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National Center for Testing & Innovation

ANALYTICAL REPORT

August 26, 2019

Laramie Energy - Grand Junction, CO

Sample Delivery Group:	L1128905
Samples Received:	08/14/2019
Project Number:	
Description:	28-10 Loadout
Site:	28-10 LOADOUT
Report To:	Robert Stockton 760 Horizon Dr., Ste. 101 Grand Junction, CO 81506

Entire Report Reviewed By: Chris Ward

Chris Ward
Project Manager

28-10: POR 4' L1128905-01 Solid

Collected by: Robert Stockton | Collected date/time: 08/13/19 13:40 | Received date/time: 08/14/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1328566	1	08/20/19 09:31	08/20/19 09:31	CCE	Mt. Juliet, TN
Calculated Results	WG1329581	1	08/15/19 22:57	08/17/19 10:15	TRB	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1329434	1	08/15/19 17:37	08/16/19 17:10	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1330488	1	08/21/19 09:00	08/21/19 15:10	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1330972	1	08/19/19 15:00	08/19/19 17:33	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1329698	1	08/15/19 22:43	08/16/19 08:28	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1329581	1	08/15/19 22:57	08/17/19 10:15	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1331267	50	08/16/19 11:11	08/20/19 00:05	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1331202	1	08/19/19 20:51	08/20/19 10:54	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1331674	1	08/20/19 12:30	08/21/19 01:18	DMG	Mt. Juliet, TN

28-10: S1 10-14" L1128905-02 Solid

Collected by: Robert Stockton | Collected date/time: 08/13/19 14:35 | Received date/time: 08/14/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1328566	1	08/20/19 09:33	08/20/19 09:33	CCE	Mt. Juliet, TN
Calculated Results	WG1329581	1	08/15/19 22:57	08/17/19 10:24	TRB	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1329434	1	08/15/19 17:37	08/16/19 17:15	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1330488	1	08/21/19 09:00	08/21/19 15:10	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1330972	1	08/19/19 15:00	08/19/19 17:33	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1329698	1	08/15/19 22:43	08/16/19 08:52	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1329581	1	08/15/19 22:57	08/17/19 10:24	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1330770	1	08/16/19 11:11	08/18/19 18:23	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1331202	1	08/19/19 20:51	08/20/19 12:00	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1331674	1	08/20/19 12:30	08/21/19 05:53	DMG	Mt. Juliet, TN

28-10: S2 0-4" L1128905-03 Solid

Collected by: Robert Stockton | Collected date/time: 08/13/19 14:05 | Received date/time: 08/14/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1328566	1	08/20/19 09:36	08/20/19 09:36	CCE	Mt. Juliet, TN
Calculated Results	WG1329581	1	08/15/19 22:57	08/17/19 10:27	TRB	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1329434	1	08/15/19 17:37	08/16/19 17:15	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1330488	1	08/21/19 09:00	08/21/19 15:10	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1330972	1	08/19/19 15:00	08/19/19 17:33	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1329698	1	08/15/19 22:43	08/16/19 08:54	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1329581	1	08/15/19 22:57	08/17/19 10:27	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1330770	1	08/16/19 11:11	08/18/19 18:44	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1331202	10	08/19/19 20:51	08/21/19 14:00	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1331674	1	08/20/19 12:30	08/21/19 06:35	DMG	Mt. Juliet, TN

28-10: T1 0-3" L1128905-04 Solid

Collected by: Robert Stockton | Collected date/time: 08/13/19 14:20 | Received date/time: 08/14/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1328566	1	08/20/19 09:39	08/20/19 09:39	CCE	Mt. Juliet, TN
Calculated Results	WG1329581	1	08/15/19 22:57	08/17/19 10:30	TRB	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1329434	1	08/15/19 17:37	08/16/19 17:16	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1330488	1	08/21/19 09:00	08/21/19 15:10	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1330972	1	08/19/19 15:00	08/19/19 17:33	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1329698	1	08/15/19 22:43	08/16/19 08:57	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1329581	1	08/15/19 22:57	08/17/19 10:30	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1330770	1	08/16/19 11:11	08/18/19 19:04	DWR	Mt. Juliet, TN

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

28-10: T1 0-3" L1128905-04 Solid

Collected by: Robert Stockton
Collected date/time: 08/13/19 14:20
Received date/time: 08/14/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1331202	1	08/19/19 20:51	08/20/19 11:45	JDG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1331674	1	08/20/19 12:30	08/21/19 05:32	DMG	Mt. Juliet, TN

28-10: BGN L1128905-05 Solid

Collected by: Robert Stockton
Collected date/time: 08/13/19 14:30
Received date/time: 08/14/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1328566	1	08/20/19 09:41	08/20/19 09:41	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1334524	1	08/25/19 13:00	08/25/19 15:30	BAM	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1329581	1	08/15/19 22:57	08/17/19 10:33	TRB	Mt. Juliet, TN

28-10: BGS L1128905-06 Solid

Collected by: Robert Stockton
Collected date/time: 08/13/19 14:35
Received date/time: 08/14/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1328566	1	08/20/19 09:44	08/20/19 09:44	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1334524	1	08/25/19 13:00	08/25/19 15:30	BAM	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1329581	1	08/15/19 22:57	08/17/19 10:35	TRB	Mt. Juliet, TN

28-10:SI 0-8" L1128905-07 Solid

Collected by: Robert Stockton
Collected date/time: 08/13/19 13:55
Received date/time: 08/14/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1328566	1	08/20/19 09:47	08/20/19 09:47	CCE	Mt. Juliet, TN
Calculated Results	WG1330042	1	08/16/19 13:28	08/16/19 17:16	ANP	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1329434	1	08/15/19 17:37	08/16/19 17:16	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1330488	1	08/21/19 09:00	08/21/19 15:10	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1330972	1	08/19/19 15:00	08/19/19 17:33	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1330075	1	08/19/19 12:18	08/19/19 19:36	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1330042	1	08/16/19 13:28	08/16/19 14:30	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1330770	1	08/16/19 11:11	08/18/19 19:36	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1330908	1	08/19/19 09:15	08/22/19 01:57	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1331674	1	08/20/19 12:30	08/21/19 05:11	DMG	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

