

October 22, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laramie Energy - Grand Junction, CO

Sample Delivery Group: L1149263
Samples Received: 10/11/2019
Project Number:
Description: MWR 17-2
Site: MWR 17-2
Report To: Robert Stockton
760 Horizon Dr., Ste. 101
Grand Junction, CO 81506

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.





Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	6
Sr: Sample Results	7
101019-MWR17-2-E3(24") L1149263-01	7
101019-MWR17-2-N1(30") L1149263-02	9
101019-MWR17-2-N2(24") L1149263-03	11
101019-MWR17-2-W2(30") L1149263-04	13
101019-MWR17-2-E1(10') L1149263-05	15
101019-MWR17-2-N4(36") L1149263-06	17
101019-MWR17-2-N5(30") L1149263-07	19
101019-MWR17-2-N3(29") L1149263-08	21
101019-MWR17-2-W1(36") L1149263-09	23
Qc: Quality Control Summary	25
Wet Chemistry by Method 3060A/7196A	25
Wet Chemistry by Method 9045D	29
Wet Chemistry by Method 9050AMod	30
Mercury by Method 7471A	32
Metals (ICP) by Method 6010B	33
Volatile Organic Compounds (GC) by Method 8015D/GRO	35
Volatile Organic Compounds (GC/MS) by Method 8260B	37
Semi-Volatile Organic Compounds (GC) by Method 8015	39
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	40
Gl: Glossary of Terms	42
Al: Accreditations & Locations	43
Sc: Sample Chain of Custody	44

¹ Cp

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³ Ss

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⁶ Qc

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



101019-MWR17-2-E3(24") L1149263-01 Solid

Collected by Robert Stockton
Collected date/time 10/10/19 09:20
Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1364000	1	10/18/19 10:09	10/18/19 10:09	TRB	Mt. Juliet, TN
Calculated Results	WG1362962	1	10/15/19 14:42	10/16/19 12:10	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1361796	1	10/13/19 12:29	10/13/19 20:53	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1362065	1	10/12/19 19:00	10/12/19 20:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1364852	1	10/17/19 15:49	10/17/19 17:35	MJA	Mt. Juliet, TN
Mercury by Method 7471A	WG1363105	1	10/15/19 13:12	10/15/19 18:29	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1362962	1	10/15/19 14:42	10/16/19 12:10	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1363280	1	10/12/19 15:09	10/16/19 07:46	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1365608	1	10/12/19 15:09	10/18/19 20:52	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1363996	1	10/16/19 18:41	10/17/19 04:47	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1364290	1	10/17/19 06:17	10/17/19 18:59	SNR	Mt. Juliet, TN

¹Cp

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101019-MWR17-2-N1(30") L1149263-02 Solid

Collected by Robert Stockton
Collected date/time 10/10/19 09:30
Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1364000	1	10/18/19 10:12	10/18/19 10:12	TRB	Mt. Juliet, TN
Calculated Results	WG1362962	1	10/15/19 14:42	10/16/19 12:12	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1361796	1	10/13/19 12:29	10/13/19 20:53	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1362065	1	10/12/19 19:00	10/12/19 20:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1364852	1	10/17/19 15:49	10/17/19 17:35	MJA	Mt. Juliet, TN
Mercury by Method 7471A	WG1363105	1	10/15/19 13:12	10/15/19 18:35	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1362962	1	10/15/19 14:42	10/16/19 12:12	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1363280	1	10/12/19 15:09	10/16/19 08:10	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1365608	1	10/12/19 15:09	10/18/19 21:13	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1363996	1	10/16/19 18:41	10/17/19 05:26	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1364290	1	10/17/19 06:17	10/17/19 21:44	SNR	Mt. Juliet, TN

101019-MWR17-2-N2(24") L1149263-03 Solid

Collected by Robert Stockton
Collected date/time 10/10/19 09:35
Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1364000	1	10/18/19 10:15	10/18/19 10:15	TRB	Mt. Juliet, TN
Calculated Results	WG1362962	1	10/15/19 14:42	10/16/19 12:15	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1361796	1	10/13/19 12:29	10/13/19 20:54	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1362065	1	10/12/19 19:00	10/12/19 20:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1364852	1	10/17/19 15:49	10/17/19 17:35	MJA	Mt. Juliet, TN
Mercury by Method 7471A	WG1363105	1	10/15/19 13:12	10/15/19 18:37	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1362962	1	10/15/19 14:42	10/16/19 12:15	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1363280	1	10/12/19 15:09	10/16/19 08:34	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1365608	1	10/12/19 15:09	10/18/19 21:34	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1363996	1	10/16/19 18:41	10/17/19 05:00	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1364290	1	10/17/19 06:17	10/17/19 22:05	SNR	Mt. Juliet, TN

101019-MWR17-2-W2(30") L1149263-04 Solid

Collected by Robert Stockton
Collected date/time 10/10/19 11:35
Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1364000	1	10/18/19 10:17	10/18/19 10:17	TRB	Mt. Juliet, TN
Calculated Results	WG1362962	1	10/15/19 14:42	10/16/19 12:23	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1361796	1	10/13/19 12:29	10/13/19 20:56	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1362065	1	10/12/19 19:00	10/12/19 20:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1364852	1	10/17/19 15:49	10/17/19 17:35	MJA	Mt. Juliet, TN

ACCOUNT:

Laramie Energy - Grand Junction, CO

PROJECT:

SDG:

L1149263

DATE/TIME:

10/22/19 14:36

PAGE:

3 of 44

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



101019-MWR17-2-W2(30") L1149263-04 Solid

Collected by Robert Stockton
Collected date/time 10/10/19 11:35
Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7471A	WG1363105	1	10/15/19 13:12	10/15/19 18:40	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1362962	1	10/15/19 14:42	10/16/19 12:23	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1363280	1	10/12/19 15:09	10/16/19 08:58	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1365608	1	10/12/19 15:09	10/18/19 21:54	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1363996	1	10/16/19 18:41	10/17/19 02:36	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1364290	1	10/17/19 06:17	10/17/19 22:25	SNR	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

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⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

101019-MWR17-2-E1(10') L1149263-05 Solid

Collected by Robert Stockton
Collected date/time 10/10/19 13:45
Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1364000	1	10/18/19 10:20	10/18/19 10:20	TRB	Mt. Juliet, TN
Calculated Results	WG1362962	1	10/15/19 14:42	10/16/19 12:25	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1361796	1	10/13/19 12:29	10/13/19 21:00	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1362065	1	10/12/19 19:00	10/12/19 20:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1364852	1	10/17/19 15:49	10/17/19 17:35	MJA	Mt. Juliet, TN
Mercury by Method 7471A	WG1363105	1	10/15/19 13:12	10/15/19 18:42	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1362962	1	10/15/19 14:42	10/16/19 12:25	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1363280	250	10/12/19 15:09	10/16/19 10:35	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1366759	8	10/12/19 15:09	10/21/19 15:26	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1363996	1	10/16/19 18:41	10/17/19 02:49	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1364290	1	10/17/19 06:17	10/17/19 22:46	SNR	Mt. Juliet, TN

101019-MWR17-2-N4(36") L1149263-06 Solid

Collected by Robert Stockton
Collected date/time 10/10/19 12:00
Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1363693	1	10/17/19 04:56	10/17/19 04:56	TRB	Mt. Juliet, TN
Calculated Results	WG1362962	1	10/15/19 14:42	10/16/19 12:28	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1361793	1	10/12/19 10:13	10/12/19 23:01	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1362065	1	10/12/19 19:00	10/12/19 20:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1364981	1	10/18/19 11:00	10/18/19 14:15	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1363105	1	10/15/19 13:12	10/15/19 18:44	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1362962	1	10/15/19 14:42	10/16/19 12:28	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1363280	1	10/12/19 15:09	10/16/19 09:22	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1365608	1	10/12/19 15:09	10/18/19 22:15	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1363996	1	10/16/19 18:41	10/17/19 03:02	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1364290	1	10/17/19 06:17	10/17/19 23:07	SNR	Mt. Juliet, TN

101019-MWR17-2-N5(30") L1149263-07 Solid

Collected by Robert Stockton
Collected date/time 10/10/19 12:05
Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1363693	1	10/17/19 04:59	10/17/19 04:59	TRB	Mt. Juliet, TN
Calculated Results	WG1362962	1	10/15/19 14:42	10/16/19 12:31	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1361796	1	10/13/19 12:29	10/13/19 21:01	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1362065	1	10/12/19 19:00	10/12/19 20:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1364981	1	10/18/19 11:00	10/18/19 14:15	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1363105	1	10/15/19 13:12	10/15/19 18:46	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1362962	1	10/15/19 14:42	10/16/19 12:31	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1363280	1	10/12/19 15:09	10/16/19 09:46	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1365608	1	10/12/19 15:09	10/18/19 22:35	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1363996	1	10/16/19 18:41	10/17/19 03:15	KME	Mt. Juliet, TN

