Monthly Background Sampling Report

Knight Well Pad Site and Union Reservoir
Weld County Road 28
Longmont, Weld County, Colorado

January 18, 2019
Terracon Project No's. 22187033 and 22187053

Prepared for:
City of Longmont
Longmont, Colorado

Prepared by:
Terracon Consultants, Inc.
Longmont, Colorado

January 18, 2019

Terracon

City of Longmont
385 Kimbark Street
Longmont, Colorado 80501

Attn: Mr. Jason Elkins
(303) 651-8310
Jason.Elkins@longmontcolorado.gov

Re: Monthly Background Sampling Report
Knight Well Pad Site and Union Reservoir
Weld County Road 28
Longmont, Weld County, Colorado
Terracon Project No's. 22187033 and 22187053

Dear Mr. Elkins,

Terracon Consultants, Inc. (Terracon) is pleased to submit this Monthly Background Sampling Report for groundwater analysis performed at the above referenced sites. The report presents data from recent field activities that included the collection of groundwater samples for laboratory analysis. Terracon conducted this assessment in general accordance with our proposals P22187033 and P22187053.

Terracon appreciates this opportunity to provide environmental engineering services to the City of Longmont. Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,
Terracon Consultants, Inc.

Michael J. Skridulis
Environmental Department Manager

E.R.G. FOR:
John C. Graves, P.G.
Senior Principal/Regional Manager

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MONTHLY BACKGROUND SAMPLING REPORT
KNIGHT WELL PAD SITE AND UNION RESERVOIR
WELD COUNTY ROAD 28
LONGMONT, WELD COUNTY, COLORADO

Terracon Project No. 22187033 and 22187053
January 18, 2019

1.0 SITE DESCRIPTION

The Knight Well Pad site is located between State Highway 66 to the north and Weld County Road 28 to the south at 690 State Highway 66 and the Union Reservoir site is located between Weld County Road 28 to the north and Union Reservoir to the south in Longmont, Weld County, Colorado.

Site Diagrams are included as Exhibit 1 and Exhibit 2 in Appendix A.

2.0 SCOPE OF SERVICES

In 2012, Terracon was retained by the City of Longmont (City) to assess seventeen plugged and abandoned oil and gas wells located within the City limits. The objective of the 2012 assessment was to provide information concerning the plugging and abandoning of 17 oil and gas (O&G) wellheads located within the City and to assess the potential presence of surficial soil impacts, methane and other gases in the subsurface near the surveyed well locations.

The City of Longmont has continued to assess sensitive environmental receptors, including soil, water, and soil gas conditions related to current and future oil and gas exploration and production in and around city limits. Terracon understands that the City of Longmont would like to expand the scope of work to include assessing the condition of soil, groundwater, and soil gas at select locations including collection of background conditions prior to future O&G activities.

In the fourth quarter 2018, Terracon installed permanent monitoring wells at the sites for the purpose of establishing a background groundwater data set prior to constructions O&G exploration and production (E&P) facilities at the Knight site. The scope of services includes monthly groundwater monitoring for constituents of concern related to O&G production.

Terracon conducted the fieldwork under a safety plan developed for this project. Work was performed using United States Environmental Protection Agency (USEPA) Level D work attire consisting of hard hats, safety glasses, protective gloves, and protective boots.

2.1 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. Terracon makes no warranties, either express or implied, regarding the findings, conclusions, or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These groundwater sampling services were performed in accordance with the scope of work agreed with you, our client, as reflected in our proposal and were not restricted by ASTM E1903-11.

2.2 Additional Scope Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable, or not present during these services. We cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this sampling event. Subsurface conditions may vary from those encountered at specific wells or during other surveys, tests, assessments, investigations, or exploratory services. The data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

2.3 Reliance

This report has been prepared for the exclusive use of the City of Longmont, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of City of Longmont and Terracon. Any unauthorized distribution or reuse is at City of Longmont 's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal, sampling report, and Terracon's Master Services Agreement (MSA) with the City of Longmont. The limitation of liability defined in the terms and conditions of the MSA is the aggregate limit of Terracon's liability to the City of Longmont and all relying parties unless otherwise agreed in writing.

3.0 GROUNDWATER SAMPLING

Groundwater sampling activities were completed on December 20, 2018 by a Terracon Scientist. One groundwater sample was collected from the monitoring well MW-03 at the Knight Well Pad

Site (Knight), and one groundwater sample was collected from each of the three monitoring wells (MW-01, MW-02, and MW-03) at the Union Reservoir Site (Union) for laboratory analysis. Knight MW-03 was developed by purging approximately 5-6 gallons of water from the monitoring well until water parameter measurements stabilized. Union MW-01, MW-02, and MW-03 were not purged due to a lack of sufficient water for sampling in the monitoring well.

Groundwater samples were collected from each monitoring well using a new, disposable, polypropylene bailer. After packaging each groundwater sample in laboratory-provided containers, Terracon recorded the sample time on each container label in permanent ink and place the filled containers in an ice-filled cooler for transport to Terracon's office. Sample containers were placed into a shipping container and transported under chain-of-custody to PACE Analytical® (PACE) located in Mt. Juliet, Tennessee for analysis as outlined on the table below.

SAMPLING AND ANALYTICAL PROGRAM	
Groundwater Analysis	VOCs – EPA 8260
	Dissolved Gases – RSK 175
	Dissolved Gases CO_2 – EPA 4500CO2 D2011
	Metals (arsenic, barium boron, cadmium, chromium III, chromium VI, copper, lead, mercury, nickel, selenium, silver, zinc) – EPA 200.8/6020
	PAH's – EPA 8270
	Total Dissolved Solids – EPA 160.1
	Chloride and Sulfate – EPA 300.0

EPA = Environmental Protection Agency; SW-846 analytical methods
VOCs = volatile organic compounds
TPH = total petroleum hydrocarbons
PAH = polycyclic aromatic hydrocarbons

4.0 GROUNDWATER ANALYTICAL RESULTS

Laboratory analytical results for the groundwater samples were compared to the June 30, 2016 CDPHE Groundwater Quality Standards (GWQSs) and January 2015 COGCC Table 910-1 Groundwater Concentration Levels (910-1 Levels). The groundwater analytical data and corresponding action levels are summarized in the Table in Appendix A. Inorganic analytical results were compared to COGCC standards and previously established background levels.

Analytical results for the December sampling event indicated the following:

- Concentrations of dissolved arsenic (Union MW-03), boron (Union MW-02), and selenium (Knight MW-03, Union MW-02 and MW-03) were reported above CDPHE groundwater quality limits.

- Concentrations of VOCs and PAHs were reported below method detection limits for all wells.
- Concentrations of chloride, sulfates, and total dissolved solids (TDS) were reported above CDPHE and COGCC limits.

A comprehensive summary of analytical results for groundwater samples is included in the Table in Appendix B. Laboratory analytical reports are also included in Appendix C.

5.0 CONCLUSIONS

Based on the scope of services described in this report and subject to the limitations described herein, Terracon conclusions include the following:

- Elevated concentrations of metals, chloride, and sulfates exist on the site.
- Concentrations measured for December 2018 are comparable in magnitude with previously established baseline values.
- Reported concentrations from groundwater samples do not indicate any new or changing source of contamination.

