11/03/20 07:28												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.500	ND	0.527	0.515	98.6	96.1	1	75.0-125			2.43	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Method Blank (MB)

(MB) R3588352-1 11/02/20 11:10

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3588352-2 11/02/20 11:12

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Mercury	0.500	0.497	99.3	80.0-120	

L1280187-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1280187-02 11/02/20 11:15 • (MS) R3588352-3 11/02/20 11:18 • (MSD) R3588352-4 11/02/20 11:20

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.500	ND	0.465	0.483	93.0	96.6	1	75.0-125			3.89	20



Method Blank (MB)

(MB) R3589016-1 11/03/20 08:12

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
Chromium	U		0.133	1.00
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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3589016-2 11/03/20 08:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	93.1	93.1	80.0-120	
Cadmium	100	88.6	88.6	80.0-120	
Chromium	100	89.2	89.2	80.0-120	
Copper	100	92.1	92.1	80.0-120	
Lead	100	90.9	90.9	80.0-120	
Nickel	100	91.2	91.2	80.0-120	
Selenium	100	92.9	92.9	80.0-120	
Silver	20.0	16.6	83.2	80.0-120	
Zinc	100	89.3	89.3	80.0-120	

L1279933-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1279933-01 11/03/20 08:17 • (MS) R3589016-5 11/03/20 08:25 • (MSD) R3589016-6 11/03/20 08:28

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 %
Barium	100	615	465	739	0.000	124	1	75.0-125	V	J3	45.5	20
Cadmium	100	0.731	89.5	87.7	88.8	86.9	1	75.0-125			2.08	20
Chromium	100	28.2	116	106	87.9	77.5	1	75.0-125			9.37	20
Copper	100	25.9	111	103	85.1	77.5	1	75.0-125			7.09	20
Lead	100	12.2	102	98.1	89.5	85.9	1	75.0-125			3.63	20
Nickel	100	18.8	111	107	92.2	88.3	1	75.0-125			3.58	20
Selenium	100	ND	91.3	89.6	90.3	88.6	1	75.0-125			1.84	20
Silver	20.0	ND	16.3	16.0	81.5	79.9	1	75.0-125			1.93	20
Zinc	100	59.6	146	127	86.0	67.4	1	75.0-125		J6	13.6	20



Method Blank (MB)

(MB) R3588964-1 11/03/20 14:40

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3588964-2 11/03/20 14:44

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Arsenic	100	96.6	96.6	80.0-120	

L1279933-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1279933-01 11/03/20 14:48 • (MS) R3588964-5 11/03/20 15:00 • (MSD) R3588964-6 11/03/20 15:03

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Arsenic	20.0	45.8	96.8	92.8	51.0	47.0	5	75.0-125	J6	J6	4.21	20

Method Blank (MB)

(MB) R3590113-2 11/05/20 01:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0838	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	99.7			77.0-120

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R3590113-1 11/05/20 01:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.37	97.6	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			107	77.0-120	

Method Blank (MB)

(MB) R3590219-3 11/05/20 23:12

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0232	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	95.6			77.0-120

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

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

(LCS) R3590219-1 11/05/20 22:10 • (LCSD) R3590219-2 11/05/20 22:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.71	5.00	104	90.9	72.0-127			13.3	20
(S) a,a,a-Trifluorotoluene(FID)				104	102	77.0-120				



Method Blank (MB)

(MB) R3590441-2 11/06/20 21:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	99.3			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3590441-1 11/06/20 19:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.74	123	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			106	77.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3591062-2 11/06/20 23:16

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)	111			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3591062-1 11/06/20 22:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.68	85.1	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			95.3	77.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3590947-2 11/04/20 19:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	112			75.0-131
(S) 4-Bromofluorobenzene	102			67.0-138
(S) 1,2-Dichloroethane-d4	82.6			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3590947-1 11/04/20 19:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.109	87.2	70.0-123	
Ethylbenzene	0.125	0.133	106	74.0-126	
Toluene	0.125	0.114	91.2	75.0-121	
Xylenes, Total	0.375	0.380	101	72.0-127	
(S) Toluene-d8			105	75.0-131	
(S) 4-Bromofluorobenzene			104	67.0-138	
(S) 1,2-Dichloroethane-d4			86.9	70.0-130	

L1279933-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1279933-04 11/05/20 01:05 • (MS) R3590947-3 11/05/20 02:41 • (MSD) R3590947-4 11/05/20 03:00