ACCOUNT:

Laramie Energy - Grand Junction, CO

PROJECT:

SDG:

L1149263

DATE/TIME:

10/22/19 14:36

PAGE:

4 of 44

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



101019-MWR17-2-N5(30") L1149263-07 Solid

Collected by Robert Stockton
Collected date/time 10/10/19 12:05
Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1364290	1	10/17/19 06:17	10/17/19 23:27	SNR	Mt. Juliet, TN

¹Cp

²Tc

³Ss

101019-MWR17-2-N3(29") L1149263-08 Solid

Collected by Robert Stockton
Collected date/time 10/10/19 13:25
Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1363693	1	10/17/19 05:01	10/17/19 05:01	TRB	Mt. Juliet, TN
Calculated Results	WG1362962	1	10/15/19 14:42	10/16/19 12:33	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1361793	1	10/12/19 10:13	10/12/19 23:02	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1362065	1	10/12/19 19:00	10/12/19 20:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1364981	1	10/18/19 11:00	10/18/19 14:15	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1363105	1	10/15/19 13:12	10/15/19 18:48	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1362962	1	10/15/19 14:42	10/16/19 12:33	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1363350	1	10/12/19 15:09	10/15/19 23:35	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1365608	1	10/12/19 15:09	10/18/19 22:56	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1363996	1	10/16/19 18:41	10/17/19 03:28	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1364290	1	10/17/19 06:17	10/17/19 23:48	SNR	Mt. Juliet, TN

⁴Cn

⁵Sr

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⁷Gl

⁸Al

⁹Sc

101019-MWR17-2-W1(36") L1149263-09 Solid

Collected by Robert Stockton
Collected date/time 10/10/19 14:20
Received date/time 10/11/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1363693	1	10/17/19 05:04	10/17/19 05:04	TRB	Mt. Juliet, TN
Calculated Results	WG1362962	1	10/15/19 14:42	10/16/19 12:36	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1362268	1	10/13/19 17:07	10/14/19 01:13	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1362065	1	10/12/19 19:00	10/12/19 20:00	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1364981	1	10/18/19 11:00	10/18/19 14:15	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1363105	1	10/15/19 13:12	10/15/19 18:51	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1362962	1	10/15/19 14:42	10/16/19 12:36	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1363350	1	10/12/19 15:09	10/15/19 23:55	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1365608	1	10/12/19 15:09	10/18/19 23:16	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1363996	1	10/16/19 18:41	10/17/19 03:41	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1364290	1	10/17/19 06:17	10/18/19 00:09	SNR	Mt. Juliet, TN

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PROJECT:

SDG:

L1149263

DATE/TIME:

10/22/19 14:36

PAGE:

5 of 44



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	6.99		1	10/18/2019 10:09	WG1364000

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	20.9		1.00	1	10/16/2019 12:10	WG1362962

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/13/2019 20:53	WG1361796

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.60	T8	1	10/12/2019 20:00	WG1362065

Sample Narrative:

L1149263-01 WG1362065: 8.6 at 18.8C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	542		10.0	1	10/17/2019 17:35	WG1364852

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND	J3	0.0300	1	10/15/2019 18:29	WG1363105

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	2.90		2.00	1	10/16/2019 12:10	WG1362962
Barium	492		0.500	1	10/16/2019 12:10	WG1362962
Cadmium	ND		0.500	1	10/16/2019 12:10	WG1362962
Chromium	20.9		1.00	1	10/16/2019 12:10	WG1362962
Copper	22.1		2.00	1	10/16/2019 12:10	WG1362962
Lead	11.5		0.500	1	10/16/2019 12:10	WG1362962
Nickel	21.4		2.00	1	10/16/2019 12:10	WG1362962
Selenium	ND		2.00	1	10/16/2019 12:10	WG1362962
Silver	ND		1.00	1	10/16/2019 12:10	WG1362962
Zinc	59.2		5.00	1	10/16/2019 12:10	WG1362962

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/16/2019 07:46	WG1363280
(S) a,a,a-Trifluorotoluene(FID)	95.9		77.0-120		10/16/2019 07:46	WG1363280



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/18/2019 20:52	WG1365608
Toluene	ND		0.00500	1	10/18/2019 20:52	WG1365608
Ethylbenzene	ND		0.00250	1	10/18/2019 20:52	WG1365608
Total Xylenes	ND		0.00650	1	10/18/2019 20:52	WG1365608
Methyl tert-butyl ether	ND		0.00100	1	10/18/2019 20:52	WG1365608
(S) Toluene-d8	101		75.0-131		10/18/2019 20:52	WG1365608
(S) 4-Bromofluorobenzene	100		67.0-138		10/18/2019 20:52	WG1365608
(S) 1,2-Dichloroethane-d4	104		70.0-130		10/18/2019 20:52	WG1365608

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	6.96		4.00	1	10/17/2019 04:47	WG1363996
(S) o-Terphenyl	58.9		18.0-148		10/17/2019 04:47	WG1363996

6 Qc

7 Gl

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	10/17/2019 18:59	WG1364290
Acenaphthene	ND		0.00600	1	10/17/2019 18:59	WG1364290
Acenaphthylene	ND		0.00600	1	10/17/2019 18:59	WG1364290
Benzo(a)anthracene	ND		0.00600	1	10/17/2019 18:59	WG1364290
Benzo(a)pyrene	ND		0.00600	1	10/17/2019 18:59	WG1364290
Benzo(b)fluoranthene	ND		0.00600	1	10/17/2019 18:59	WG1364290
Benzo(g,h,i)perylene	ND		0.00600	1	10/17/2019 18:59	WG1364290
Benzo(k)fluoranthene	ND		0.00600	1	10/17/2019 18:59	WG1364290
Chrysene	ND		0.00600	1	10/17/2019 18:59	WG1364290
Dibenz(a,h)anthracene	ND		0.00600	1	10/17/2019 18:59	WG1364290
Fluoranthene	ND		0.00600	1	10/17/2019 18:59	WG1364290
Fluorene	ND		0.00600	1	10/17/2019 18:59	WG1364290
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/17/2019 18:59	WG1364290
Naphthalene	ND		0.0200	1	10/17/2019 18:59	WG1364290
Phenanthrene	ND		0.00600	1	10/17/2019 18:59	WG1364290
Pyrene	ND		0.00600	1	10/17/2019 18:59	WG1364290
1-Methylnaphthalene	ND		0.0200	1	10/17/2019 18:59	WG1364290
2-Methylnaphthalene	ND		0.0200	1	10/17/2019 18:59	WG1364290
2-Chloronaphthalene	ND		0.0200	1	10/17/2019 18:59	WG1364290
(S) p-Terphenyl-d14	77.8		23.0-120		10/17/2019 18:59	WG1364290
(S) Nitrobenzene-d5	70.1		14.0-149		10/17/2019 18:59	WG1364290
(S) 2-Fluorobiphenyl	77.2		34.0-125		10/17/2019 18:59	WG1364290

8 Al

9 Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	6.89		1	10/18/2019 10:12	WG1364000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	18.6		1.00	1	10/16/2019 12:12	WG1362962

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	10/13/2019 20:53	WG1361796

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.46	T8	1	10/12/2019 20:00	WG1362065

Sample Narrative:

L1149263-02 WG1362065: 8.46 at 18.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1060		10.0	1	10/17/2019 17:35	WG1364852

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND	J3	0.0300	1	10/15/2019 18:35	WG1363105

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.59		2.00	1	10/16/2019 12:12	WG1362962
Barium	158		0.500	1	10/16/2019 12:12	WG1362962
Cadmium	ND		0.500	1	10/16/2019 12:12	WG1362962
Chromium	18.6		1.00	1	10/16/2019 12:12	WG1362962
Copper	21.8		2.00	1	10/16/2019 12:12	WG1362962
Lead	11.2		0.500	1	10/16/2019 12:12	WG1362962
Nickel	17.0		2.00	1	10/16/2019 12:12	WG1362962
Selenium	ND		2.00	1	10/16/2019 12:12	WG1362962
Silver	ND		1.00	1	10/16/2019 12:12	WG1362962
Zinc	58.6		5.00	1	10/16/2019 12:12	WG1362962

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/16/2019 08:10	WG1363280
(S) a, a, a-Trifluorotoluene(FID)	93.9		77.0-120		10/16/2019 08:10	WG1363280