APPENDIX A – EXHIBITS

Exhibit 1 – Knight Well Pad Site Map

Exhibit 2 – Union Reservoir Site Map

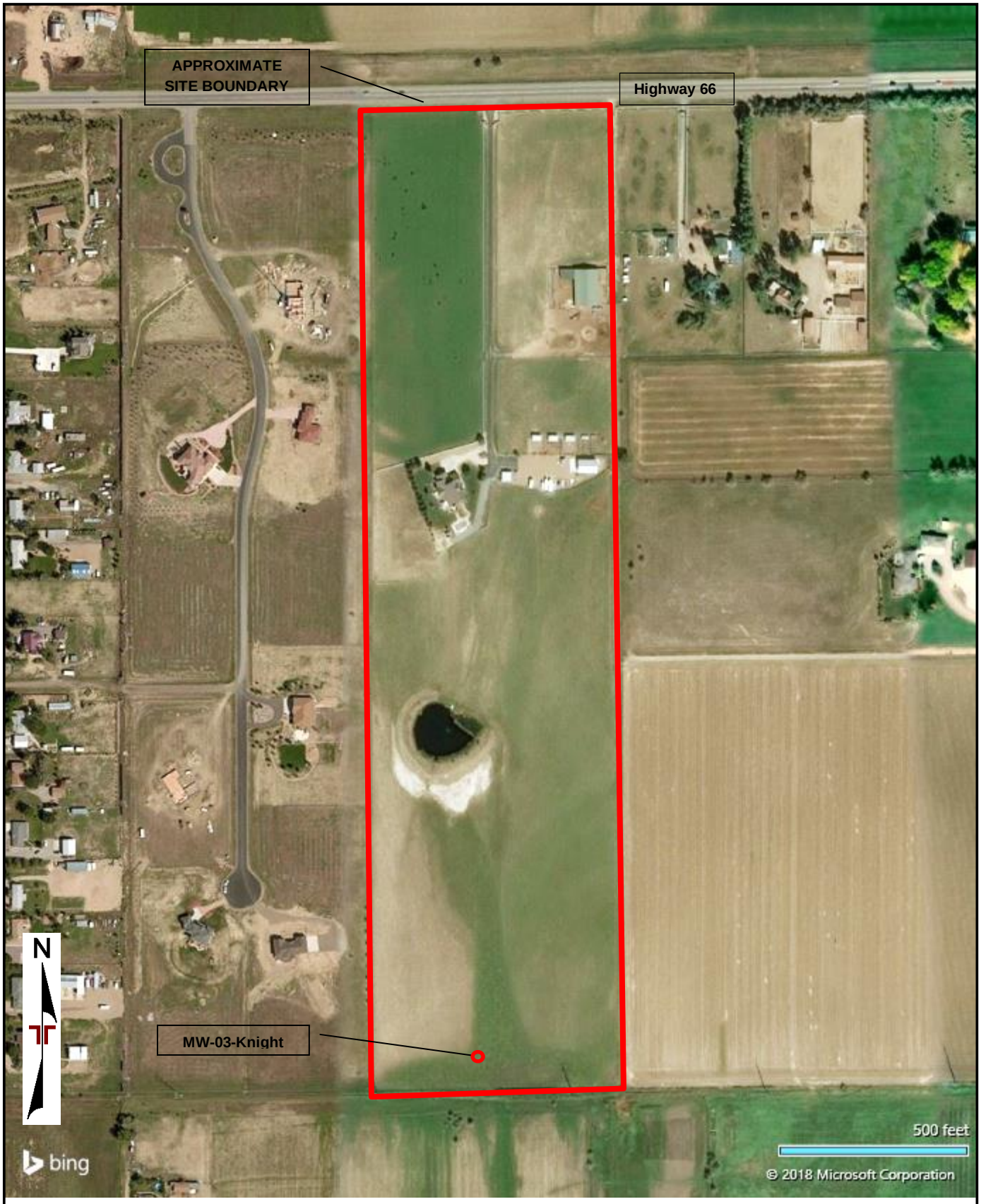

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

Project Manager: MJS Drawn by: CSG Checked by: JCG Approved by: JCG	Project No. 22187033 Scale: AS SHOWN File Name: 22187033 Date: 10/15/2018	Terracon 1831 Lefthand Cir Ste C Longmont, CO 80501-6768	SITE DIAGRAM Knight Pad Site Baseline Study State Highway 66 Weld County Road 3 Longmont, CO	Exhibit 1

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	MJS
Drawn by:	CAC
Checked by:	MJS
Approved by:	JCG

Project No.	22187053
Scale:	AS SHOWN
File Name:	SITE
Date:	1/8/2019

Terracon
1831 Lefthand Cir Ste C
Longmont, CO 80501-6768

SITE DIAGRAM

Union Reservoir Baseline Assessment
Weld County Road 28
Longmont, Colorado

Exhibit
2

APPENDIX B – GROUNDWATER ANALYTICAL SUMMARY TABLE

Table 1 - Groundwater Analytical Summary
City of Longmont - Baseline Groundwater Monitoring
Project Numbers 22187033 22187053

			Volatile Organic Compounds						Semivolatile Organic Compounds		Other Organic Compounds				Inorganic Parameters								General Parameters
Parameter			Benzene	Ethylbenzene	p-Isopropyltoluene	Naphthalene	Toluene	Xylenes (Total)	Fluorene	Phenanthrene	Methane	Ethane	Carbon Dioxide	Ethylene	Arsenic, Dissolved	Barium, Dissolved	Boron, Dissolved	Copper, Dissolved	Nickel, Dissolved	Selenium, Dissolved	Chloride	Sulfate	Total Dissolved Solids (TDS)
COGCC Table 910-1[3]			0.005	0.7	---	---	0.56	1.4	---	---	---	---	---	---	---	---	---	---	---	---	76.21	757.63	---
			---	---	---	---	1[M]	10[M]	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CDPHE Basic Standards for Groundwater			0.005	0.7	---	0.14	0.56	1.4	0.28	---	---	---	---	---	---	2	0.75	0.2	0.2	0.02	250	250	400-No Limit
Detection Level			0.001	0.001	0.001	0.005	0.001	0.003	0.0001	0.0005	0.0066	0.0062	20	0.0062	0.01	0.01	0.01	0.01	0.01	0.01			200
Wellsite	Sample ID	Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Knight Future Well Pad Site	MW-03	11/2/2018	ND	ND	ND	**0.000252**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.048**	**0.508**	ND	ND	**0.0816**	**173**	**4,500**	**7,270**
		12/20/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.028**	**0.508**	ND	ND	**0.0694**	**156**	**4,580**	**7,230**
Union Reservoir	MW-01	10/31/2018	ND	ND	**0.00122**	ND	ND	ND	**0.000058**	ND	ND	ND	ND	ND	ND	**0.0715**	**1.11**	**0.0167**	**0.0105**	**0.0358**	**357**	**15,500**	**20,000**
		12/20/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0237**	**1.1**	ND	ND	**0.0135**	**169**	**8,190**	**12,100**
	MW-02	10/31/2018	ND	ND	ND	ND	ND	ND	**0.0000647**	**0.000083**	ND	ND	ND	ND	ND	**0.0447**	**1.03**	ND	ND	**0.465**	**569**	**14,800**	**19,700**
		12/20/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.0159**	**0.866**	ND	ND	**0.318**	**504**	**17,400**	**20,500**
	MW-03	10/31/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.101**	**2.95**	ND	ND	**1.24**	**1,830**	**50,300**	**77,700**
		12/20/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**33.3**	ND	**0.0144**	**0.0281**	**2.07**	**0.0304**	ND	**1.26**	**1,590**	**62,600**	**73,300**