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.00	0.0714	0.889	0.868	81.8	79.7	8	10.0-149			2.39	37
Ethylbenzene	1.00	0.122	1.09	1.01	96.8	88.8	8	10.0-160			7.62	38
Toluene	1.00	0.483	1.92	1.82	144	134	8	10.0-156			5.35	38
Xylenes, Total	3.00	2.24	7.02	6.85	159	154	8	10.0-160			2.45	38
(S) Toluene-d8					106	107		75.0-131				
(S) 4-Bromofluorobenzene					109	108		67.0-138				
(S) 1,2-Dichloroethane-d4					92.9	93.4		70.0-130				



Method Blank (MB)

(MB) R3591275-3 11/09/20 19:05

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	99.5			75.0-131
(S) 4-Bromofluorobenzene	103			67.0-138
(S) 1,2-Dichloroethane-d4	110			70.0-130

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

(LCS) R3591275-1 11/09/20 17:49 • (LCSD) R3591275-2 11/09/20 18:08

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 %
Xylenes, Total	0.375	0.349	0.380	93.1	101	72.0-127			8.50	20
(S) Toluene-d8				100	101	75.0-131				
(S) 4-Bromofluorobenzene				99.6	102	67.0-138				
(S) 1,2-Dichloroethane-d4				107	114	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3588593-1 11/02/20 22:30

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	61.7			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3588593-2 11/02/20 22:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	26.0	52.0	50.0-150	
(S) o-Terphenyl			62.9	18.0-148	

L1277667-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1277667-08 11/03/20 00:24 • (MS) R3588593-3 11/03/20 00:36 • (MSD) R3588593-4 11/03/20 00:49

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	47.8	ND	25.9	24.3	51.4	47.3	1	50.0-150		J6	6.37	20
(S) o-Terphenyl					60.2	58.0		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3589112-1 11/04/20 00:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	84.7			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3589112-2 11/04/20 01:05

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	42.3	84.6	50.0-150	
(S) o-Terphenyl			104	18.0-148	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3589069-1 11/03/20 21:26

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	49.2			18.0-148

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R3589069-2 11/03/20 21:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	25.2	50.4	50.0-150	
(S) o-Terphenyl			54.5	18.0-148	

L1279941-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1279941-01 11/03/20 23:46 • (MS) R3589069-3 11/03/20 23:59 • (MSD) R3589069-4 11/04/20 00:12

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 %
TPH (GC/FID) High Fraction	48.5	ND	27.7	30.7	57.1	63.3	1	50.0-150			10.3	20
(S) o-Terphenyl					59.1	61.8		18.0-148				

Method Blank (MB)

(MB) R3589646-2 11/04/20 18:22

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	93.6			14.0-149
(S) 2-Fluorobiphenyl	82.0			34.0-125
(S) p-Terphenyl-d14	78.8			23.0-120

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Laboratory Control Sample (LCS)

(LCS) R3589646-1 11/04/20 17:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0766	95.8	50.0-126	
Acenaphthene	0.0800	0.0764	95.5	50.0-120	
Acenaphthylene	0.0800	0.0795	99.4	50.0-120	
Benzo(a)anthracene	0.0800	0.0767	95.9	45.0-120	
Benzo(a)pyrene	0.0800	0.0673	84.1	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0749	93.6	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0736	92.0	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0718	89.8	49.0-125	
Chrysene	0.0800	0.0766	95.8	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0718	89.8	47.0-125	
Fluoranthene	0.0800	0.0791	98.9	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3589646-1 11/04/20 17:59

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Fluorene	0.0800	0.0816	102	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0719	89.9	46.0-125	
Naphthalene	0.0800	0.0738	92.3	50.0-120	
Phenanthrene	0.0800	0.0763	95.4	47.0-120	
Pyrene	0.0800	0.0757	94.6	43.0-123	
1-Methylnaphthalene	0.0800	0.0824	103	51.0-121	
2-Methylnaphthalene	0.0800	0.0809	101	50.0-120	
2-Chloronaphthalene	0.0800	0.0762	95.3	50.0-120	
(S) Nitrobenzene-d5			98.3	14.0-149	
(S) 2-Fluorobiphenyl			86.0	34.0-125	
(S) p-Terphenyl-d14			77.7	23.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1280788-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1280788-01 11/04/20 22:34 • (MS) R3589646-3 11/04/20 22:57 • (MSD) R3589646-4 11/04/20 23:20