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/18/2019 21:13	WG1365608
Toluene	ND		0.00500	1	10/18/2019 21:13	WG1365608
Ethylbenzene	ND		0.00250	1	10/18/2019 21:13	WG1365608
Total Xylenes	ND		0.00650	1	10/18/2019 21:13	WG1365608
Methyl tert-butyl ether	ND		0.00100	1	10/18/2019 21:13	WG1365608
(S) Toluene-d8	102		75.0-131		10/18/2019 21:13	WG1365608
(S) 4-Bromofluorobenzene	97.8		67.0-138		10/18/2019 21:13	WG1365608
(S) 1,2-Dichloroethane-d4	101		70.0-130		10/18/2019 21:13	WG1365608

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	7.03		4.00	1	10/17/2019 05:26	WG1363996
(S) o-Terphenyl	60.1		18.0-148		10/17/2019 05:26	WG1363996

6 Qc

7 Gl

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	10/17/2019 21:44	WG1364290
Acenaphthene	ND		0.00600	1	10/17/2019 21:44	WG1364290
Acenaphthylene	ND		0.00600	1	10/17/2019 21:44	WG1364290
Benzo(a)anthracene	ND		0.00600	1	10/17/2019 21:44	WG1364290
Benzo(a)pyrene	ND		0.00600	1	10/17/2019 21:44	WG1364290
Benzo(b)fluoranthene	ND		0.00600	1	10/17/2019 21:44	WG1364290
Benzo(g,h,i)perylene	ND		0.00600	1	10/17/2019 21:44	WG1364290
Benzo(k)fluoranthene	ND		0.00600	1	10/17/2019 21:44	WG1364290
Chrysene	ND		0.00600	1	10/17/2019 21:44	WG1364290
Dibenz(a,h)anthracene	ND		0.00600	1	10/17/2019 21:44	WG1364290
Fluoranthene	ND		0.00600	1	10/17/2019 21:44	WG1364290
Fluorene	ND		0.00600	1	10/17/2019 21:44	WG1364290
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/17/2019 21:44	WG1364290
Naphthalene	ND		0.0200	1	10/17/2019 21:44	WG1364290
Phenanthrene	ND		0.00600	1	10/17/2019 21:44	WG1364290
Pyrene	ND		0.00600	1	10/17/2019 21:44	WG1364290
1-Methylnaphthalene	ND		0.0200	1	10/17/2019 21:44	WG1364290
2-Methylnaphthalene	ND		0.0200	1	10/17/2019 21:44	WG1364290
2-Chloronaphthalene	ND		0.0200	1	10/17/2019 21:44	WG1364290
(S) p-Terphenyl-d14	63.1		23.0-120		10/17/2019 21:44	WG1364290
(S) Nitrobenzene-d5	64.5		14.0-149		10/17/2019 21:44	WG1364290
(S) 2-Fluorobiphenyl	66.2		34.0-125		10/17/2019 21:44	WG1364290

8 Al

9 Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.25		1	10/18/2019 10:15	WG1364000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	19.6		1.00	1	10/16/2019 12:15	WG1362962

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	10/13/2019 20:54	WG1361796

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.20	T8	1	10/12/2019 20:00	WG1362065

Sample Narrative:

L1149263-03 WG1362065: 8.2 at 18.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	733		10.0	1	10/17/2019 17:35	WG1364852

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND	J3	0.0300	1	10/15/2019 18:37	WG1363105

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.43		2.00	1	10/16/2019 12:15	WG1362962
Barium	160		0.500	1	10/16/2019 12:15	WG1362962
Cadmium	ND		0.500	1	10/16/2019 12:15	WG1362962
Chromium	19.6		1.00	1	10/16/2019 12:15	WG1362962
Copper	22.0		2.00	1	10/16/2019 12:15	WG1362962
Lead	11.8		0.500	1	10/16/2019 12:15	WG1362962
Nickel	16.6		2.00	1	10/16/2019 12:15	WG1362962
Selenium	ND		2.00	1	10/16/2019 12:15	WG1362962
Silver	ND		1.00	1	10/16/2019 12:15	WG1362962
Zinc	56.4		5.00	1	10/16/2019 12:15	WG1362962

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/16/2019 08:34	WG1363280
(S) a,a,a-Trifluorotoluene(FID)	95.1		77.0-120		10/16/2019 08:34	WG1363280



Collected date/time: 10/10/19 09:35

L1149263

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/18/2019 21:34	WG1365608
Toluene	ND		0.00500	1	10/18/2019 21:34	WG1365608
Ethylbenzene	ND		0.00250	1	10/18/2019 21:34	WG1365608
Total Xylenes	ND		0.00650	1	10/18/2019 21:34	WG1365608
Methyl tert-butyl ether	ND		0.00100	1	10/18/2019 21:34	WG1365608
(S) Toluene-d8	103		75.0-131		10/18/2019 21:34	WG1365608
(S) 4-Bromofluorobenzene	99.9		67.0-138		10/18/2019 21:34	WG1365608
(S) 1,2-Dichloroethane-d4	105		70.0-130		10/18/2019 21:34	WG1365608

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	10/17/2019 05:00	WG1363996
(S) o-Terphenyl	60.5		18.0-148		10/17/2019 05:00	WG1363996

6 Qc

7 Gl

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	10/17/2019 22:05	WG1364290
Acenaphthene	ND		0.00600	1	10/17/2019 22:05	WG1364290
Acenaphthylene	ND		0.00600	1	10/17/2019 22:05	WG1364290
Benzo(a)anthracene	ND		0.00600	1	10/17/2019 22:05	WG1364290
Benzo(a)pyrene	ND		0.00600	1	10/17/2019 22:05	WG1364290
Benzo(b)fluoranthene	ND		0.00600	1	10/17/2019 22:05	WG1364290
Benzo(g,h,i)perylene	ND		0.00600	1	10/17/2019 22:05	WG1364290
Benzo(k)fluoranthene	ND		0.00600	1	10/17/2019 22:05	WG1364290
Chrysene	ND		0.00600	1	10/17/2019 22:05	WG1364290
Dibenz(a,h)anthracene	ND		0.00600	1	10/17/2019 22:05	WG1364290
Fluoranthene	ND		0.00600	1	10/17/2019 22:05	WG1364290
Fluorene	ND		0.00600	1	10/17/2019 22:05	WG1364290
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/17/2019 22:05	WG1364290
Naphthalene	ND		0.0200	1	10/17/2019 22:05	WG1364290
Phenanthrene	ND		0.00600	1	10/17/2019 22:05	WG1364290
Pyrene	ND		0.00600	1	10/17/2019 22:05	WG1364290
1-Methylnaphthalene	ND		0.0200	1	10/17/2019 22:05	WG1364290
2-Methylnaphthalene	ND		0.0200	1	10/17/2019 22:05	WG1364290
2-Chloronaphthalene	ND		0.0200	1	10/17/2019 22:05	WG1364290
(S) p-Terphenyl-d14	73.3		23.0-120		10/17/2019 22:05	WG1364290
(S) Nitrobenzene-d5	73.3		14.0-149		10/17/2019 22:05	WG1364290
(S) 2-Fluorobiphenyl	79.1		34.0-125		10/17/2019 22:05	WG1364290

8 Al

9 Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.90		1	10/18/2019 10:17	WG1364000

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	22.0		1.00	1	10/16/2019 12:23	WG1362962

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	10/13/2019 20:56	WG1361796

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.26	T8	1	10/12/2019 20:00	WG1362065

Sample Narrative:

L1149263-04 WG1362065: 8.26 at 18C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	414		10.0	1	10/17/2019 17:35	WG1364852

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND	J3	0.0300	1	10/15/2019 18:40	WG1363105

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.12		2.00	1	10/16/2019 12:23	WG1362962
Barium	209		0.500	1	10/16/2019 12:23	WG1362962
Cadmium	ND		0.500	1	10/16/2019 12:23	WG1362962
Chromium	22.0		1.00	1	10/16/2019 12:23	WG1362962
Copper	24.1		2.00	1	10/16/2019 12:23	WG1362962
Lead	13.1		0.500	1	10/16/2019 12:23	WG1362962
Nickel	19.3		2.00	1	10/16/2019 12:23	WG1362962
Selenium	ND		2.00	1	10/16/2019 12:23	WG1362962
Silver	ND		1.00	1	10/16/2019 12:23	WG1362962
Zinc	64.5		5.00	1	10/16/2019 12:23	WG1362962

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/16/2019 08:58	WG1363280
(S) a,a,a-Trifluorotoluene(FID)	96.1		77.0-120		10/16/2019 08:58	WG1363280