The COGCC cleanup standard for chloride and sulfate is 1.25 x background. Background concentrations from unimpacted wells were used to average and calculate an appropriate background concentration for this area.
COGCC - Colorado Oil and Gas Conservation Commission
CDPHE - Colorado Department of Public Health and Environment
mg/L - milligrams per liter
ND - Parameter not detected above the laboratory detection limit (Detection Limit)
Bold indicates detected constituents
Yellow shading indicates constituents above COGCC Table 910-1 standards.
Red shading indicates constituents detected above CDPHE standards
M - Drinking water maximum contaminant level
-- Not Sampled
--- indicates no regulatory standard

APPENDIX C – ANALYTICAL REPORT AND CHAIN OF CUSTODY

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 02, 2019

Terracon Consultants, Inc - Longmont, CO

Sample Delivery Group:	L1055425
Samples Received:	12/21/2018
Project Number:	22187053
Description:	Union Resevoir

Report To: Michael Skridulis
1242 Bramwood Place
Longmont, CO 80501

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Project Manager

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MW-03-KNIGHT L1055425-01 GW

Collected by: Charles Covington | Collected date/time: 12/20/18 09:40 | Received date/time: 12/21/18 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1214944	1	12/22/18 20:46	12/22/18 20:46	WBD
Gravimetric Analysis by Method 2540 C-2011	WG1215191	1	12/27/18 19:48	12/27/18 21:05	AJS
Wet Chemistry by Method 4500CO2 D-2011	WG1216831	1	12/28/18 15:01	12/28/18 15:01	MCG
Wet Chemistry by Method 7196A	WG1214795	1	12/22/18 10:04	12/22/18 10:04	MLW
Wet Chemistry by Method 9056A	WG1216451	100	12/28/18 12:04	12/28/18 12:04	ELN
Wet Chemistry by Method 9056A	WG1216451	5	12/27/18 23:50	12/27/18 23:50	ELN
Mercury by Method 7470A	WG1215393	1	12/27/18 10:43	12/28/18 08:28	TRB
Metals (ICP) by Method 6010B	WG1214944	1	12/22/18 09:40	12/22/18 20:46	WBD
Volatile Organic Compounds (GC) by Method RSK175	WG1216205	1	12/28/18 08:23	12/28/18 08:23	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1215332	1	12/23/18 17:04	12/23/18 17:04	DWR
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1215630	1	12/24/18 14:48	12/26/18 13:16	CJR

MW-01 L1055425-02 GW

Collected by: Charles Covington | Collected date/time: 12/20/18 12:45 | Received date/time: 12/21/18 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1214944	1	12/22/18 20:49	12/22/18 20:49	WBD
Gravimetric Analysis by Method 2540 C-2011	WG1215191	1	12/27/18 19:48	12/27/18 21:05	AJS
Wet Chemistry by Method 4500CO2 D-2011	WG1216831	1	12/28/18 15:09	12/28/18 15:09	MCG
Wet Chemistry by Method 7196A	WG1214795	1	12/22/18 10:05	12/22/18 10:05	MLW
Wet Chemistry by Method 9056A	WG1216451	100	12/28/18 12:15	12/28/18 12:15	ELN
Wet Chemistry by Method 9056A	WG1216451	5	12/28/18 00:11	12/28/18 00:11	ELN
Mercury by Method 7470A	WG1215393	1	12/27/18 10:43	12/28/18 08:31	TRB
Metals (ICP) by Method 6010B	WG1214944	1	12/22/18 09:40	12/22/18 20:49	WBD
Volatile Organic Compounds (GC) by Method RSK175	WG1216205	1	12/28/18 08:27	12/28/18 08:27	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1215332	1	12/23/18 17:24	12/23/18 17:24	DWR
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1215630	1	12/24/18 14:48	12/26/18 15:07	CJR

MW-02 L1055425-03 GW

Collected by: Charles Covington | Collected date/time: 12/20/18 12:15 | Received date/time: 12/21/18 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1214944	1	12/22/18 20:52	12/22/18 20:52	WBD
Gravimetric Analysis by Method 2540 C-2011	WG1215191	1	12/27/18 19:48	12/27/18 21:05	AJS
Wet Chemistry by Method 4500CO2 D-2011	WG1216831	1	12/28/18 15:17	12/28/18 15:17	MCG
Wet Chemistry by Method 7196A	WG1214795	1	12/22/18 10:06	12/22/18 10:06	MLW
Wet Chemistry by Method 9056A	WG1216451	20	12/28/18 00:33	12/28/18 00:33	ELN
Wet Chemistry by Method 9056A	WG1216451	500	12/28/18 12:26	12/28/18 12:26	ELN
Mercury by Method 7470A	WG1215393	1	12/27/18 10:43	12/28/18 08:33	TRB
Metals (ICP) by Method 6010B	WG1214944	1	12/22/18 09:40	12/22/18 20:52	WBD
Volatile Organic Compounds (GC) by Method RSK175	WG1216205	1	12/28/18 08:29	12/28/18 08:29	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1215332	1	12/23/18 17:44	12/23/18 17:44	DWR
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1216089	1.05	12/26/18 16:58	12/26/18 20:47	CJR

MW-03 L1055425-04 GW

Collected by: Charles Covington | Collected date/time: 12/20/18 09:40 | Received date/time: 12/21/18 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1214944	1	12/22/18 20:55	12/22/18 20:55	WBD
Gravimetric Analysis by Method 2540 C-2011	WG1215191	1	12/27/18 19:48	12/27/18 21:05	AJS
Wet Chemistry by Method 4500CO2 D-2011	WG1216831	1	12/28/18 15:32	12/28/18 15:32	MCG
Wet Chemistry by Method 7196A	WG1214795	1	12/22/18 10:06	12/22/18 10:06	MLW
Wet Chemistry by Method 9056A	WG1216451	100	12/28/18 00:44	12/28/18 00:44	ELN

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

MW-03 L1055425-04 GW

Collected by	Collected date/time	Received date/time
Charles Covington	12/20/18 09:40	12/21/18 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1216451	1000	12/28/18 12:37	12/28/18 12:37	ELN
Mercury by Method 7470A	WG1215393	1	12/27/18 10:43	12/28/18 08:36	TRB
Metals (ICP) by Method 6010B	WG1214944	1	12/22/18 09:40	12/22/18 20:55	WBD
Metals (ICP) by Method 6010B	WG1214944	5	12/22/18 09:40	12/23/18 20:42	TRB
Volatile Organic Compounds (GC) by Method RSK175	WG1216205	1	12/28/18 08:32	12/28/18 08:32	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1215409	1	12/23/18 20:24	12/23/18 20:24	JCP
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1216089	1	12/26/18 17:00	12/26/18 21:09	CJR

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.