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	18.6		1	08/20/2019 09:31	WG1328566

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	14.4		1.00	1	08/17/2019 10:15	WG1329581

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	08/16/2019 17:10	WG1329434

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.93	T8	1	08/21/2019 15:10	WG1330488

Sample Narrative:
L1128905-01 WG1330488: 7.93 at 23.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	4140		10.0	1	08/19/2019 17:33	WG1330972

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	08/16/2019 08:28	WG1329698

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.02		2.00	1	08/17/2019 10:15	WG1329581
Barium	293		0.500	1	08/17/2019 10:15	WG1329581
Cadmium	ND		0.500	1	08/17/2019 10:15	WG1329581
Chromium	14.4		1.00	1	08/17/2019 10:15	WG1329581
Copper	14.9		2.00	1	08/17/2019 10:15	WG1329581
Lead	9.61		0.500	1	08/17/2019 10:15	WG1329581
Nickel	13.5		2.00	1	08/17/2019 10:15	WG1329581
Selenium	ND		2.00	1	08/17/2019 10:15	WG1329581
Silver	ND		1.00	1	08/17/2019 10:15	WG1329581
Zinc	44.8		5.00	1	08/17/2019 10:15	WG1329581

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	1.11		0.0250	50	08/20/2019 00:05	WG1331267
Toluene	3.60		0.250	50	08/20/2019 00:05	WG1331267
Ethylbenzene	0.283		0.0250	50	08/20/2019 00:05	WG1331267
Total Xylene	4.99		0.0750	50	08/20/2019 00:05	WG1331267
TPH (GC/FID) Low Fraction	85.1		5.00	50	08/20/2019 00:05	WG1331267

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*89.6*		*77.0-120*		*08/20/2019 00:05*	WG1331267
(S) a,a,a-Trifluorotoluene(PID)	*95.0*		*72.0-128*		*08/20/2019 00:05*	WG1331267

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	39.4		4.00	1	08/20/2019 10:54	WG1331202
(S) o-Terphenyl	*59.8*		*18.0-148*		*08/20/2019 10:54*	WG1331202

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	08/21/2019 01:18	WG1331674
Acenaphthene	ND		0.00600	1	08/21/2019 01:18	WG1331674
Acenaphthylene	ND		0.00600	1	08/21/2019 01:18	WG1331674
Benzo(a)anthracene	ND		0.00600	1	08/21/2019 01:18	WG1331674
Benzo(a)pyrene	ND		0.00600	1	08/21/2019 01:18	WG1331674
Benzo(b)fluoranthene	ND		0.00600	1	08/21/2019 01:18	WG1331674
Benzo(g,h,i)perylene	ND		0.00600	1	08/21/2019 01:18	WG1331674
Benzo(k)fluoranthene	ND		0.00600	1	08/21/2019 01:18	WG1331674
Chrysene	ND		0.00600	1	08/21/2019 01:18	WG1331674
Dibenz(a,h)anthracene	ND		0.00600	1	08/21/2019 01:18	WG1331674
Fluoranthene	ND		0.00600	1	08/21/2019 01:18	WG1331674
Fluorene	ND		0.00600	1	08/21/2019 01:18	WG1331674
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/21/2019 01:18	WG1331674
Naphthalene	0.0200		0.0200	1	08/21/2019 01:18	WG1331674
Phenanthrene	ND		0.00600	1	08/21/2019 01:18	WG1331674
Pyrene	ND		0.00600	1	08/21/2019 01:18	WG1331674
1-Methylnaphthalene	ND		0.0200	1	08/21/2019 01:18	WG1331674
2-Methylnaphthalene	0.0366		0.0200	1	08/21/2019 01:18	WG1331674
2-Chloronaphthalene	ND		0.0200	1	08/21/2019 01:18	WG1331674
(S) p-Terphenyl-d14	*47.0*		*23.0-120*		*08/21/2019 01:18*	WG1331674
(S) Nitrobenzene-d5	*57.9*		*14.0-149*		*08/21/2019 01:18*	WG1331674
(S) 2-Fluorobiphenyl	*49.2*		*34.0-125*		*08/21/2019 01:18*	WG1331674

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	7.36		1	08/20/2019 09:33	WG1328566

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	11.6		1.00	1	08/17/2019 10:24	WG1329581

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	08/16/2019 17:15	WG1329434

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.79	T8	1	08/21/2019 15:10	WG1330488

Sample Narrative:
L1128905-02 WG1330488: 8.79 at 24.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	381		10.0	1	08/19/2019 17:33	WG1330972

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0306		0.0300	1	08/16/2019 08:52	WG1329698

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.66		2.00	1	08/17/2019 10:24	WG1329581
Barium	415		0.500	1	08/17/2019 10:24	WG1329581
Cadmium	1.19		0.500	1	08/17/2019 10:24	WG1329581
Chromium	11.6		1.00	1	08/17/2019 10:24	WG1329581
Copper	13.3		2.00	1	08/17/2019 10:24	WG1329581
Lead	11.7		0.500	1	08/17/2019 10:24	WG1329581
Nickel	11.3		2.00	1	08/17/2019 10:24	WG1329581
Selenium	ND		2.00	1	08/17/2019 10:24	WG1329581
Silver	ND		1.00	1	08/17/2019 10:24	WG1329581
Zinc	39.7		5.00	1	08/17/2019 10:24	WG1329581

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00443		0.000500	1	08/18/2019 18:23	WG1330770
Toluene	0.00627		0.00500	1	08/18/2019 18:23	WG1330770
Ethylbenzene	0.000969	B	0.000500	1	08/18/2019 18:23	WG1330770
Total Xylene	0.00470		0.00150	1	08/18/2019 18:23	WG1330770
TPH (GC/FID) Low Fraction	0.182	B	0.100	1	08/18/2019 18:23	WG1330770

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*90.3*		*77.0-120*		*08/18/2019 18:23*	WG1330770
(S) a,a,a-Trifluorotoluene(PID)	*92.1*		*72.0-128*		*08/18/2019 18:23*	WG1330770