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/18/2019 21:54	WG1365608
Toluene	ND		0.00500	1	10/18/2019 21:54	WG1365608
Ethylbenzene	ND		0.00250	1	10/18/2019 21:54	WG1365608
Total Xylenes	ND		0.00650	1	10/18/2019 21:54	WG1365608
Methyl tert-butyl ether	ND		0.00100	1	10/18/2019 21:54	WG1365608
(S) Toluene-d8	101		75.0-131		10/18/2019 21:54	WG1365608
(S) 4-Bromofluorobenzene	97.8		67.0-138		10/18/2019 21:54	WG1365608
(S) 1,2-Dichloroethane-d4	101		70.0-130		10/18/2019 21:54	WG1365608

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

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	8.95		4.00	1	10/17/2019 02:36	WG1363996
(S) o-Terphenyl	74.2		18.0-148		10/17/2019 02:36	WG1363996

6 Qc

7 Gl

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	10/17/2019 22:25	WG1364290
Acenaphthene	ND		0.00600	1	10/17/2019 22:25	WG1364290
Acenaphthylene	ND		0.00600	1	10/17/2019 22:25	WG1364290
Benzo(a)anthracene	ND		0.00600	1	10/17/2019 22:25	WG1364290
Benzo(a)pyrene	ND		0.00600	1	10/17/2019 22:25	WG1364290
Benzo(b)fluoranthene	ND		0.00600	1	10/17/2019 22:25	WG1364290
Benzo(g,h,i)perylene	ND		0.00600	1	10/17/2019 22:25	WG1364290
Benzo(k)fluoranthene	ND		0.00600	1	10/17/2019 22:25	WG1364290
Chrysene	ND		0.00600	1	10/17/2019 22:25	WG1364290
Dibenz(a,h)anthracene	ND		0.00600	1	10/17/2019 22:25	WG1364290
Fluoranthene	ND		0.00600	1	10/17/2019 22:25	WG1364290
Fluorene	ND		0.00600	1	10/17/2019 22:25	WG1364290
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/17/2019 22:25	WG1364290
Naphthalene	ND		0.0200	1	10/17/2019 22:25	WG1364290
Phenanthrene	ND		0.00600	1	10/17/2019 22:25	WG1364290
Pyrene	ND		0.00600	1	10/17/2019 22:25	WG1364290
1-Methylnaphthalene	ND		0.0200	1	10/17/2019 22:25	WG1364290
2-Methylnaphthalene	ND		0.0200	1	10/17/2019 22:25	WG1364290
2-Chloronaphthalene	ND		0.0200	1	10/17/2019 22:25	WG1364290
(S) p-Terphenyl-d14	69.6		23.0-120		10/17/2019 22:25	WG1364290
(S) Nitrobenzene-d5	69.7		14.0-149		10/17/2019 22:25	WG1364290
(S) 2-Fluorobiphenyl	76.4		34.0-125		10/17/2019 22:25	WG1364290

8 Al

9 Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.906		1	10/18/2019 10:20	WG1364000

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	20.9		1.00	1	10/16/2019 12:25	WG1362962

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/13/2019 21:00	WG1361796

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.89	T8	1	10/12/2019 20:00	WG1362065

Sample Narrative:

L1149263-05 WG1362065: 7.89 at 18C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	umhos/cm		umhos/cm			
	1110		10.0	1	10/17/2019 17:35	WG1364852

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND	J3	0.0300	1	10/15/2019 18:42	WG1363105

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.04		2.00	1	10/16/2019 12:25	WG1362962
Barium	151		0.500	1	10/16/2019 12:25	WG1362962
Cadmium	ND		0.500	1	10/16/2019 12:25	WG1362962
Chromium	20.9		1.00	1	10/16/2019 12:25	WG1362962
Copper	19.9		2.00	1	10/16/2019 12:25	WG1362962
Lead	11.5		0.500	1	10/16/2019 12:25	WG1362962
Nickel	16.8		2.00	1	10/16/2019 12:25	WG1362962
Selenium	ND		2.00	1	10/16/2019 12:25	WG1362962
Silver	ND		1.00	1	10/16/2019 12:25	WG1362962
Zinc	58.1		5.00	1	10/16/2019 12:25	WG1362962

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	101		25.0	250	10/16/2019 10:35	WG1363280
(S) a,a,a-Trifluorotoluene(FID)	97.5		77.0-120		10/16/2019 10:35	WG1363280



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.0180		0.00800	8	10/21/2019 15:26	WG1366759
Toluene	0.285		0.0400	8	10/21/2019 15:26	WG1366759
Ethylbenzene	0.251		0.0200	8	10/21/2019 15:26	WG1366759
Total Xylenes	4.92		0.0520	8	10/21/2019 15:26	WG1366759
Methyl tert-butyl ether	ND		0.00800	8	10/21/2019 15:26	WG1366759
(S) Toluene-d8	100		75.0-131		10/21/2019 15:26	WG1366759
(S) 4-Bromofluorobenzene	94.8		67.0-138		10/21/2019 15:26	WG1366759
(S) 1,2-Dichloroethane-d4	110		70.0-130		10/21/2019 15:26	WG1366759

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

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	14.1		4.00	1	10/17/2019 02:49	WG1363996
(S) o-Terphenyl	58.1		18.0-148		10/17/2019 02:49	WG1363996

6 Qc

7 Gl

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	10/17/2019 22:46	WG1364290
Acenaphthene	ND		0.00600	1	10/17/2019 22:46	WG1364290
Acenaphthylene	ND		0.00600	1	10/17/2019 22:46	WG1364290
Benzo(a)anthracene	ND		0.00600	1	10/17/2019 22:46	WG1364290
Benzo(a)pyrene	ND		0.00600	1	10/17/2019 22:46	WG1364290
Benzo(b)fluoranthene	ND		0.00600	1	10/17/2019 22:46	WG1364290
Benzo(g,h,i)perylene	ND		0.00600	1	10/17/2019 22:46	WG1364290
Benzo(k)fluoranthene	ND		0.00600	1	10/17/2019 22:46	WG1364290
Chrysene	ND		0.00600	1	10/17/2019 22:46	WG1364290
Dibenz(a,h)anthracene	ND		0.00600	1	10/17/2019 22:46	WG1364290
Fluoranthene	ND		0.00600	1	10/17/2019 22:46	WG1364290
Fluorene	ND		0.00600	1	10/17/2019 22:46	WG1364290
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/17/2019 22:46	WG1364290
Naphthalene	0.0696		0.0200	1	10/17/2019 22:46	WG1364290
Phenanthrene	ND		0.00600	1	10/17/2019 22:46	WG1364290
Pyrene	ND		0.00600	1	10/17/2019 22:46	WG1364290
1-Methylnaphthalene	0.0478		0.0200	1	10/17/2019 22:46	WG1364290
2-Methylnaphthalene	0.118		0.0200	1	10/17/2019 22:46	WG1364290
2-Chloronaphthalene	ND		0.0200	1	10/17/2019 22:46	WG1364290
(S) p-Terphenyl-d14	69.9		23.0-120		10/17/2019 22:46	WG1364290
(S) Nitrobenzene-d5	83.0		14.0-149		10/17/2019 22:46	WG1364290
(S) 2-Fluorobiphenyl	78.7		34.0-125		10/17/2019 22:46	WG1364290

8 Al

9 Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.15		1	10/17/2019 04:56	WG1363693

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	21.6		1.00	1	10/16/2019 12:28	WG1362962

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/12/2019 23:01	WG1361793

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.09	T8	1	10/12/2019 20:00	WG1362065

Sample Narrative:

L1149263-06 WG1362065: 8.09 at 18C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	988		10.0	1	10/18/2019 14:15	WG1364981

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND	J3	0.0300	1	10/15/2019 18:44	WG1363105

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	2.70		2.00	1	10/16/2019 12:28	WG1362962
Barium	205		0.500	1	10/16/2019 12:28	WG1362962
Cadmium	ND		0.500	1	10/16/2019 12:28	WG1362962
Chromium	21.6		1.00	1	10/16/2019 12:28	WG1362962
Copper	23.2		2.00	1	10/16/2019 12:28	WG1362962
Lead	12.8		0.500	1	10/16/2019 12:28	WG1362962
Nickel	19.1		2.00	1	10/16/2019 12:28	WG1362962
Selenium	ND		2.00	1	10/16/2019 12:28	WG1362962
Silver	ND		1.00	1	10/16/2019 12:28	WG1362962
Zinc	64.3		5.00	1	10/16/2019 12:28	WG1362962

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/16/2019 09:22	WG1363280
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	94.9		77.0-120		10/16/2019 09:22	WG1363280