Daphne R Richards

Daphne Richards
Project Manager

Calculated Results

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Trivalent Chromium, Dissolved	ND		0.0100	1	12/22/2018 20:46	WG1214944

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Dissolved Solids	7230		100	1	12/27/2018 21:05	WG1215191

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Free Carbon Dioxide	ND	T8	20.0	1	12/28/2018 15:01	WG1216831

Sample Narrative:

L1055425-01 WG1216831: Endpoint pH 4.5

Wet Chemistry by Method 7196A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND	T8	0.0100	1	12/22/2018 10:04	WG1214795

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloride	156		5.00	5	12/27/2018 23:50	WG1216451
Sulfate	4580		500	100	12/28/2018 12:04	WG1216451

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury,Dissolved	ND		0.000200	1	12/28/2018 08:28	WG1215393

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Arsenic,Dissolved	ND		0.0100	1	12/22/2018 20:46	WG1214944
Barium,Dissolved	0.0280		0.00500	1	12/22/2018 20:46	WG1214944
Boron,Dissolved	0.508		0.200	1	12/22/2018 20:46	WG1214944
Cadmium,Dissolved	ND		0.00200	1	12/22/2018 20:46	WG1214944
Chromium,Dissolved	ND		0.0100	1	12/22/2018 20:46	WG1214944
Copper,Dissolved	ND		0.0100	1	12/22/2018 20:46	WG1214944
Lead,Dissolved	ND		0.00500	1	12/22/2018 20:46	WG1214944
Nickel,Dissolved	ND		0.0100	1	12/22/2018 20:46	WG1214944
Selenium,Dissolved	0.0694		0.0100	1	12/22/2018 20:46	WG1214944
Silver,Dissolved	ND		0.00500	1	12/22/2018 20:46	WG1214944
Zinc,Dissolved	ND		0.0500	1	12/22/2018 20:46	WG1214944

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Methane	ND		0.0100	1	12/28/2018 08:23	WG1216205
Ethane	ND		0.0130	1	12/28/2018 08:23	WG1216205
Ethene	ND		0.0130	1	12/28/2018 08:23	WG1216205

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	12/23/2018 17:04	WG1215332
Acrolein	ND	J4	0.0500	1	12/23/2018 17:04	WG1215332
Acrylonitrile	ND		0.0100	1	12/23/2018 17:04	WG1215332
Benzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
Bromobenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
Bromodichloromethane	ND		0.00100	1	12/23/2018 17:04	WG1215332
Bromoform	ND		0.00100	1	12/23/2018 17:04	WG1215332
Bromomethane	ND		0.00500	1	12/23/2018 17:04	WG1215332
n-Butylbenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
sec-Butylbenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
tert-Butylbenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
Carbon tetrachloride	ND		0.00100	1	12/23/2018 17:04	WG1215332
Chlorobenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
Chlorodibromomethane	ND		0.00100	1	12/23/2018 17:04	WG1215332
Chloroethane	ND		0.00500	1	12/23/2018 17:04	WG1215332
Chloroform	ND		0.00500	1	12/23/2018 17:04	WG1215332
Chloromethane	ND		0.00250	1	12/23/2018 17:04	WG1215332
2-Chlorotoluene	ND		0.00100	1	12/23/2018 17:04	WG1215332
4-Chlorotoluene	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,2-Dibromo-3-Chloropropane	ND	J4	0.00500	1	12/23/2018 17:04	WG1215332
1,2-Dibromoethane	ND		0.00100	1	12/23/2018 17:04	WG1215332
Dibromomethane	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,2-Dichlorobenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,3-Dichlorobenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,4-Dichlorobenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
Dichlorodifluoromethane	ND		0.00500	1	12/23/2018 17:04	WG1215332
1,1-Dichloroethane	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,2-Dichloroethane	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,1-Dichloroethene	ND		0.00100	1	12/23/2018 17:04	WG1215332
cis-1,2-Dichloroethene	ND		0.00100	1	12/23/2018 17:04	WG1215332
trans-1,2-Dichloroethene	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,2-Dichloropropane	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,1-Dichloropropene	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,3-Dichloropropane	ND		0.00100	1	12/23/2018 17:04	WG1215332
cis-1,3-Dichloropropene	ND		0.00100	1	12/23/2018 17:04	WG1215332
trans-1,3-Dichloropropene	ND		0.00100	1	12/23/2018 17:04	WG1215332
2,2-Dichloropropane	ND		0.00100	1	12/23/2018 17:04	WG1215332
Di-isopropyl ether	ND		0.00100	1	12/23/2018 17:04	WG1215332
Ethylbenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
Hexachloro-1,3-butadiene	ND		0.00100	1	12/23/2018 17:04	WG1215332
Isopropylbenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
p-Isopropyltoluene	ND		0.00100	1	12/23/2018 17:04	WG1215332
2-Butanone (MEK)	ND		0.0100	1	12/23/2018 17:04	WG1215332
Methylene Chloride	ND		0.00500	1	12/23/2018 17:04	WG1215332
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	12/23/2018 17:04	WG1215332
Methyl tert-butyl ether	ND		0.00100	1	12/23/2018 17:04	WG1215332
Naphthalene	ND		0.00500	1	12/23/2018 17:04	WG1215332
n-Propylbenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
Styrene	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,1,1,2-Tetrachloroethane	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,1,2,2-Tetrachloroethane	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,1,2-Trichlorotrifluoroethane	ND		0.00100	1	12/23/2018 17:04	WG1215332
Tetrachloroethene	ND		0.00100	1	12/23/2018 17:04	WG1215332
Toluene	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,2,3-Trichlorobenzene	ND	J4	0.00100	1	12/23/2018 17:04	WG1215332
1,2,4-Trichlorobenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,1,2-Trichloroethane	ND		0.00100	1	12/23/2018 17:04	WG1215332
Trichloroethene	ND		0.00100	1	12/23/2018 17:04	WG1215332
Trichlorofluoromethane	ND		0.00500	1	12/23/2018 17:04	WG1215332
1,2,3-Trichloropropane	ND		0.00250	1	12/23/2018 17:04	WG1215332
1,2,4-Trimethylbenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,2,3-Trimethylbenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
1,3,5-Trimethylbenzene	ND		0.00100	1	12/23/2018 17:04	WG1215332
Vinyl chloride	ND		0.00100	1	12/23/2018 17:04	WG1215332
Xylenes, Total	ND		0.00300	1	12/23/2018 17:04	WG1215332
(S) Toluene-d8	*108*		*80.0-120*		*12/23/2018 17:04*	WG1215332
(S) Dibromofluoromethane	*104*		*75.0-120*		*12/23/2018 17:04*	WG1215332
(S) 4-Bromofluorobenzene	*97.4*		*77.0-126*		*12/23/2018 17:04*	WG1215332

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Acenaphthene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Acenaphthylene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Benzo(a)anthracene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Benzo(a)pyrene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Benzo(b)fluoranthene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Benzo(g,h,i)perylene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Benzo(k)fluoranthene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Chrysene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Dibenz(a,h)anthracene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Fluoranthene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Fluorene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Indeno(1,2,3-cd)pyrene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Naphthalene	ND		0.000250	1	12/26/2018 13:16	WG1215630
Phenanthrene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
Pyrene	ND		0.0000500	1	12/26/2018 13:16	WG1215630
1-Methylnaphthalene	ND		0.000250	1	12/26/2018 13:16	WG1215630
2-Methylnaphthalene	ND		0.000250	1	12/26/2018 13:16	WG1215630
2-Chloronaphthalene	ND		0.000250	1	12/26/2018 13:16	WG1215630
(S) Nitrobenzene-d5	*118*		*31.0-160*		*12/26/2018 13:16*	WG1215630
(S) 2-Fluorobiphenyl	*95.3*		*48.0-148*		*12/26/2018 13:16*	WG1215630
(S) p-Terphenyl-d14	*87.9*		*37.0-146*		*12/26/2018 13:16*	WG1215630