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	80.8		4.00	1	08/20/2019 12:00	WG1331202
(S) o-Terphenyl	*127*		*18.0-148*		*08/20/2019 12:00*	WG1331202

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	08/21/2019 05:53	WG1331674
Acenaphthene	ND		0.00600	1	08/21/2019 05:53	WG1331674
Acenaphthylene	ND		0.00600	1	08/21/2019 05:53	WG1331674
Benzo(a)anthracene	ND		0.00600	1	08/21/2019 05:53	WG1331674
Benzo(a)pyrene	ND		0.00600	1	08/21/2019 05:53	WG1331674
Benzo(b)fluoranthene	ND		0.00600	1	08/21/2019 05:53	WG1331674
Benzo(g,h,i)perylene	ND		0.00600	1	08/21/2019 05:53	WG1331674
Benzo(k)fluoranthene	ND		0.00600	1	08/21/2019 05:53	WG1331674
Chrysene	ND		0.00600	1	08/21/2019 05:53	WG1331674
Dibenz(a,h)anthracene	ND		0.00600	1	08/21/2019 05:53	WG1331674
Fluoranthene	ND		0.00600	1	08/21/2019 05:53	WG1331674
Fluorene	ND		0.00600	1	08/21/2019 05:53	WG1331674
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/21/2019 05:53	WG1331674
Naphthalene	ND		0.0200	1	08/21/2019 05:53	WG1331674
Phenanthrene	ND		0.00600	1	08/21/2019 05:53	WG1331674
Pyrene	ND		0.00600	1	08/21/2019 05:53	WG1331674
1-Methylnaphthalene	ND		0.0200	1	08/21/2019 05:53	WG1331674
2-Methylnaphthalene	ND		0.0200	1	08/21/2019 05:53	WG1331674
2-Chloronaphthalene	ND		0.0200	1	08/21/2019 05:53	WG1331674
(S) p-Terphenyl-d14	*80.5*		*23.0-120*		*08/21/2019 05:53*	WG1331674
(S) Nitrobenzene-d5	*73.7*		*14.0-149*		*08/21/2019 05:53*	WG1331674
(S) 2-Fluorobiphenyl	*80.1*		*34.0-125*		*08/21/2019 05:53*	WG1331674

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	9.03		1	08/20/2019 09:36	WG1328566

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	20.2		1.00	1	08/17/2019 10:27	WG1329581

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	08/16/2019 17:15	WG1329434

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.01	J3 T8	1	08/21/2019 15:10	WG1330488

Sample Narrative:

L1128905-03 WG1330488: 8.01 at 23.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2480		10.0	1	08/19/2019 17:33	WG1330972

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	08/16/2019 08:54	WG1329698

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	13.2		2.00	1	08/17/2019 10:27	WG1329581
Barium	393		0.500	1	08/17/2019 10:27	WG1329581
Cadmium	0.563		0.500	1	08/17/2019 10:27	WG1329581
Chromium	20.2		1.00	1	08/17/2019 10:27	WG1329581
Copper	21.6		2.00	1	08/17/2019 10:27	WG1329581
Lead	12.3		0.500	1	08/17/2019 10:27	WG1329581
Nickel	17.4		2.00	1	08/17/2019 10:27	WG1329581
Selenium	ND		2.00	1	08/17/2019 10:27	WG1329581
Silver	ND		1.00	1	08/17/2019 10:27	WG1329581
Zinc	54.6		5.00	1	08/17/2019 10:27	WG1329581

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00420		0.000500	1	08/18/2019 18:44	WG1330770
Toluene	0.00859		0.00500	1	08/18/2019 18:44	WG1330770
Ethylbenzene	0.00175	B	0.000500	1	08/18/2019 18:44	WG1330770
Total Xylene	0.00592		0.00150	1	08/18/2019 18:44	WG1330770
TPH (GC/FID) Low Fraction	0.171	B	0.100	1	08/18/2019 18:44	WG1330770

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*88.7*		*77.0-120*		*08/18/2019 18:44*	WG1330770
(S) a,a,a-Trifluorotoluene(PID)	*90.9*		*72.0-128*		*08/18/2019 18:44*	WG1330770

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	249		40.0	10	08/21/2019 14:00	WG1331202
(S) o-Terphenyl	*204*	J1	*18.0-148*		*08/21/2019 14:00*	WG1331202

Sample Narrative:

L1128905-03 WG1331202: 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	08/21/2019 06:35	WG1331674
Acenaphthene	ND		0.00600	1	08/21/2019 06:35	WG1331674
Acenaphthylene	ND		0.00600	1	08/21/2019 06:35	WG1331674
Benzo(a)anthracene	ND		0.00600	1	08/21/2019 06:35	WG1331674
Benzo(a)pyrene	ND		0.00600	1	08/21/2019 06:35	WG1331674
Benzo(b)fluoranthene	ND		0.00600	1	08/21/2019 06:35	WG1331674
Benzo(g,h,i)perylene	ND		0.00600	1	08/21/2019 06:35	WG1331674
Benzo(k)fluoranthene	ND		0.00600	1	08/21/2019 06:35	WG1331674
Chrysene	ND		0.00600	1	08/21/2019 06:35	WG1331674
Dibenz(a,h)anthracene	ND		0.00600	1	08/21/2019 06:35	WG1331674
Fluoranthene	ND		0.00600	1	08/21/2019 06:35	WG1331674
Fluorene	ND		0.00600	1	08/21/2019 06:35	WG1331674
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/21/2019 06:35	WG1331674
Naphthalene	ND		0.0200	1	08/21/2019 06:35	WG1331674
Phenanthrene	ND		0.00600	1	08/21/2019 06:35	WG1331674
Pyrene	ND		0.00600	1	08/21/2019 06:35	WG1331674
1-Methylnaphthalene	ND		0.0200	1	08/21/2019 06:35	WG1331674
2-Methylnaphthalene	ND		0.0200	1	08/21/2019 06:35	WG1331674
2-Chloronaphthalene	ND		0.0200	1	08/21/2019 06:35	WG1331674
(S) p-Terphenyl-d14	*81.0*		*23.0-120*		*08/21/2019 06:35*	WG1331674
(S) Nitrobenzene-d5	*62.0*		*14.0-149*		*08/21/2019 06:35*	WG1331674
(S) 2-Fluorobiphenyl	*76.3*		*34.0-125*		*08/21/2019 06:35*	WG1331674