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/18/2019 22:15	WG1365608
Toluene	ND		0.00500	1	10/18/2019 22:15	WG1365608
Ethylbenzene	ND		0.00250	1	10/18/2019 22:15	WG1365608
Total Xylenes	ND		0.00650	1	10/18/2019 22:15	WG1365608
Methyl tert-butyl ether	ND		0.00100	1	10/18/2019 22:15	WG1365608
(S) Toluene-d8	101		75.0-131		10/18/2019 22:15	WG1365608
(S) 4-Bromofluorobenzene	96.1		67.0-138		10/18/2019 22:15	WG1365608
(S) 1,2-Dichloroethane-d4	105		70.0-130		10/18/2019 22:15	WG1365608

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	10/17/2019 03:02	WG1363996
(S) o-Terphenyl	65.6		18.0-148		10/17/2019 03:02	WG1363996

6 Qc

7 Gl

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	10/17/2019 23:07	WG1364290
Acenaphthene	ND		0.00600	1	10/17/2019 23:07	WG1364290
Acenaphthylene	ND		0.00600	1	10/17/2019 23:07	WG1364290
Benzo(a)anthracene	ND		0.00600	1	10/17/2019 23:07	WG1364290
Benzo(a)pyrene	ND		0.00600	1	10/17/2019 23:07	WG1364290
Benzo(b)fluoranthene	ND		0.00600	1	10/17/2019 23:07	WG1364290
Benzo(g,h,i)perylene	ND		0.00600	1	10/17/2019 23:07	WG1364290
Benzo(k)fluoranthene	ND		0.00600	1	10/17/2019 23:07	WG1364290
Chrysene	ND		0.00600	1	10/17/2019 23:07	WG1364290
Dibenz(a,h)anthracene	ND		0.00600	1	10/17/2019 23:07	WG1364290
Fluoranthene	ND		0.00600	1	10/17/2019 23:07	WG1364290
Fluorene	ND		0.00600	1	10/17/2019 23:07	WG1364290
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/17/2019 23:07	WG1364290
Naphthalene	ND		0.0200	1	10/17/2019 23:07	WG1364290
Phenanthrene	ND		0.00600	1	10/17/2019 23:07	WG1364290
Pyrene	ND		0.00600	1	10/17/2019 23:07	WG1364290
1-Methylnaphthalene	ND		0.0200	1	10/17/2019 23:07	WG1364290
2-Methylnaphthalene	ND		0.0200	1	10/17/2019 23:07	WG1364290
2-Chloronaphthalene	ND		0.0200	1	10/17/2019 23:07	WG1364290
(S) p-Terphenyl-d14	75.1		23.0-120		10/17/2019 23:07	WG1364290
(S) Nitrobenzene-d5	76.1		14.0-149		10/17/2019 23:07	WG1364290
(S) 2-Fluorobiphenyl	80.2		34.0-125		10/17/2019 23:07	WG1364290

8 Al

9 Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.85		1	10/17/2019 04:59	WG1363693

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	22.2		1.00	1	10/16/2019 12:31	WG1362962

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	10/13/2019 21:01	WG1361796

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.10	T8	1	10/12/2019 20:00	WG1362065

Sample Narrative:

L1149263-07 WG1362065: 8.1 at 18C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	822		10.0	1	10/18/2019 14:15	WG1364981

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND	J3	0.0300	1	10/15/2019 18:46	WG1363105

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.51		2.00	1	10/16/2019 12:31	WG1362962
Barium	256		0.500	1	10/16/2019 12:31	WG1362962
Cadmium	ND		0.500	1	10/16/2019 12:31	WG1362962
Chromium	22.2		1.00	1	10/16/2019 12:31	WG1362962
Copper	24.1		2.00	1	10/16/2019 12:31	WG1362962
Lead	13.6		0.500	1	10/16/2019 12:31	WG1362962
Nickel	17.7		2.00	1	10/16/2019 12:31	WG1362962
Selenium	ND		2.00	1	10/16/2019 12:31	WG1362962
Silver	ND		1.00	1	10/16/2019 12:31	WG1362962
Zinc	63.9		5.00	1	10/16/2019 12:31	WG1362962

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/16/2019 09:46	WG1363280
(S) a,a,a-Trifluorotoluene(FID)	95.1		77.0-120		10/16/2019 09:46	WG1363280



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/18/2019 22:35	WG1365608
Toluene	ND		0.00500	1	10/18/2019 22:35	WG1365608
Ethylbenzene	ND		0.00250	1	10/18/2019 22:35	WG1365608
Total Xylenes	ND		0.00650	1	10/18/2019 22:35	WG1365608
Methyl tert-butyl ether	ND		0.00100	1	10/18/2019 22:35	WG1365608
(S) Toluene-d8	100		75.0-131		10/18/2019 22:35	WG1365608
(S) 4-Bromofluorobenzene	97.5		67.0-138		10/18/2019 22:35	WG1365608
(S) 1,2-Dichloroethane-d4	104		70.0-130		10/18/2019 22:35	WG1365608

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	10/17/2019 03:15	WG1363996
(S) o-Terphenyl	65.3		18.0-148		10/17/2019 03:15	WG1363996

6 Qc

7 Gl

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	10/17/2019 23:27	WG1364290
Acenaphthene	ND		0.00600	1	10/17/2019 23:27	WG1364290
Acenaphthylene	ND		0.00600	1	10/17/2019 23:27	WG1364290
Benzo(a)anthracene	ND		0.00600	1	10/17/2019 23:27	WG1364290
Benzo(a)pyrene	ND		0.00600	1	10/17/2019 23:27	WG1364290
Benzo(b)fluoranthene	ND		0.00600	1	10/17/2019 23:27	WG1364290
Benzo(g,h,i)perylene	ND		0.00600	1	10/17/2019 23:27	WG1364290
Benzo(k)fluoranthene	ND		0.00600	1	10/17/2019 23:27	WG1364290
Chrysene	ND		0.00600	1	10/17/2019 23:27	WG1364290
Dibenz(a,h)anthracene	ND		0.00600	1	10/17/2019 23:27	WG1364290
Fluoranthene	ND		0.00600	1	10/17/2019 23:27	WG1364290
Fluorene	ND		0.00600	1	10/17/2019 23:27	WG1364290
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/17/2019 23:27	WG1364290
Naphthalene	ND		0.0200	1	10/17/2019 23:27	WG1364290
Phenanthrene	ND		0.00600	1	10/17/2019 23:27	WG1364290
Pyrene	ND		0.00600	1	10/17/2019 23:27	WG1364290
1-Methylnaphthalene	ND		0.0200	1	10/17/2019 23:27	WG1364290
2-Methylnaphthalene	ND		0.0200	1	10/17/2019 23:27	WG1364290
2-Chloronaphthalene	ND		0.0200	1	10/17/2019 23:27	WG1364290
(S) p-Terphenyl-d14	72.4		23.0-120		10/17/2019 23:27	WG1364290
(S) Nitrobenzene-d5	72.7		14.0-149		10/17/2019 23:27	WG1364290
(S) 2-Fluorobiphenyl	77.2		34.0-125		10/17/2019 23:27	WG1364290

8 Al

9 Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.68		1	10/17/2019 05:01	WG1363693

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	20.5		1.00	1	10/16/2019 12:33	WG1362962

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	10/12/2019 23:02	WG1361793

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.20	T8	1	10/12/2019 20:00	WG1362065

Sample Narrative:

L1149263-08 WG1362065: 8.2 at 18C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1060		10.0	1	10/18/2019 14:15	WG1364981

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND	J3	0.0300	1	10/15/2019 18:48	WG1363105

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.40		2.00	1	10/16/2019 12:33	WG1362962
Barium	277		0.500	1	10/16/2019 12:33	WG1362962
Cadmium	ND		0.500	1	10/16/2019 12:33	WG1362962
Chromium	20.5		1.00	1	10/16/2019 12:33	WG1362962
Copper	22.8		2.00	1	10/16/2019 12:33	WG1362962
Lead	12.4		0.500	1	10/16/2019 12:33	WG1362962
Nickel	17.8		2.00	1	10/16/2019 12:33	WG1362962
Selenium	ND		2.00	1	10/16/2019 12:33	WG1362962
Silver	ND		1.00	1	10/16/2019 12:33	WG1362962
Zinc	60.4		5.00	1	10/16/2019 12:33	WG1362962

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/15/2019 23:35	WG1363350
(S) a, a, a-Trifluorotoluene(FID)	100		77.0-120		10/15/2019 23:35	WG1363350



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/18/2019 22:56	WG1365608
Toluene	ND		0.00500	1	10/18/2019 22:56	WG1365608
Ethylbenzene	ND		0.00250	1	10/18/2019 22:56	WG1365608
Total Xylenes	ND		0.00650	1	10/18/2019 22:56	WG1365608
Methyl tert-butyl ether	ND		0.00100	1	10/18/2019 22:56	WG1365608
(S) Toluene-d8	99.9		75.0-131		10/18/2019 22:56	WG1365608
(S) 4-Bromofluorobenzene	95.7		67.0-138		10/18/2019 22:56	WG1365608
(S) 1,2-Dichloroethane-d4	102		70.0-130		10/18/2019 22:56	WG1365608