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Trivalent Chromium, Dissolved	ND		0.0100	1	12/22/2018 20:49	WG1214944

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	12100		200	1	12/27/2018 21:05	WG1215191

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Free Carbon Dioxide	ND	T8	20.0	1	12/28/2018 15:09	WG1216831

Sample Narrative:

L1055425-02 WG1216831: Endpoint pH 4.5

Wet Chemistry by Method 7196A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chromium,Hexavalent	ND	T8	0.0100	1	12/22/2018 10:05	WG1214795

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	196		5.00	5	12/28/2018 00:11	WG1216451
Sulfate	8190		500	100	12/28/2018 12:15	WG1216451

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury,Dissolved	ND		0.000200	1	12/28/2018 08:31	WG1215393

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Arsenic,Dissolved	ND		0.0100	1	12/22/2018 20:49	WG1214944
Barium,Dissolved	0.0237		0.00500	1	12/22/2018 20:49	WG1214944
Boron,Dissolved	1.10		0.200	1	12/22/2018 20:49	WG1214944
Cadmium,Dissolved	ND		0.00200	1	12/22/2018 20:49	WG1214944
Chromium,Dissolved	ND		0.0100	1	12/22/2018 20:49	WG1214944
Copper,Dissolved	ND		0.0100	1	12/22/2018 20:49	WG1214944
Lead,Dissolved	ND		0.00500	1	12/22/2018 20:49	WG1214944
Nickel,Dissolved	ND		0.0100	1	12/22/2018 20:49	WG1214944
Selenium,Dissolved	0.0135		0.0100	1	12/22/2018 20:49	WG1214944
Silver,Dissolved	ND		0.00500	1	12/22/2018 20:49	WG1214944
Zinc,Dissolved	ND		0.0500	1	12/22/2018 20:49	WG1214944

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Methane	ND		0.0100	1	12/28/2018 08:27	WG1216205
Ethane	ND		0.0130	1	12/28/2018 08:27	WG1216205
Ethene	ND		0.0130	1	12/28/2018 08:27	WG1216205

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	12/23/2018 17:24	WG1215332
Acrolein	ND	J4	0.0500	1	12/23/2018 17:24	WG1215332
Acrylonitrile	ND		0.0100	1	12/23/2018 17:24	WG1215332
Benzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
Bromobenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
Bromodichloromethane	ND		0.00100	1	12/23/2018 17:24	WG1215332
Bromoform	ND		0.00100	1	12/23/2018 17:24	WG1215332
Bromomethane	ND		0.00500	1	12/23/2018 17:24	WG1215332
n-Butylbenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
sec-Butylbenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
tert-Butylbenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
Carbon tetrachloride	ND		0.00100	1	12/23/2018 17:24	WG1215332
Chlorobenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
Chlorodibromomethane	ND		0.00100	1	12/23/2018 17:24	WG1215332
Chloroethane	ND		0.00500	1	12/23/2018 17:24	WG1215332
Chloroform	ND		0.00500	1	12/23/2018 17:24	WG1215332
Chloromethane	ND		0.00250	1	12/23/2018 17:24	WG1215332
2-Chlorotoluene	ND		0.00100	1	12/23/2018 17:24	WG1215332
4-Chlorotoluene	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,2-Dibromo-3-Chloropropane	ND	J4	0.00500	1	12/23/2018 17:24	WG1215332
1,2-Dibromoethane	ND		0.00100	1	12/23/2018 17:24	WG1215332
Dibromomethane	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,2-Dichlorobenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,3-Dichlorobenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,4-Dichlorobenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
Dichlorodifluoromethane	ND		0.00500	1	12/23/2018 17:24	WG1215332
1,1-Dichloroethane	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,2-Dichloroethane	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,1-Dichloroethene	ND		0.00100	1	12/23/2018 17:24	WG1215332
cis-1,2-Dichloroethene	ND		0.00100	1	12/23/2018 17:24	WG1215332
trans-1,2-Dichloroethene	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,2-Dichloropropane	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,1-Dichloropropene	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,3-Dichloropropane	ND		0.00100	1	12/23/2018 17:24	WG1215332
cis-1,3-Dichloropropene	ND		0.00100	1	12/23/2018 17:24	WG1215332
trans-1,3-Dichloropropene	ND		0.00100	1	12/23/2018 17:24	WG1215332
2,2-Dichloropropane	ND		0.00100	1	12/23/2018 17:24	WG1215332
Di-isopropyl ether	ND		0.00100	1	12/23/2018 17:24	WG1215332
Ethylbenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
Hexachloro-1,3-butadiene	ND		0.00100	1	12/23/2018 17:24	WG1215332
Isopropylbenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
p-Isopropyltoluene	ND		0.00100	1	12/23/2018 17:24	WG1215332
2-Butanone (MEK)	ND		0.0100	1	12/23/2018 17:24	WG1215332
Methylene Chloride	ND		0.00500	1	12/23/2018 17:24	WG1215332
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	12/23/2018 17:24	WG1215332
Methyl tert-butyl ether	ND		0.00100	1	12/23/2018 17:24	WG1215332
Naphthalene	ND		0.00500	1	12/23/2018 17:24	WG1215332
n-Propylbenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
Styrene	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,1,1,2-Tetrachloroethane	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,1,2,2-Tetrachloroethane	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,1,2-Trichlorotrifluoroethane	ND		0.00100	1	12/23/2018 17:24	WG1215332
Tetrachloroethene	ND		0.00100	1	12/23/2018 17:24	WG1215332
Toluene	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,2,3-Trichlorobenzene	ND	J4	0.00100	1	12/23/2018 17:24	WG1215332
1,2,4-Trichlorobenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,1,2-Trichloroethane	ND		0.00100	1	12/23/2018 17:24	WG1215332
Trichloroethene	ND		0.00100	1	12/23/2018 17:24	WG1215332
Trichlorofluoromethane	ND		0.00500	1	12/23/2018 17:24	WG1215332
1,2,3-Trichloropropane	ND		0.00250	1	12/23/2018 17:24	WG1215332
1,2,4-Trimethylbenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,2,3-Trimethylbenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
1,3,5-Trimethylbenzene	ND		0.00100	1	12/23/2018 17:24	WG1215332
Vinyl chloride	ND		0.00100	1	12/23/2018 17:24	WG1215332
Xylenes, Total	ND		0.00300	1	12/23/2018 17:24	WG1215332
(S) Toluene-d8	*107*		*80.0-120*		*12/23/2018 17:24*	WG1215332
(S) Dibromofluoromethane	*104*		*75.0-120*		*12/23/2018 17:24*	WG1215332
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*12/23/2018 17:24*	WG1215332