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	10.7		1	08/20/2019 09:39	WG1328566

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	11.1		1.00	1	08/17/2019 10:30	WG1329581

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	08/16/2019 17:16	WG1329434

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.21	T8	1	08/21/2019 15:10	WG1330488

Sample Narrative:

L1128905-04 WG1330488: 8.21 at 23.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3070		10.0	1	08/19/2019 17:33	WG1330972

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0330		0.0300	1	08/16/2019 08:57	WG1329698

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.33		2.00	1	08/17/2019 10:30	WG1329581
Barium	330		0.500	1	08/17/2019 10:30	WG1329581
Cadmium	ND		0.500	1	08/17/2019 10:30	WG1329581
Chromium	11.1		1.00	1	08/17/2019 10:30	WG1329581
Copper	11.6		2.00	1	08/17/2019 10:30	WG1329581
Lead	8.72		0.500	1	08/17/2019 10:30	WG1329581
Nickel	11.0		2.00	1	08/17/2019 10:30	WG1329581
Selenium	ND		2.00	1	08/17/2019 10:30	WG1329581
Silver	ND		1.00	1	08/17/2019 10:30	WG1329581
Zinc	39.1		5.00	1	08/17/2019 10:30	WG1329581

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00226		0.000500	1	08/18/2019 19:04	WG1330770
Toluene	ND		0.00500	1	08/18/2019 19:04	WG1330770
Ethylbenzene	0.00195		0.000500	1	08/18/2019 19:04	WG1330770
Total Xylene	0.00250	B	0.00150	1	08/18/2019 19:04	WG1330770
TPH (GC/FID) Low Fraction	0.159	B	0.100	1	08/18/2019 19:04	WG1330770

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*89.2*		*77.0-120*		*08/18/2019 19:04*	WG1330770
(S) a,a,a-Trifluorotoluene(PID)	*91.8*		*72.0-128*		*08/18/2019 19:04*	WG1330770

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	81.2		4.00	1	08/20/2019 11:45	WG1331202
(S) o-Terphenyl	*106*		*18.0-148*		*08/20/2019 11:45*	WG1331202

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	08/21/2019 05:32	WG1331674
Acenaphthene	ND		0.00600	1	08/21/2019 05:32	WG1331674
Acenaphthylene	ND		0.00600	1	08/21/2019 05:32	WG1331674
Benzo(a)anthracene	ND		0.00600	1	08/21/2019 05:32	WG1331674
Benzo(a)pyrene	ND		0.00600	1	08/21/2019 05:32	WG1331674
Benzo(b)fluoranthene	ND		0.00600	1	08/21/2019 05:32	WG1331674
Benzo(g,h,i)perylene	ND		0.00600	1	08/21/2019 05:32	WG1331674
Benzo(k)fluoranthene	ND		0.00600	1	08/21/2019 05:32	WG1331674
Chrysene	ND		0.00600	1	08/21/2019 05:32	WG1331674
Dibenz(a,h)anthracene	ND		0.00600	1	08/21/2019 05:32	WG1331674
Fluoranthene	ND		0.00600	1	08/21/2019 05:32	WG1331674
Fluorene	ND		0.00600	1	08/21/2019 05:32	WG1331674
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/21/2019 05:32	WG1331674
Naphthalene	ND		0.0200	1	08/21/2019 05:32	WG1331674
Phenanthrene	ND		0.00600	1	08/21/2019 05:32	WG1331674
Pyrene	ND		0.00600	1	08/21/2019 05:32	WG1331674
1-Methylnaphthalene	ND		0.0200	1	08/21/2019 05:32	WG1331674
2-Methylnaphthalene	ND		0.0200	1	08/21/2019 05:32	WG1331674
2-Chloronaphthalene	ND		0.0200	1	08/21/2019 05:32	WG1331674
(S) p-Terphenyl-d14	*82.1*		*23.0-120*		*08/21/2019 05:32*	WG1331674
(S) Nitrobenzene-d5	*76.0*		*14.0-149*		*08/21/2019 05:32*	WG1331674
(S) 2-Fluorobiphenyl	*82.1*		*34.0-125*		*08/21/2019 05:32*	WG1331674

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.03		1	08/20/2019 09:41	WG1328566

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	293		10.0	1	08/25/2019 15:30	WG1334524

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.98		2.00	1	08/17/2019 10:33	WG1329581

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.319		1	08/20/2019 09:44	WG1328566

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	203		10.0	1	08/25/2019 15:30	WG1334524

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.87		2.00	1	08/17/2019 10:35	WG1329581

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	14.5		1	08/20/2019 09:47	WG1328566

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	12.3		1.00	1	08/16/2019 17:16	WG1330042

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	08/16/2019 17:16	WG1329434

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.28	T8	1	08/21/2019 15:10	WG1330488

Sample Narrative:

L1128905-07 WG1330488: 8.28 at 24.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	3640		10.0	1	08/19/2019 17:33	WG1330972

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	08/19/2019 19:36	WG1330075

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.56		2.00	1	08/16/2019 14:30	WG1330042
Barium	382	J6 O1	0.500	1	08/16/2019 14:30	WG1330042
Cadmium	ND		0.500	1	08/16/2019 14:30	WG1330042
Chromium	12.3	O1	1.00	1	08/16/2019 14:30	WG1330042
Copper	15.8		2.00	1	08/16/2019 14:30	WG1330042
Lead	10.9		0.500	1	08/16/2019 14:30	WG1330042
Nickel	14.1		2.00	1	08/16/2019 14:30	WG1330042
Selenium	ND		2.00	1	08/16/2019 14:30	WG1330042
Silver	ND		1.00	1	08/16/2019 14:30	WG1330042
Zinc	46.1	O1	5.00	1	08/16/2019 14:30	WG1330042