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	10/17/2019 03:28	WG1363996
(S) o-Terphenyl	59.2		18.0-148		10/17/2019 03:28	WG1363996

6 Qc

7 Gl

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	10/17/2019 23:48	WG1364290
Acenaphthene	ND		0.00600	1	10/17/2019 23:48	WG1364290
Acenaphthylene	ND		0.00600	1	10/17/2019 23:48	WG1364290
Benzo(a)anthracene	ND		0.00600	1	10/17/2019 23:48	WG1364290
Benzo(a)pyrene	ND		0.00600	1	10/17/2019 23:48	WG1364290
Benzo(b)fluoranthene	ND		0.00600	1	10/17/2019 23:48	WG1364290
Benzo(g,h,i)perylene	ND		0.00600	1	10/17/2019 23:48	WG1364290
Benzo(k)fluoranthene	ND		0.00600	1	10/17/2019 23:48	WG1364290
Chrysene	ND		0.00600	1	10/17/2019 23:48	WG1364290
Dibenz(a,h)anthracene	ND		0.00600	1	10/17/2019 23:48	WG1364290
Fluoranthene	ND		0.00600	1	10/17/2019 23:48	WG1364290
Fluorene	ND		0.00600	1	10/17/2019 23:48	WG1364290
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/17/2019 23:48	WG1364290
Naphthalene	ND		0.0200	1	10/17/2019 23:48	WG1364290
Phenanthrene	ND		0.00600	1	10/17/2019 23:48	WG1364290
Pyrene	ND		0.00600	1	10/17/2019 23:48	WG1364290
1-Methylnaphthalene	ND		0.0200	1	10/17/2019 23:48	WG1364290
2-Methylnaphthalene	ND		0.0200	1	10/17/2019 23:48	WG1364290
2-Chloronaphthalene	ND		0.0200	1	10/17/2019 23:48	WG1364290
(S) p-Terphenyl-d14	70.0		23.0-120		10/17/2019 23:48	WG1364290
(S) Nitrobenzene-d5	76.5		14.0-149		10/17/2019 23:48	WG1364290
(S) 2-Fluorobiphenyl	81.7		34.0-125		10/17/2019 23:48	WG1364290

8 Al

9 Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.57		1	10/17/2019 05:04	WG1363693

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	19.4		1.00	1	10/16/2019 12:36	WG1362962

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	10/14/2019 01:13	WG1362268

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.45	T8	1	10/12/2019 20:00	WG1362065

Sample Narrative:

L1149263-09 WG1362065: 8.45 at 18C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	524		10.0	1	10/18/2019 14:15	WG1364981

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND	J3	0.0300	1	10/15/2019 18:51	WG1363105

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.35		2.00	1	10/16/2019 12:36	WG1362962
Barium	158		0.500	1	10/16/2019 12:36	WG1362962
Cadmium	ND		0.500	1	10/16/2019 12:36	WG1362962
Chromium	19.4		1.00	1	10/16/2019 12:36	WG1362962
Copper	20.8		2.00	1	10/16/2019 12:36	WG1362962
Lead	11.7		0.500	1	10/16/2019 12:36	WG1362962
Nickel	17.3		2.00	1	10/16/2019 12:36	WG1362962
Selenium	ND		2.00	1	10/16/2019 12:36	WG1362962
Silver	ND		1.00	1	10/16/2019 12:36	WG1362962
Zinc	57.3		5.00	1	10/16/2019 12:36	WG1362962

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/15/2019 23:55	WG1363350
(S) a, a, a-Trifluorotoluene(FID)	100		77.0-120		10/15/2019 23:55	WG1363350

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	ND		0.00100	1	10/18/2019 23:16	WG1365608
Toluene	ND		0.00500	1	10/18/2019 23:16	WG1365608
Ethylbenzene	ND		0.00250	1	10/18/2019 23:16	WG1365608
Total Xylenes	ND		0.00650	1	10/18/2019 23:16	WG1365608
Methyl tert-butyl ether	ND		0.00100	1	10/18/2019 23:16	WG1365608
(S) Toluene-d8	104		75.0-131		10/18/2019 23:16	WG1365608
(S) 4-Bromofluorobenzene	99.6		67.0-138		10/18/2019 23:16	WG1365608
(S) 1,2-Dichloroethane-d4	103		70.0-130		10/18/2019 23:16	WG1365608

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	10/17/2019 03:41	WG1363996
(S) o-Terphenyl	58.2		18.0-148		10/17/2019 03:41	WG1363996

6 Qc

7 Gl

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	10/18/2019 00:09	WG1364290
Acenaphthene	ND		0.00600	1	10/18/2019 00:09	WG1364290
Acenaphthylene	ND		0.00600	1	10/18/2019 00:09	WG1364290
Benzo(a)anthracene	ND		0.00600	1	10/18/2019 00:09	WG1364290
Benzo(a)pyrene	ND		0.00600	1	10/18/2019 00:09	WG1364290
Benzo(b)fluoranthene	ND		0.00600	1	10/18/2019 00:09	WG1364290
Benzo(g,h,i)perylene	ND		0.00600	1	10/18/2019 00:09	WG1364290
Benzo(k)fluoranthene	ND		0.00600	1	10/18/2019 00:09	WG1364290
Chrysene	ND		0.00600	1	10/18/2019 00:09	WG1364290
Dibenz(a,h)anthracene	ND		0.00600	1	10/18/2019 00:09	WG1364290
Fluoranthene	ND		0.00600	1	10/18/2019 00:09	WG1364290
Fluorene	ND		0.00600	1	10/18/2019 00:09	WG1364290
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/18/2019 00:09	WG1364290
Naphthalene	ND		0.0200	1	10/18/2019 00:09	WG1364290
Phenanthrene	ND		0.00600	1	10/18/2019 00:09	WG1364290
Pyrene	ND		0.00600	1	10/18/2019 00:09	WG1364290
1-Methylnaphthalene	ND		0.0200	1	10/18/2019 00:09	WG1364290
2-Methylnaphthalene	ND		0.0200	1	10/18/2019 00:09	WG1364290
2-Chloronaphthalene	ND		0.0200	1	10/18/2019 00:09	WG1364290
(S) p-Terphenyl-d14	72.8		23.0-120		10/18/2019 00:09	WG1364290
(S) Nitrobenzene-d5	73.4		14.0-149		10/18/2019 00:09	WG1364290
(S) 2-Fluorobiphenyl	82.0		34.0-125		10/18/2019 00:09	WG1364290

8 Al

9 Sc



Method Blank (MB)

(MB) R3460448-1 10/12/19 22:47

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1148616-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1148616-02 10/12/19 22:51 • (DUP) R3460448-3 10/12/19 22:51

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

L1149042-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1149042-05 10/12/19 22:53 • (DUP) R3460448-4 10/12/19 22:54

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chromium,Hexavalent	2.53	2.64	1	4.12		20

Laboratory Control Sample (LCS)

(LCS) R3460448-2 10/12/19 22:47

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

L1149042-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149042-07 10/12/19 22:55 • (MS) R3460448-5 10/12/19 22:58 • (MSD) R3460448-6 10/12/19 22:58

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	20.0	ND	9.65	9.37	42.9	41.5	1	75.0-125	J6	J6	2.92	20

Sample Narrative:

OS: Sample is a reducer

MS: Sample is a reducer



L1149042-07 Original Sample (OS) • Matrix Spike (MS)

(OS) L1149042-07 10/12/19 22:55 • (MS) R3460448-7 10/12/19 22:59

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chromium,Hexavalent	651	ND	463	71.1	50	75.0-125	J6

Sample Narrative:

OS: Sample is a reducer

MS: Sample is a reducer

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3460575-1 10/13/19 20:27

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1149159-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149159-01 10/13/19 20:34 • (DUP) R3460575-3 10/13/19 20:38

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

L1149263-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1149263-07 10/13/19 21:01 • (DUP) R3460575-7 10/13/19 21:01

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

Laboratory Control Sample (LCS)

(LCS) R3460575-2 10/13/19 20:30

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	23.5	97.8	80.0-120	

L1149263-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149263-04 10/13/19 20:56 • (MS) R3460575-8 10/13/19 21:11 • (MSD) R3460575-4 10/13/19 20:57

	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	15.2	15.3	76.1	76.3	1	75.0-125			0.243	20

L1149263-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1149263-04 10/13/19 20:56 • (MS) R3460575-5 10/13/19 20:58