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Acenaphthene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Acenaphthylene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Benzo(a)anthracene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Benzo(a)pyrene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Benzo(b)fluoranthene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Benzo(g,h,i)perylene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Benzo(k)fluoranthene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Chrysene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Dibenz(a,h)anthracene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Fluoranthene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Fluorene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Indeno(1,2,3-cd)pyrene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Naphthalene	ND		0.000250	1	12/26/2018 15:07	WG1215630
Phenanthrene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
Pyrene	ND		0.0000500	1	12/26/2018 15:07	WG1215630
1-Methylnaphthalene	ND		0.000250	1	12/26/2018 15:07	WG1215630
2-Methylnaphthalene	ND		0.000250	1	12/26/2018 15:07	WG1215630
2-Chloronaphthalene	ND		0.000250	1	12/26/2018 15:07	WG1215630
(S) Nitrobenzene-d5	*118*		*31.0-160*		*12/26/2018 15:07*	WG1215630
(S) 2-Fluorobiphenyl	*91.1*		*48.0-148*		*12/26/2018 15:07*	WG1215630
(S) p-Terphenyl-d14	*91.1*		*37.0-146*		*12/26/2018 15:07*	WG1215630

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Trivalent Chromium, Dissolved	ND		0.0100	1	12/22/2018 20:52	WG1214944

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	20500		200	1	12/27/2018 21:05	WG1215191

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Free Carbon Dioxide	ND	T8	20.0	1	12/28/2018 15:17	WG1216831

Sample Narrative:

L1055425-03 WG1216831: Endpoint pH 4.5

Wet Chemistry by Method 7196A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chromium,Hexavalent	ND	T8	0.0100	1	12/22/2018 10:06	WG1214795

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	504		20.0	20	12/28/2018 00:33	WG1216451
Sulfate	17400		2500	500	12/28/2018 12:26	WG1216451

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury,Dissolved	ND		0.000200	1	12/28/2018 08:33	WG1215393

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Arsenic,Dissolved	ND		0.0100	1	12/22/2018 20:52	WG1214944
Barium,Dissolved	0.0159		0.00500	1	12/22/2018 20:52	WG1214944
Boron,Dissolved	0.866		0.200	1	12/22/2018 20:52	WG1214944
Cadmium,Dissolved	ND		0.00200	1	12/22/2018 20:52	WG1214944
Chromium,Dissolved	ND		0.0100	1	12/22/2018 20:52	WG1214944
Copper,Dissolved	ND		0.0100	1	12/22/2018 20:52	WG1214944
Lead,Dissolved	ND		0.00500	1	12/22/2018 20:52	WG1214944
Nickel,Dissolved	ND		0.0100	1	12/22/2018 20:52	WG1214944
Selenium,Dissolved	0.318		0.0100	1	12/22/2018 20:52	WG1214944
Silver,Dissolved	ND		0.00500	1	12/22/2018 20:52	WG1214944
Zinc,Dissolved	ND		0.0500	1	12/22/2018 20:52	WG1214944

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Methane	ND		0.0100	1	12/28/2018 08:29	WG1216205
Ethane	ND		0.0130	1	12/28/2018 08:29	WG1216205
Ethene	ND		0.0130	1	12/28/2018 08:29	WG1216205

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	12/23/2018 17:44	WG1215332
Acrolein	ND	J4	0.0500	1	12/23/2018 17:44	WG1215332
Acrylonitrile	ND		0.0100	1	12/23/2018 17:44	WG1215332
Benzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
Bromobenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
Bromodichloromethane	ND		0.00100	1	12/23/2018 17:44	WG1215332
Bromoform	ND		0.00100	1	12/23/2018 17:44	WG1215332
Bromomethane	ND		0.00500	1	12/23/2018 17:44	WG1215332
n-Butylbenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
sec-Butylbenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
tert-Butylbenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
Carbon tetrachloride	ND		0.00100	1	12/23/2018 17:44	WG1215332
Chlorobenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
Chlorodibromomethane	ND		0.00100	1	12/23/2018 17:44	WG1215332
Chloroethane	ND		0.00500	1	12/23/2018 17:44	WG1215332
Chloroform	ND		0.00500	1	12/23/2018 17:44	WG1215332
Chloromethane	ND		0.00250	1	12/23/2018 17:44	WG1215332
2-Chlorotoluene	ND		0.00100	1	12/23/2018 17:44	WG1215332
4-Chlorotoluene	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,2-Dibromo-3-Chloropropane	ND	J4	0.00500	1	12/23/2018 17:44	WG1215332
1,2-Dibromoethane	ND		0.00100	1	12/23/2018 17:44	WG1215332
Dibromomethane	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,2-Dichlorobenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,3-Dichlorobenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,4-Dichlorobenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
Dichlorodifluoromethane	ND		0.00500	1	12/23/2018 17:44	WG1215332
1,1-Dichloroethane	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,2-Dichloroethane	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,1-Dichloroethene	ND		0.00100	1	12/23/2018 17:44	WG1215332
cis-1,2-Dichloroethene	ND		0.00100	1	12/23/2018 17:44	WG1215332
trans-1,2-Dichloroethene	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,2-Dichloropropane	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,1-Dichloropropene	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,3-Dichloropropane	ND		0.00100	1	12/23/2018 17:44	WG1215332
cis-1,3-Dichloropropene	ND		0.00100	1	12/23/2018 17:44	WG1215332
trans-1,3-Dichloropropene	ND		0.00100	1	12/23/2018 17:44	WG1215332
2,2-Dichloropropane	ND		0.00100	1	12/23/2018 17:44	WG1215332
Di-isopropyl ether	ND		0.00100	1	12/23/2018 17:44	WG1215332
Ethylbenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
Hexachloro-1,3-butadiene	ND		0.00100	1	12/23/2018 17:44	WG1215332
Isopropylbenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
p-Isopropyltoluene	ND		0.00100	1	12/23/2018 17:44	WG1215332
2-Butanone (MEK)	ND		0.0100	1	12/23/2018 17:44	WG1215332
Methylene Chloride	ND		0.00500	1	12/23/2018 17:44	WG1215332
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	12/23/2018 17:44	WG1215332
Methyl tert-butyl ether	ND		0.00100	1	12/23/2018 17:44	WG1215332
Naphthalene	ND		0.00500	1	12/23/2018 17:44	WG1215332
n-Propylbenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
Styrene	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,1,1,2-Tetrachloroethane	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,1,2,2-Tetrachloroethane	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,1,2-Trichlorotrifluoroethane	ND		0.00100	1	12/23/2018 17:44	WG1215332
Tetrachloroethene	ND		0.00100	1	12/23/2018 17:44	WG1215332
Toluene	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,2,3-Trichlorobenzene	ND	J4	0.00100	1	12/23/2018 17:44	WG1215332
1,2,4-Trichlorobenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,1,2-Trichloroethane	ND		0.00100	1	12/23/2018 17:44	WG1215332
Trichloroethene	ND		0.00100	1	12/23/2018 17:44	WG1215332
Trichlorofluoromethane	ND		0.00500	1	12/23/2018 17:44	WG1215332
1,2,3-Trichloropropane	ND		0.00250	1	12/23/2018 17:44	WG1215332
1,2,4-Trimethylbenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,2,3-Trimethylbenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
1,3,5-Trimethylbenzene	ND		0.00100	1	12/23/2018 17:44	WG1215332
Vinyl chloride	ND		0.00100	1	12/23/2018 17:44	WG1215332
Xylenes, Total	ND		0.00300	1	12/23/2018 17:44	WG1215332
(S) Toluene-d8	*106*		*80.0-120*		*12/23/2018 17:44*	WG1215332
(S) Dibromofluoromethane	*104*		*75.0-120*		*12/23/2018 17:44*	WG1215332
(S) 4-Bromofluorobenzene	*98.5*		*77.0-126*		*12/23/2018 17:44*	WG1215332