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.0157		0.000500	1	08/18/2019 19:36	WG1330770
Toluene	0.0300		0.00500	1	08/18/2019 19:36	WG1330770
Ethylbenzene	0.00348		0.000500	1	08/18/2019 19:36	WG1330770
Total Xylene	0.0160		0.00150	1	08/18/2019 19:36	WG1330770
TPH (GC/FID) Low Fraction	0.434		0.100	1	08/18/2019 19:36	WG1330770

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	*89.0*		*77.0-120*		*08/18/2019 19:36*	WG1330770
(S) a,a,a-Trifluorotoluene(PID)	*91.5*		*72.0-128*		*08/18/2019 19:36*	WG1330770

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	28.8		4.00	1	08/22/2019 01:57	WG1330908
(S) o-Terphenyl	*80.8*		*18.0-148*		*08/22/2019 01:57*	WG1330908

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	08/21/2019 05:11	WG1331674
Acenaphthene	ND		0.00600	1	08/21/2019 05:11	WG1331674
Acenaphthylene	ND		0.00600	1	08/21/2019 05:11	WG1331674
Benzo(a)anthracene	ND		0.00600	1	08/21/2019 05:11	WG1331674
Benzo(a)pyrene	ND		0.00600	1	08/21/2019 05:11	WG1331674
Benzo(b)fluoranthene	ND		0.00600	1	08/21/2019 05:11	WG1331674
Benzo(g,h,i)perylene	ND		0.00600	1	08/21/2019 05:11	WG1331674
Benzo(k)fluoranthene	ND		0.00600	1	08/21/2019 05:11	WG1331674
Chrysene	ND		0.00600	1	08/21/2019 05:11	WG1331674
Dibenz(a,h)anthracene	ND		0.00600	1	08/21/2019 05:11	WG1331674
Fluoranthene	ND		0.00600	1	08/21/2019 05:11	WG1331674
Fluorene	ND		0.00600	1	08/21/2019 05:11	WG1331674
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/21/2019 05:11	WG1331674
Naphthalene	ND		0.0200	1	08/21/2019 05:11	WG1331674
Phenanthrene	ND		0.00600	1	08/21/2019 05:11	WG1331674
Pyrene	ND		0.00600	1	08/21/2019 05:11	WG1331674
1-Methylnaphthalene	ND		0.0200	1	08/21/2019 05:11	WG1331674
2-Methylnaphthalene	ND		0.0200	1	08/21/2019 05:11	WG1331674
2-Chloronaphthalene	ND		0.0200	1	08/21/2019 05:11	WG1331674
(S) p-Terphenyl-d14	*72.6*		*23.0-120*		*08/21/2019 05:11*	WG1331674
(S) Nitrobenzene-d5	*72.0*		*14.0-149*		*08/21/2019 05:11*	WG1331674
(S) 2-Fluorobiphenyl	*75.5*		*34.0-125*		*08/21/2019 05:11*	WG1331674

Method Blank (MB)

(MB) R3441346-1 08/16/19 17:03

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

L1125100-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1125100-02 08/16/19 17:06 • (DUP) R3441346-3 08/16/19 17:09

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

L1129171-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1129171-07 08/16/19 17:28 • (DUP) R3441346-8 08/16/19 17:43

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

Laboratory Control Sample (LCS)

(LCS) R3441346-2 08/16/19 17:05

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium,Hexavalent	24.0	24.8	103	80.0-120	

L1128369-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1128369-01 08/16/19 17:06 • (MS) R3441346-4 08/16/19 17:12 • (MSD) R3441346-5 08/16/19 17:13

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	26.1	ND	19.2	19.1	73.6	73.0	1	75.0-125	J6	J6	0.750	20

L1128369-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1128369-01 08/16/19 17:06 • (MS) R3441346-6 08/16/19 17:13

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chromium,Hexavalent	946	ND	969	102	50	75.0-125	

L1128905-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1128905-03 08/21/19 15:10 • (DUP) R3442758-2 08/21/19 15:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	8.01	8.11	1	1.24	J3	1

Sample Narrative:

OS: 8.01 at 23.9C

DUP: 8.11 at 23.8C

L1129454-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1129454-04 08/21/19 15:10 • (DUP) R3442758-3 08/21/19 15:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.35	7.44	1	1.22	J3	1

Sample Narrative:

OS: 7.35 at 24.3C

DUP: 7.44 at 24.3C

Laboratory Control Sample (LCS)

(LCS) R3442758-1 08/21/19 15:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.94	99.4	99.0-101	

Sample Narrative:

LCS: 9.94 at 23.8C

Method Blank (MB)

(MB) R3441938-1 08/19/19 17:33

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

L1128452-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1128452-02 08/19/19 17:33 • (DUP) R3441938-3 08/19/19 17:33

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	131	129	1	1.77		20

L1129591-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1129591-01 08/19/19 17:33 • (DUP) R3441938-4 08/19/19 17:33

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1920	1920	1	0.313		20

Laboratory Control Sample (LCS)

(LCS) R3441938-2 08/19/19 17:33

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	393	385	98.0	85.0-115	

Method Blank (MB)

(MB) R3443995-1 08/25/19 15:30

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

L1128905-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1128905-05 08/25/19 15:30 • (DUP) R3443995-3 08/25/19 15:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	293	293	1	0.0341		20

Laboratory Control Sample (LCS)

(LCS) R3443995-2 08/25/19 15:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	umhos/cm	umhos/cm	%	%	
Specific Conductance	393	393	100	85.0-115	

Method Blank (MB)

(MB) R3441072-1 08/16/19 08:21

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

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

(LCS) R3441072-2 08/16/19 08:23 • (LCSD) R3441072-3 08/16/19 08:26

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Mercury	0.500	0.518	0.506	104	101	80.0-120			2.21	20

L1128905-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1128905-01 08/16/19 08:28 • (MS) R3441072-4 08/16/19 08:30 • (MSD) R3441072-5 08/16/19 08:33

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.500	ND	0.498	0.489	94.3	92.4	1	75.0-125			1.97	20

Method Blank (MB)

(MB) R3441960-1 08/19/19 19:21

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

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

(LCS) R3441960-2 08/19/19 19:24 • (LCSD) R3441960-3 08/19/19 19:26

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 %
Mercury	0.500	0.450	0.442	89.9	88.4	80.0-120			1.67	20