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	650	ND	815	125	50	75.0-125	



Method Blank (MB)

(MB) R3460616-1 10/14/19 01:08

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1149400-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1149400-02 10/14/19 01:19 • (DUP) R3460616-7 10/14/19 01:20

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

Laboratory Control Sample (LCS)

(LCS) R3460616-2 10/14/19 01:09

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	23.2	96.5	80.0-120	

L1148616-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148616-03 10/14/19 01:09 • (MS) R3460616-3 10/14/19 01:10 • (MSD) R3460616-4 10/14/19 01:10

	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	15.2	16.0	75.9	80.0	1	75.0-125			5.25	20

L1148616-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1148616-03 10/14/19 01:09 • (MS) R3460616-5 10/14/19 01:11

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	726	ND	980	135	50	75.0-125	J5



L1149195-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149195-01 10/12/19 20:00 • (DUP) R3460449-2 10/12/19 20:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.01	7.99	1	0.250		1

Sample Narrative:

OS: 8.01 at 19.1C

DUP: 7.99 at 19.1C

Laboratory Control Sample (LCS)

(LCS) R3460449-1 10/12/19 20:00

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

Sample Narrative:

LCS: 9.98 at 19.8C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3462227-1 10/17/19 17:35

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L1149176-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1149176-02 10/17/19 17:35 • (DUP) R3462227-3 10/17/19 17:35

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	6150	6550	1	6.30		20

⁷Gl

⁸Al

L1149263-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1149263-03 10/17/19 17:35 • (DUP) R3462227-4 10/17/19 17:35

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	733	733	1	0.000		20

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3462227-2 10/17/19 17:35

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	393	395	101	85.0-115	

Method Blank (MB)

(MB) R3462535-1 10/18/19 14:15

	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

L1149263-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1149263-06 10/18/19 14:15 • (DUP) R3462535-3 10/18/19 14:15

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	988	941	1	4.87		20

L1150670-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1150670-06 10/18/19 14:15 • (DUP) R3462535-4 10/18/19 14:15

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	652	645	1	1.08		20

Laboratory Control Sample (LCS)

(LCS) R3462535-2 10/18/19 14:15

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	umhos/cm	umhos/cm	%	%	
Specific Conductance	393	400	102	85.0-115	



Method Blank (MB)

(MB) R3461390-1 10/15/19 17:38

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.00280	0.0300

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

(LCS) R3461390-2 10/15/19 17:45 • (LCSD) R3461390-3 10/15/19 17:52

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Mercury	0.500	0.430	0.535	86.0	107	80.0-120		J3	21.8	20

L1149134-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149134-04 10/15/19 17:54 • (MS) R3461390-4 10/15/19 17:57 • (MSD) R3461390-5 10/15/19 18:09

	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	0.711	1.58	1.72	174	202	1	75.0-125	J5	J5	8.26	20



Method Blank (MB)

(MB) R3461786-1 10/16/19 11:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.460	2.00
Barium	U		0.170	0.500
Cadmium	U		0.0700	0.500
Chromium	U		0.140	1.00
Copper	U		0.530	2.00
Lead	U		0.190	0.500
Nickel	U		0.490	2.00
Selenium	U		0.620	2.00
Silver	0.165	U	0.120	1.00
Zinc	0.623	U	0.590	5.00

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3461786-2 10/16/19 11:23 • (LCSD) R3461786-3 10/16/19 11:25

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 %
Arsenic	100	92.7	96.7	92.7	96.7	80.0-120			4.18	20
Barium	100	98.3	102	98.3	102	80.0-120			4.06	20
Cadmium	100	95.3	98.8	95.3	98.8	80.0-120			3.65	20
Chromium	100	94.9	98.7	94.9	98.7	80.0-120			3.90	20
Copper	100	97.2	101	97.2	101	80.0-120			4.21	20
Lead	100	95.3	98.8	95.3	98.8	80.0-120			3.67	20
Nickel	100	96.3	100	96.3	100	80.0-120			4.23	20
Selenium	100	95.7	98.0	95.7	98.0	80.0-120			2.38	20
Silver	20.0	17.1	17.6	85.4	87.8	80.0-120			2.73	20
Zinc	100	93.2	96.9	93.2	96.9	80.0-120			3.91	20

L1149229-26 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149229-26 10/16/19 11:28 • (MS) R3461786-6 10/16/19 11:36 • (MSD) R3461786-7 10/16/19 11:38

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	1.62	97.5	95.0	95.8	93.4	1	75.0-125			2.51	20
Barium	100	60.7	169	168	108	107	1	75.0-125			0.335	20
Cadmium	100	0.0713	101	98.5	100	98.5	1	75.0-125			2.00	20
Chromium	100	9.50	111	109	102	99.9	1	75.0-125			1.57	20
Copper	100	3.92	111	108	107	104	1	75.0-125			2.09	20
Lead	100	8.16	111	109	103	101	1	75.0-125			2.05	20
Nickel	100	4.50	110	107	105	102	1	75.0-125			2.49	20



L1149229-26 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149229-26 10/16/19 11:28 • (MS) R3461786-6 10/16/19 11:36 • (MSD) R3461786-7 10/16/19 11:38

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Selenium	100	U	98.7	97.0	98.7	97.0	1	75.0-125			1.68	20
Silver	20.0	U	17.6	17.2	88.0	85.9	1	75.0-125			2.37	20
Zinc	100	21.4	126	120	104	99.0	1	75.0-125			4.45	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3463275-2 10/16/19 02:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	97.9			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3463275-1 10/16/19 01:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.00	72.7	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			100	77.0-120	

L1149263-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149263-05 10/16/19 10:35 • (MS) R3463275-3 10/16/19 10:59 • (MSD) R3463275-4 10/16/19 11:23

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	1380	101	1260	1040	84.0	68.0	250	10.0-151			19.1	28
(S) a,a,a-Trifluorotoluene(FID)					103	101		77.0-120				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



Method Blank (MB)

(MB) R3462574-2 10/15/19 22:24

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)	102			77.0-120

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

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Gl

8
Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R3462574-1 10/15/19 21:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.66	103	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			108	77.0-120	

L1149299-32 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149299-32 10/16/19 06:12 • (MS) R3462574-3 10/16/19 06:33 • (MSD) R3462574-4 10/16/19 06:53

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	0.751	4.36	5.14	65.6	79.8	1	10.0-151			16.4	28
(S) a,a,a-Trifluorotoluene(FID)					106	108		77.0-120				



Method Blank (MB)

(MB) R3463256-2 10/18/19 17:27

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Methyl tert-butyl ether	U		0.000295	0.00100
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	104			75.0-131
(S) 4-Bromofluorobenzene	100			67.0-138
(S) 1,2-Dichloroethane-d4	100			70.0-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3463256-1 10/18/19 16:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.136	109	70.0-123	
Ethylbenzene	0.125	0.129	103	74.0-126	
Methyl tert-butyl ether	0.125	0.115	92.0	66.0-132	
Toluene	0.125	0.118	94.4	75.0-121	
Xylenes, Total	0.375	0.326	86.9	72.0-127	
(S) Toluene-d8			101	75.0-131	
(S) 4-Bromofluorobenzene			99.5	67.0-138	
(S) 1,2-Dichloroethane-d4			109	70.0-130	

L1149279-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149279-05 10/19/19 01:41 • (MS) R3463256-3 10/19/19 02:02 • (MSD) R3463256-4 10/19/19 02:23

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	50.0	36.5	147	125	221	177	400	10.0-149	J5	J5	16.2	37
Ethylbenzene	50.0	U	218	194	305	257	400	10.0-160	J5	J5	11.7	38
Methyl tert-butyl ether	50.0	U	55.5	50.0	111	100	400	11.0-147			10.4	35
Toluene	50.0	U	466	393	580	434	400	10.0-156	J5	J5	17.0	38
Xylenes, Total	150	U	792	751	528	501	400	10.0-160	J5	J5	5.31	38
(S) Toluene-d8					99.1	99.9		75.0-131				
(S) 4-Bromofluorobenzene					104	103		67.0-138				
(S) 1,2-Dichloroethane-d4					110	113		70.0-130				



Method Blank (MB)

(MB) R3463481-3 10/21/19 11:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Methyl tert-butyl ether	U		0.000295	0.00100
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	101			75.0-131
(S) 4-Bromofluorobenzene	92.1			67.0-138
(S) 1,2-Dichloroethane-d4	112			70.0-130