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Acenaphthene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Acenaphthylene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Benzo(a)anthracene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Benzo(a)pyrene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Benzo(b)fluoranthene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Benzo(g,h,i)perylene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Benzo(k)fluoranthene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Chrysene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Dibenz(a,h)anthracene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Fluoranthene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Fluorene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Indeno(1,2,3-cd)pyrene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Naphthalene	ND		0.000263	1.05	12/26/2018 20:47	WG1216089
Phenanthrene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
Pyrene	ND		0.0000525	1.05	12/26/2018 20:47	WG1216089
1-Methylnaphthalene	ND		0.000263	1.05	12/26/2018 20:47	WG1216089
2-Methylnaphthalene	ND		0.000263	1.05	12/26/2018 20:47	WG1216089
2-Chloronaphthalene	ND		0.000263	1.05	12/26/2018 20:47	WG1216089
(S) Nitrobenzene-d5	*94.3*		*31.0-160*		*12/26/2018 20:47*	WG1216089
(S) 2-Fluorobiphenyl	*92.9*		*48.0-148*		*12/26/2018 20:47*	WG1216089
(S) p-Terphenyl-d14	*77.1*		*37.0-146*		*12/26/2018 20:47*	WG1216089

Sample Narrative:

L1055425-03 WG1216089: Dilution due to sample volume

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Trivalent Chromium, Dissolved	ND		0.0100	1	12/22/2018 20:55	WG1214944

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	73300		667	1	12/27/2018 21:05	WG1215191

Wet Chemistry by Method 4500CO2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Free Carbon Dioxide	33.3	T8	20.0	1	12/28/2018 15:32	WG1216831

Sample Narrative:

L1055425-04 WG1216831: Endpoint pH 4.5

Wet Chemistry by Method 7196A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chromium,Hexavalent	ND	T8	0.0100	1	12/22/2018 10:06	WG1214795

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	1590		100	100	12/28/2018 00:44	WG1216451
Sulfate	62600		5000	1000	12/28/2018 12:37	WG1216451

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury,Dissolved	ND		0.000200	1	12/28/2018 08:36	WG1215393

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Arsenic,Dissolved	0.0144		0.0100	1	12/22/2018 20:55	WG1214944
Barium,Dissolved	0.0281		0.00500	1	12/22/2018 20:55	WG1214944
Boron,Dissolved	2.07		0.200	1	12/22/2018 20:55	WG1214944
Cadmium,Dissolved	ND		0.00200	1	12/22/2018 20:55	WG1214944
Chromium,Dissolved	ND		0.0100	1	12/22/2018 20:55	WG1214944
Copper,Dissolved	0.0304		0.0100	1	12/22/2018 20:55	WG1214944
Lead,Dissolved	ND		0.0250	5	12/23/2018 20:42	WG1214944
Nickel,Dissolved	ND		0.0500	5	12/23/2018 20:42	WG1214944
Selenium,Dissolved	1.26		0.0100	1	12/22/2018 20:55	WG1214944
Silver,Dissolved	ND		0.00500	1	12/22/2018 20:55	WG1214944
Zinc,Dissolved	ND		0.0500	1	12/22/2018 20:55	WG1214944

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Methane	ND		0.0100	1	12/28/2018 08:32	WG1216205
Ethane	ND		0.0130	1	12/28/2018 08:32	WG1216205
Ethene	ND		0.0130	1	12/28/2018 08:32	WG1216205

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	12/23/2018 20:24	WG1215409
Acrolein	ND		0.0500	1	12/23/2018 20:24	WG1215409
Acrylonitrile	ND		0.0100	1	12/23/2018 20:24	WG1215409
Benzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
Bromobenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
Bromodichloromethane	ND		0.00100	1	12/23/2018 20:24	WG1215409
Bromoform	ND		0.00100	1	12/23/2018 20:24	WG1215409
Bromomethane	ND		0.00500	1	12/23/2018 20:24	WG1215409
n-Butylbenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
sec-Butylbenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
tert-Butylbenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
Carbon tetrachloride	ND		0.00100	1	12/23/2018 20:24	WG1215409
Chlorobenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
Chlorodibromomethane	ND		0.00100	1	12/23/2018 20:24	WG1215409
Chloroethane	ND		0.00500	1	12/23/2018 20:24	WG1215409
Chloroform	ND		0.00500	1	12/23/2018 20:24	WG1215409
Chloromethane	ND		0.00250	1	12/23/2018 20:24	WG1215409
2-Chlorotoluene	ND		0.00100	1	12/23/2018 20:24	WG1215409
4-Chlorotoluene	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,2-Dibromo-3-Chloropropane	ND		0.00500	1	12/23/2018 20:24	WG1215409
1,2-Dibromoethane	ND		0.00100	1	12/23/2018 20:24	WG1215409
Dibromomethane	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,2-Dichlorobenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,3-Dichlorobenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,4-Dichlorobenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
Dichlorodifluoromethane	ND		0.00500	1	12/23/2018 20:24	WG1215409
1,1-Dichloroethane	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,2-Dichloroethane	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,1-Dichloroethene	ND		0.00100	1	12/23/2018 20:24	WG1215409
cis-1,2-Dichloroethene	ND		0.00100	1	12/23/2018 20:24	WG1215409
trans-1,2-Dichloroethene	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,2-Dichloropropane	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,1-Dichloropropene	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,3-Dichloropropane	ND		0.00100	1	12/23/2018 20:24	WG1215409
cis-1,3-Dichloropropene	ND		0.00100	1	12/23/2018 20:24	WG1215409
trans-1,3-Dichloropropene	ND		0.00100	1	12/23/2018 20:24	WG1215409
2,2-Dichloropropane	ND		0.00100	1	12/23/2018 20:24	WG1215409
Di-isopropyl ether	ND		0.00100	1	12/23/2018 20:24	WG1215409
Ethylbenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
Hexachloro-1,3-butadiene	ND		0.00100	1	12/23/2018 20:24	WG1215409
Isopropylbenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
p-Isopropyltoluene	ND		0.00100	1	12/23/2018 20:24	WG1215409
2-Butanone (MEK)	ND		0.0100	1	12/23/2018 20:24	WG1215409
Methylene Chloride	ND		0.00500	1	12/23/2018 20:24	WG1215409
4-Methyl-2-pentanone (MIBK)	ND		0.0100	1	12/23/2018 20:24	WG1215409
Methyl tert-butyl ether	ND		0.00100	1	12/23/2018 20:24	WG1215409
Naphthalene	ND		0.00500	1	12/23/2018 20:24	WG1215409
n-Propylbenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
Styrene	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,1,1,2-Tetrachloroethane	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,1,2,2-Tetrachloroethane	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,1,2-Trichlorotrifluoroethane	ND		0.00100	1	12/23/2018 20:24	WG1215409
Tetrachloroethene	ND		0.00100	1	12/23/2018 20:24	WG1215409
Toluene	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,2,3-Trichlorobenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,2,4-Trichlorobenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,1,2-Trichloroethane	ND		0.00100	1	12/23/2018 20:24	WG1215409
Trichloroethene	ND		0.00100	1	12/23/2018 20:24	WG1215409
Trichlorofluoromethane	ND		0.00500	1	12/23/2018 20:24	WG1215409
1,2,3-Trichloropropane	ND		0.00250	1	12/23/2018 20:24	WG1215409
1,2,4-Trimethylbenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,2,3-Trimethylbenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
1,3,5-Trimethylbenzene	ND		0.00100	1	12/23/2018 20:24	WG1215409
Vinyl chloride	ND		0.00100	1	12/23/2018 20:24	WG1215409
Xylenes, Total	ND		0.00300	1	12/23/2018 20:24	WG1215409
(S) Toluene-d8	*110*		*80.0-120*		*12/23/2018 20:24*	WG1215409
(S) Dibromofluoromethane	*95.2*		*75.0-120*		*12/23/2018 20:24*	WG1215409
(S) 4-Bromofluorobenzene	*110*		*77.0-126*		*12/23/2018 20:24*	WG1215409