L1129315-31 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1129315-31 08/19/19 19:28 • (MS) R3441960-4 08/19/19 19:31 • (MSD) R3441960-5 08/19/19 19:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.500	ND	0.468	0.444	92.0	87.1	1	75.0-125			5.37	20

Method Blank (MB)

(MB) R3441410-1 08/17/19 09:51

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.404	1.75
Barium	U		0.149	0.439
Cadmium	U		0.0614	0.439
Chromium	U		0.123	0.877
Copper	U		0.465	1.75
Lead	U		0.167	0.439
Nickel	U		0.430	1.75
Selenium	U		0.544	1.75
Silver	U		0.105	0.877
Zinc	0.641	J	0.518	4.39

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

(LCS) R3441410-2 08/17/19 09:54 • (LCSD) R3441410-3 08/17/19 09:56

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	91.2	92.3	91.2	92.3	80.0-120			1.20	20
Barium	100	102	103	102	103	80.0-120			1.09	20
Cadmium	100	94.9	95.9	94.9	95.9	80.0-120			1.08	20
Chromium	100	95.3	95.0	95.3	95.0	80.0-120			0.290	20
Copper	100	98.9	98.9	98.9	98.9	80.0-120			0.00483	20
Lead	100	93.0	94.2	93.0	94.2	80.0-120			1.33	20
Nickel	100	94.8	96.0	94.8	96.0	80.0-120			1.25	20
Selenium	100	91.3	92.5	91.3	92.5	80.0-120			1.27	20
Silver	20.0	18.2	18.1	90.9	90.6	80.0-120			0.350	20
Zinc	100	92.2	93.1	92.2	93.1	80.0-120			0.918	20

L1128834-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1128834-01 08/17/19 09:59 • (MS) R3441410-6 08/17/19 10:07 • (MSD) R3441410-7 08/17/19 10:10

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	ND	97.4	98.1	96.4	97.1	1	75.0-125			0.795	20
Barium	100	61.6	172	182	110	120	1	75.0-125			5.70	20
Cadmium	100	ND	101	101	101	101	1	75.0-125			0.340	20
Chromium	100	12.4	111	110	98.5	97.6	1	75.0-125			0.752	20
Copper	100	17.1	125	128	108	111	1	75.0-125			2.46	20
Lead	100	5.94	106	107	100	101	1	75.0-125			1.04	20
Nickel	100	9.91	111	112	101	102	1	75.0-125			0.807	20

L1128834-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1128834-01 08/17/19 09:59 • (MS) R3441410-6 08/17/19 10:07 • (MSD) R3441410-7 08/17/19 10:10

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	ND	97.6	97.0	97.6	97.0	1	75.0-125			0.647	20
Silver	20.0	ND	19.1	19.2	95.6	96.0	1	75.0-125			0.424	20
Zinc	100	41.3	138	142	97.1	101	1	75.0-125			2.50	20

Method Blank (MB)

(MB) R3441271-1 08/16/19 14:21

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	U		0.120	1.00
Zinc	U		0.590	5.00

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

(LCS) R3441271-2 08/16/19 14:25 • (LCSD) R3441271-3 08/16/19 14:28

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	93.5	94.7	93.5	94.7	80.0-120			1.30	20
Barium	100	104	105	104	105	80.0-120			0.959	20
Cadmium	100	97.5	98.5	97.5	98.5	80.0-120			0.944	20
Chromium	100	98.2	99.6	98.2	99.6	80.0-120			1.49	20
Copper	100	99.6	101	99.6	101	80.0-120			1.73	20
Lead	100	96.2	96.9	96.2	96.9	80.0-120			0.742	20
Nickel	100	97.6	98.5	97.6	98.5	80.0-120			0.904	20
Selenium	100	93.2	94.4	93.2	94.4	80.0-120			1.24	20
Silver	20.0	18.4	18.6	91.8	92.8	80.0-120			1.05	20
Zinc	100	95.0	95.5	95.0	95.5	80.0-120			0.571	20

L1128905-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1128905-07 08/16/19 14:30 • (MS) R3441271-6 08/16/19 14:38 • (MSD) R3441271-7 08/16/19 14:41

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	7.56	97.8	93.3	90.2	85.7	1	75.0-125			4.72	20
Barium	100	382	423	400	41.7	18.3	1	75.0-125	J6	J6	5.70	20
Cadmium	100	ND	94.2	91.9	93.8	91.5	1	75.0-125			2.54	20
Chromium	100	12.3	96.9	95.6	84.6	83.3	1	75.0-125			1.40	20
Copper	100	15.8	111	108	95.4	92.4	1	75.0-125			2.78	20
Lead	100	10.9	101	98.6	89.9	87.7	1	75.0-125			2.20	20
Nickel	100	14.1	104	102	90.0	87.9	1	75.0-125			2.04	20

L1128905-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1128905-07 08/16/19 14:30 • (MS) R3441271-6 08/16/19 14:38 • (MSD) R3441271-7 08/16/19 14:41

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	ND	89.2	87.8	88.1	86.7	1	75.0-125			1.57	20
Silver	20.0	ND	17.3	16.8	86.6	84.1	1	75.0-125			2.92	20
Zinc	100	46.1	129	125	82.9	78.5	1	75.0-125			3.42	20

Method Blank (MB)

(MB) R3441909-3 08/18/19 12:14

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000191	J	0.000150	0.00500
Ethylbenzene	0.000179	J	0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0284	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*92.3*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*94.3*			*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3441909-1 08/18/19 11:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0453	90.6	76.0-121	
Toluene	0.0500	0.0425	85.1	80.0-120	
Ethylbenzene	0.0500	0.0444	88.9	80.0-124	
Total Xylene	0.150	0.132	88.1	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			*92.9*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*94.4*	*72.0-128*	

Laboratory Control Sample (LCS)

(LCS) R3441909-2 08/18/19 11:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.27	95.8	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*102*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*101*	*72.0-128*	

L1128985-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1128985-02 08/18/19 20:17 • (MS) R3441909-4 08/18/19 20:58 • (MSD) R3441909-5 08/18/19 21:19