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	0.0776	ND	0.0559	0.0580	72.0	74.4	1	10.0-145			3.69	30
Acenaphthene	0.0776	ND	0.0633	0.0643	81.6	82.4	1	14.0-127			1.57	27
Acenaphthylene	0.0776	ND	0.0629	0.0636	81.1	81.5	1	21.0-124			1.11	25
Benzo(a)anthracene	0.0776	ND	0.0572	0.0586	73.7	75.1	1	10.0-139			2.42	30
Benzo(a)pyrene	0.0776	ND	0.0514	0.0522	66.2	66.9	1	10.0-141			1.54	31
Benzo(b)fluoranthene	0.0776	ND	0.0485	0.0497	62.5	63.7	1	10.0-140			2.44	36
Benzo(g,h,i)perylene	0.0776	ND	0.0542	0.0549	69.8	70.4	1	10.0-140			1.28	33
Benzo(k)fluoranthene	0.0776	ND	0.0533	0.0537	68.7	68.8	1	10.0-137			0.748	31
Chrysene	0.0776	ND	0.0587	0.0580	75.6	74.4	1	10.0-145			1.20	30
Dibenz(a,h)anthracene	0.0776	ND	0.0542	0.0535	69.8	68.6	1	10.0-132			1.30	31
Fluoranthene	0.0776	ND	0.0593	0.0614	76.4	78.7	1	10.0-153			3.48	33
Fluorene	0.0776	ND	0.0611	0.0625	78.7	80.1	1	11.0-130			2.27	29
Indeno(1,2,3-cd)pyrene	0.0776	ND	0.0522	0.0521	67.3	66.8	1	10.0-137			0.192	32
Naphthalene	0.0776	ND	0.0595	0.0603	76.7	77.3	1	10.0-135			1.34	27
Phenanthrene	0.0776	ND	0.0568	0.0584	73.2	74.9	1	10.0-144			2.78	31
Pyrene	0.0776	ND	0.0575	0.0576	74.1	73.8	1	10.0-148			0.174	35
1-Methylnaphthalene	0.0776	ND	0.0648	0.0652	83.5	83.6	1	10.0-142			0.615	28
2-Methylnaphthalene	0.0776	ND	0.0629	0.0640	81.1	82.1	1	10.0-137			1.73	28
2-Chloronaphthalene	0.0776	ND	0.0600	0.0617	77.3	79.1	1	29.0-120			2.79	24
(S) Nitrobenzene-d5					87.3	86.0		14.0-149				
(S) 2-Fluorobiphenyl					77.1	74.5		34.0-125				
(S) p-Terphenyl-d14					67.5	64.3		23.0-120				



Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

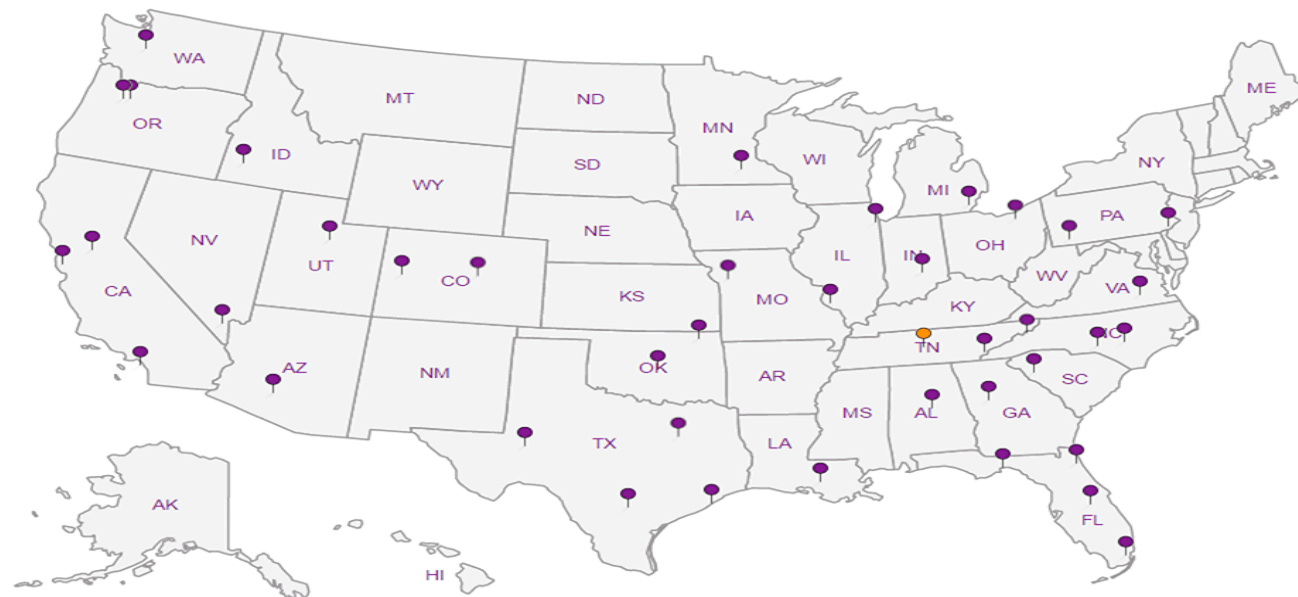
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



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