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

(LCS) R3463481-1 10/21/19 09:04 • (LCSD) R3463481-2 10/21/19 10:21

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	0.127	0.125	102	100	70.0-123			1.59	20
Ethylbenzene	0.125	0.121	0.125	96.8	100	74.0-126			3.25	20
Methyl tert-butyl ether	0.125	0.122	0.144	97.6	115	66.0-132			16.5	20
Toluene	0.125	0.101	0.0987	80.8	79.0	75.0-121			2.30	20
Xylenes, Total	0.375	0.364	0.359	97.1	95.7	72.0-127			1.38	20
(S) Toluene-d8				96.5	96.8	75.0-131				
(S) 4-Bromofluorobenzene				95.2	98.9	67.0-138				
(S) 1,2-Dichloroethane-d4				124	121	70.0-130				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3461924-1 10/17/19 01:44

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	73.3			18.0-148

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3461924-2 10/17/19 01:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	35.7	71.4	50.0-150	
(S) o-Terphenyl			72.5	18.0-148	

L1149159-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149159-01 10/17/19 16:31 • (MS) R3461924-3 10/17/19 16:44 • (MSD) R3461924-4 10/17/19 16:57

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	50.0	40.3	74.7	81.2	68.8	81.8	5	50.0-150			8.34	20
(S) o-Terphenyl					52.0	55.1		18.0-148				

Method Blank (MB)

(MB) R3462578-2 10/17/19 18:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.000600	0.00600
Acenaphthene	U		0.000600	0.00600
Acenaphthylene	U		0.000600	0.00600
Benzo(a)anthracene	U		0.000600	0.00600
Benzo(a)pyrene	U		0.000600	0.00600
Benzo(b)fluoranthene	U		0.000600	0.00600
Benzo(g,h,i)perylene	U		0.000600	0.00600
Benzo(k)fluoranthene	U		0.000600	0.00600
Chrysene	U		0.000600	0.00600
Dibenz(a,h)anthracene	U		0.000600	0.00600
Fluoranthene	U		0.000600	0.00600
Fluorene	U		0.000600	0.00600
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600
Naphthalene	U		0.00200	0.0200
Phenanthrene	U		0.000600	0.00600
Pyrene	U		0.000600	0.00600
1-Methylnaphthalene	U		0.00200	0.0200
2-Methylnaphthalene	U		0.00200	0.0200
2-Chloronaphthalene	U		0.00200	0.0200
(S) Nitrobenzene-d5	61.8			14.0-149
(S) 2-Fluorobiphenyl	69.8			34.0-125
(S) p-Terphenyl-d14	68.7			23.0-120

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Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Laboratory Control Sample (LCS)

(LCS) R3462578-1 10/17/19 18:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0603	75.4	50.0-126	
Acenaphthene	0.0800	0.0651	81.4	50.0-120	
Acenaphthylene	0.0800	0.0701	87.6	50.0-120	
Benzo(a)anthracene	0.0800	0.0593	74.1	45.0-120	
Benzo(a)pyrene	0.0800	0.0439	54.9	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0619	77.4	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0554	69.3	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0649	81.1	49.0-125	
Chrysene	0.0800	0.0585	73.1	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0589	73.6	47.0-125	
Fluoranthene	0.0800	0.0615	76.9	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3462578-1 10/17/19 18:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Fluorene	0.0800	0.0662	82.8	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0575	71.9	46.0-125	
Naphthalene	0.0800	0.0634	79.3	50.0-120	
Phenanthrene	0.0800	0.0653	81.6	47.0-120	
Pyrene	0.0800	0.0616	77.0	43.0-123	
1-Methylnaphthalene	0.0800	0.0660	82.5	51.0-121	
2-Methylnaphthalene	0.0800	0.0617	77.1	50.0-120	
2-Chloronaphthalene	0.0800	0.0648	81.0	50.0-120	
(S) Nitrobenzene-d5			76.1	14.0-149	
(S) 2-Fluorobiphenyl			88.0	34.0-125	
(S) p-Terphenyl-d14			81.3	23.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1149263-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149263-01 10/17/19 18:59 • (MS) R3462578-3 10/17/19 19:19 • (MSD) R3462578-4 10/17/19 19:40

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Anthracene	0.0800	ND	0.0618	0.0600	77.3	75.0	1	10.0-145			2.96	30
Acenaphthene	0.0800	ND	0.0627	0.0590	78.4	73.8	1	14.0-127			6.08	27
Acenaphthylene	0.0800	ND	0.0674	0.0638	84.3	79.8	1	21.0-124			5.49	25
Benzo(a)anthracene	0.0800	ND	0.0573	0.0546	71.6	68.3	1	10.0-139			4.83	30
Benzo(a)pyrene	0.0800	ND	0.0581	0.0552	72.6	69.0	1	10.0-141			5.12	31
Benzo(b)fluoranthene	0.0800	ND	0.0567	0.0531	70.9	66.4	1	10.0-140			6.56	36
Benzo(g,h,i)perylene	0.0800	ND	0.0593	0.0567	74.1	70.9	1	10.0-140			4.48	33
Benzo(k)fluoranthene	0.0800	ND	0.0621	0.0575	77.6	71.9	1	10.0-137			7.69	31
Chrysene	0.0800	ND	0.0560	0.0532	70.0	66.5	1	10.0-145			5.13	30
Dibenz(a,h)anthracene	0.0800	ND	0.0598	0.0569	74.8	71.1	1	10.0-132			4.97	31
Fluoranthene	0.0800	ND	0.0590	0.0551	73.8	68.9	1	10.0-153			6.84	33
Fluorene	0.0800	ND	0.0632	0.0598	79.0	74.8	1	11.0-130			5.53	29
Indeno(1,2,3-cd)pyrene	0.0800	ND	0.0591	0.0565	73.9	70.6	1	10.0-137			4.50	32
Naphthalene	0.0800	ND	0.0608	0.0569	76.0	71.1	1	10.0-135			6.63	27
Phenanthrene	0.0800	ND	0.0631	0.0598	78.9	74.8	1	10.0-144			5.37	31
Pyrene	0.0800	ND	0.0631	0.0613	78.9	76.6	1	10.0-148			2.89	35
1-Methylnaphthalene	0.0800	ND	0.0631	0.0592	78.9	74.0	1	10.0-142			6.38	28
2-Methylnaphthalene	0.0800	ND	0.0602	0.0564	75.3	70.5	1	10.0-137			6.52	28
2-Chloronaphthalene	0.0800	ND	0.0630	0.0593	78.8	74.1	1	29.0-120			6.05	24
(S) Nitrobenzene-d5					81.8	75.4		14.0-149				
(S) 2-Fluorobiphenyl					85.0	80.1		34.0-125				
(S) p-Terphenyl-d14					80.7	76.5		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.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.

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.



Entrada Consulting
Grand Junction

Billing Information:
Oxyco GT

Report to: Robert Stockton
Project Description: MWR 17-2
City/State Collected: Collbran, CO
Client Project #: MWR 17-2
Site/Facility ID #: MWR 17-2
P.O. #
Quote #
Rush? (Lab MUST Be Notified)
Same Day Five Day
Next Day 5 Day (Rad Only)
Two Day 10 Day (Rad Only)
Three Day
Date Results Needed
No. of Cntrs

Phone: (970) 640-0568
Fax: (970) 640-0568
Collected by (print): Robert Stockton
Collected by (signature):
Immediately Packed on Ice N Y X

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

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National Center for Testing & Innovation

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Mount Juliet, TN 37122
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Phone: 800-767-5859
Fax: 615-758-5859

L# L1149263
C233

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

Remarks Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
101019-MWR 17-2-E1 (24")	G	SS	24"	10/10/19	0845	3
101019-MWR 17-2-E3 (24")			24"		0920	3
101019-MWR 17-2-N2 (30")			30"		0930	3
101019-MWR 17-2-N2 (24")			24"		0935	3
101019-MWR 17-2-W2 (30")			30"		1135	3
101019-MWR 17-2-E1 (10')			10'		1345	3
101019-MWR 17-2-N4 (36")			30"		1200	3
101019-MWR 17-2-N5 (30")			24"		1205	3
101019-MWR 17-2-N3 (24")			24"		1325	3
101019-MWR 17-2-N1 (36")			36"		1420	3

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:
UPS FedEx Courier

Tracking # Fedex 45101663 1717

Relinquished by: (Signature) Date: 10/10/19 Time: 1630
Relinquished by: (Signature) Date: 10/10/19 Time: 1700
Relinquished by: (Signature) Date: Time:

Received by: (Signature) Trip Blank Received: Yes/No
Received by: (Signature) HCL / MeOH TBR
Received for lab by: (Signature) Temp: 4.6-3=4.3°C Bottles Received: 27
Date: 10/11/19 Time: 8:45

pH Temp
Flow Other

Sample Receipt Checklist
COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD SCREEN: <0.5 mR/hr
If preservation required by Login: Date/Time
Hold: Condition: NCF / OK