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	3.61	7.10	5.77	69.9	43.3	100	10.0-155			20.7	32
Toluene	0.0500	24.7	24.3	20.2	0.000	0.000	100	10.0-160	E V	V	18.7	34
Ethylbenzene	0.0500	11.4	13.7	11.1	46.2	0.000	100	10.0-160		J6	20.9	32
Total Xylene	0.150	68.6	70.3	57.3	11.3	0.000	100	10.0-160	E J6 V	J6 V	20.4	32
(S) a,a,a-Trifluorotoluene(FID)					*120*	*116*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*121*	*118*		*72.0-128*				

Sample Narrative:

OS: Surrogate failure due to matrix interference

L1128985-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1128985-02 08/18/19 20:17 • (MS) R3441909-6 08/18/19 21:39 • (MSD) R3441909-7 08/18/19 22:00

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 %
TPH (GC/FID) Low Fraction	5.50	1010	965	1140	0.000	22.9	100	10.0-151	J6	E	16.4	28
(S) a,a,a-Trifluorotoluene(FID)					*122*	*129*		*77.0-120*	J1	J1		
(S) a,a,a-Trifluorotoluene(PID)					*124*	*133*		*72.0-128*		J1		

Sample Narrative:

OS: Surrogate failure due to matrix interference

Method Blank (MB)

(MB) R3442286-3 08/19/19 21:00

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000199	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*94.2*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*97.2*			*72.0-128*

Laboratory Control Sample (LCS)

(LCS) R3442286-1 08/19/19 18:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.79	105	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*107*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*107*	*72.0-128*	

Laboratory Control Sample (LCS)

(LCS) R3442286-2 08/19/19 20:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0506	101	76.0-121	
Toluene	0.0500	0.0500	99.9	80.0-120	
Ethylbenzene	0.0500	0.0520	104	80.0-124	
Total Xylene	0.150	0.154	103	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			*94.2*	*77.0-120*	
(S) a,a,a-Trifluorotoluene(PID)			*95.9*	*72.0-128*	

Method Blank (MB)

(MB) R3442596-1 08/21/19 06:59

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	*92.0*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3442596-2 08/21/19 07:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	40.0	80.0	50.0-150	
(S) o-Terphenyl			*110*	*18.0-148*	

L1128960-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1128960-08 08/21/19 21:42 • (MS) R3442596-3 08/21/19 21:58 • (MSD) R3442596-4 08/21/19 22:14

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	56.6	7.68	57.0	61.8	87.2	95.8	1	50.0-150			7.98	20
(S) o-Terphenyl					*93.7*	*102*		*18.0-148*				

Method Blank (MB)

(MB) R3442037-1 08/20/19 06:31

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	*75.5*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3442037-2 08/20/19 06:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	41.9	83.8	50.0-150	
(S) o-Terphenyl			*101*	*18.0-148*	

L1128970-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1128970-05 08/20/19 07:30 • (MS) R3442037-3 08/20/19 07:45 • (MSD) R3442037-4 08/20/19 07:58

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) High Fraction	66.2	ND	36.8	40.8	55.6	61.6	1	50.0-150			10.2	20
(S) o-Terphenyl					*68.9*	*68.2*		*18.0-148*				

Method Blank (MB)

(MB) R3442481-2 08/20/19 23:11

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	*68.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*74.5*			*34.0-125*
(S) p-Terphenyl-d14	*71.0*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3442481-1 08/20/19 22:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0596	74.5	50.0-126	
Acenaphthene	0.0800	0.0591	73.9	50.0-120	
Acenaphthylene	0.0800	0.0619	77.4	50.0-120	
Benzo(a)anthracene	0.0800	0.0592	74.0	45.0-120	
Benzo(a)pyrene	0.0800	0.0490	61.3	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0569	71.1	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0579	72.4	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0608	76.0	49.0-125	
Chrysene	0.0800	0.0595	74.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0588	73.5	47.0-125	
Fluoranthene	0.0800	0.0661	82.6	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3442481-1 08/20/19 22:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0625	78.1	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0592	74.0	46.0-125	
Naphthalene	0.0800	0.0571	71.4	50.0-120	
Phenanthrene	0.0800	0.0594	74.3	47.0-120	
Pyrene	0.0800	0.0558	69.8	43.0-123	
1-Methylnaphthalene	0.0800	0.0644	80.5	51.0-121	
2-Methylnaphthalene	0.0800	0.0609	76.1	50.0-120	
2-Chloronaphthalene	0.0800	0.0580	72.5	50.0-120	
(S) Nitrobenzene-d5			*72.9*	*14.0-149*	
(S) 2-Fluorobiphenyl			*77.5*	*34.0-125*	
(S) p-Terphenyl-d14			*76.3*	*23.0-120*	

L1129324-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1129324-01 08/21/19 00:14 • (MS) R3442481-3 08/21/19 00:35 • (MSD) R3442481-4 08/21/19 00:57

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0968	ND	0.0715	0.0655	73.9	67.6	1	10.0-145			8.83	30
Acenaphthene	0.0968	ND	0.0698	0.0643	72.1	66.4	1	14.0-127			8.30	27
Acenaphthylene	0.0968	ND	0.0727	0.0669	75.1	69.1	1	21.0-124			8.32	25
Benzo(a)anthracene	0.0968	ND	0.0692	0.0650	71.5	67.1	1	10.0-139			6.31	30
Benzo(a)pyrene	0.0968	ND	0.0701	0.0645	72.4	66.6	1	10.0-141			8.27	31
Benzo(b)fluoranthene	0.0968	ND	0.0699	0.0656	72.3	67.8	1	10.0-140			6.43	36
Benzo(g,h,i)perylene	0.0968	ND	0.0688	0.0634	71.1	65.5	1	10.0-140			8.23	33
Benzo(k)fluoranthene	0.0968	ND	0.0695	0.0632	71.8	65.3	1	10.0-137			9.49	31
Chrysene	0.0968	ND	0.0692	0.0640	71.5	66.1	1	10.0-145			7.81	30
Dibenz(a,h)anthracene	0.0968	ND	0.0695	0.0640	71.8	66.1	1	10.0-132			8.16	31
Fluoranthene	0.0968	ND	0.0778	0.0728	80.4	75.3	1	10.0-153			6.59	33
Fluorene	0.0968	ND	0.0739	0.0682	76.4	70.5	1	11.0-130			8.00	29
Indeno(1,2,3-cd)pyrene	0.0968	ND	0.0695	0.0639	71.8	66.0	1	10.0-137			8.35	32
Naphthalene	0.0968	ND	0.0667	0.0618	68.9	63.9	1	10.0-135			7.53	27
Phenanthrene	0.0968	ND	0.0686	0.0649	70.9	67.0	1	10.0-144			5.62	31
Pyrene	0.0968	ND	0.0666	0.0618	68.8	63.9	1	10.0-148			7.35	35
1-Methylnaphthalene	0.0968	ND	0.0750	0.0691	77.5	71.4	1	10.0-142			8.23	28
2-Methylnaphthalene	0.0968	ND	0.0715	0.0664	73.9	68.6	1	10.0-137			7.37	28
2-Chloronaphthalene	0.0968	ND	0.0690	0.0632	71.3	65.3	1	29.0-120			8.79	24
(S) Nitrobenzene-d5					*76.5*	*69.1*		*14.0-149*				
(S) 2-Fluorobiphenyl					*81.8*	*73.7*		*34.0-125*				
(S) p-Terphenyl-d14					*77.7*	*71.2*		*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

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
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
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

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	LAO00356
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

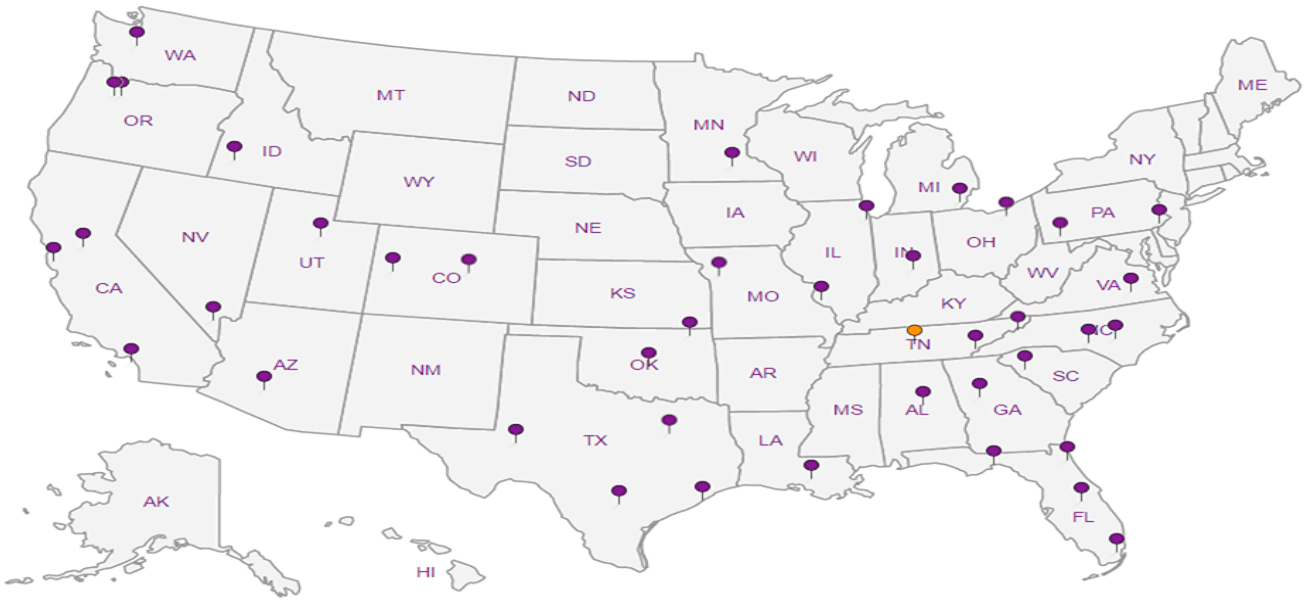
Third Party Federal Accreditations

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.



Laramie Energy

Billing Information:

Report to: **Robert Stockton**

Email To: **rstockton@entradainc.com**

Project Description: **28-10 Loadout**

City/State Collected: **DBQ, CO**

Phone: **(970) 640-0568**
Fax:

Client Project #

Lab Project #

Collected by (print): **Robert Stockton**

Site/Facility ID # **28-10 Loadout**

P.O. #

Collected by (Signature):

Immediately Packed on Ice N ____ Y X

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Table 910-1	As, SpC, SAR								Remarks	Sample # (lab only)
28-10: POR 4'	Grab	SS		8/13/2019	1340	3	X										-01
28-10: S1 10-14"	Grab	SS		8/13/2019	1435	3	X										-02
28-10: S2 0-4"	Grab	SS		8/13/2019	1405	3	X										-03
28-10: T1 0-3"	Grab	SS		8/13/2019	1420	3	X										-04
28-10: BGN	Grab	SS		8/13/2019	1430	1		X									-05
28-10: BGS	Grab	SS		8/13/2019	1435	1		X									-06

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # L1128905
D027

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

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

Remarks:
**=dissolved metals in 500 mL poly

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking # 4510 1663 2850

Sample Receipt Checklist
COC Seal Present/Intact: NP 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

	Date:	Time:		
Relinquished by : (Signature)	8/13/19	1600	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	8/13/19	1700	Received by: (Signature)	Temp: 1.3 °F °C 4.3+.2=4.5 Bottles Received: 14
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/14 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF OK

Troy Dunlap

Login #: L1128905	Client: OXYGJCO	Date: 8/14/19	Evaluated by: L. Hamelman

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time		Login Clarification Needed		**If Broken Container:**
	Temperature not in range		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	pH not in range.		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Courie
	Insufficient sample volume.	X	Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments: Received 28-10:SI 0-8" collected 8/13 at 1355 not listed on the COC.

Client informed by:		Call	x	Email		Voice Mail		Date: 8/14/19	Time: 1953
TSR Initials: CMW	Client Contact: Robert Stockton								

Login Instructions:

Please log to TABLE910