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Acenaphthene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Acenaphthylene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Benzo(a)anthracene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Benzo(a)pyrene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Benzo(b)fluoranthene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Benzo(g,h,i)perylene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Benzo(k)fluoranthene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Chrysene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Dibenz(a,h)anthracene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Fluoranthene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Fluorene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Indeno(1,2,3-cd)pyrene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Naphthalene	ND		0.000250	1	12/26/2018 21:09	WG1216089
Phenanthrene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
Pyrene	ND		0.0000500	1	12/26/2018 21:09	WG1216089
1-Methylnaphthalene	ND		0.000250	1	12/26/2018 21:09	WG1216089
2-Methylnaphthalene	ND		0.000250	1	12/26/2018 21:09	WG1216089
2-Chloronaphthalene	ND		0.000250	1	12/26/2018 21:09	WG1216089
(S) Nitrobenzene-d5	*93.7*		*31.0-160*		*12/26/2018 21:09*	WG1216089
(S) 2-Fluorobiphenyl	*88.4*		*48.0-148*		*12/26/2018 21:09*	WG1216089
(S) p-Terphenyl-d14	*84.7*		*37.0-146*		*12/26/2018 21:09*	WG1216089

Method Blank (MB)

(MB) R3372345-1 12/27/18 21:05

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		2.82	10.0

L1055312-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1055312-02 12/27/18 21:05 • (DUP) R3372345-3 12/27/18 21:05

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	219	224	1	2.26		5

Laboratory Control Sample (LCS)

(LCS) R3372345-2 12/27/18 21:05

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8760	99.5	85.0-115	

Method Blank (MB)

(MB) R3372836-2 12/28/18 14:54

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Free Carbon Dioxide	U		6.67	20.0

Sample Narrative:

BLANK: Endpoint pH 4.5

L1055425-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1055425-03 12/28/18 15:17 • (DUP) R3372836-4 12/28/18 15:25

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Free Carbon Dioxide	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Method Blank (MB)

(MB) R3370607-1 12/22/18 10:04

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chromium,Hexavalent	U		0.00300	0.0100

L1055425-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1055425-02 12/22/18 10:05 • (DUP) R3370607-5 12/22/18 10:06

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

Laboratory Control Sample (LCS)

(LCS) R3370607-2 12/22/18 10:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium,Hexavalent	0.600	0.600	100	80.0-120	

L1055425-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1055425-01 12/22/18 10:04 • (MS) R3370607-3 12/22/18 10:05 • (MSD) R3370607-4 12/22/18 10:05

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium,Hexavalent	0.500	ND	0.514	0.509	103	102	1	85.0-115			0.978	20

Method Blank (MB)

(MB) R3371981-1 12/27/18 13:01

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.0519	1.00
Sulfate	U		0.0774	5.00

L1055320-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1055320-01 12/27/18 21:29 • (DUP) R3371981-3 12/27/18 21:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4.87	5.04	1	3.39		15
Sulfate	13.4	13.9	1	3.69		15

L1055785-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1055785-04 12/28/18 01:38 • (DUP) R3371981-6 12/28/18 01:49

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	66.0	66.6	1	0.913		15

L1055785-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1055785-04 12/28/18 12:59 • (DUP) R3371981-8 12/28/18 13:10

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	198	198	5	0.269		15

Laboratory Control Sample (LCS)

(LCS) R3371981-2 12/27/18 13:12

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	40.1	100	80.0-120	
Sulfate	40.0	39.9	99.7	80.0-120	

L1055320-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1055320-01 12/27/18 21:29 • (MS) R3371981-4 12/27/18 21:50 • (MSD) R3371981-5 12/27/18 22:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	4.87	53.2	54.9	96.6	100	1	80.0-120			3.16	15
Sulfate	50.0	13.4	61.2	62.0	95.6	97.2	1	80.0-120			1.29	15

L1055785-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1055785-04 12/28/18 01:38 • (MS) R3371981-7 12/28/18 02:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	66.0	113	93.7	1	80.0-120	E
Sulfate	50.0	193	233	79.1	1	80.0-120	E J6

Method Blank (MB)

(MB) R3371940-1 12/28/18 08:14

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury,Dissolved	U		0.0000490	0.000200

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

(LCS) R3371940-5 12/28/18 09:54 • (LCSD) R3371940-2 12/28/18 08:19

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Mercury,Dissolved	0.00300	0.00298	0.00303	99.3	101	80.0-120			1.58	20

L1055983-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1055983-06 12/28/18 08:21 • (MS) R3371940-3 12/28/18 08:24 • (MSD) R3371940-4 12/28/18 08:26

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury,Dissolved	0.00300	U	0.00309	0.00307	103	102	1	75.0-125			0.636	20

Method Blank (MB)

(MB) R3370760-1 12/22/18 19:56

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic,Dissolved	U		0.00650	0.0100
Barium,Dissolved	U		0.00170	0.00500
Boron,Dissolved	U		0.0126	0.200
Cadmium,Dissolved	U		0.000700	0.00200
Chromium,Dissolved	U		0.00140	0.0100
Copper,Dissolved	U		0.00530	0.0100
Lead,Dissolved	U		0.00190	0.00500
Nickel,Dissolved	U		0.00490	0.0100
Selenium,Dissolved	U		0.00740	0.0100
Silver,Dissolved	U		0.00280	0.00500
Zinc,Dissolved	U		0.00590	0.0500

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

(LCS) R3370760-2 12/22/18 19:58 • (LCSD) R3370760-3 12/22/18 20:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic,Dissolved	1.00	0.949	0.947	94.9	94.7	80.0-120			0.163	20
Barium,Dissolved	1.00	1.00	0.999	100	99.9	80.0-120			0.460	20
Boron,Dissolved	1.00	0.961	0.977	96.1	97.7	80.0-120			1.69	20
Cadmium,Dissolved	1.00	0.957	0.952	95.7	95.2	80.0-120			0.522	20
Chromium,Dissolved	1.00	0.953	0.950	95.3	95.0	80.0-120			0.246	20
Copper,Dissolved	1.00	0.963	0.963	96.3	96.3	80.0-120			0.0452	20
Lead,Dissolved	1.00	0.969	0.967	96.9	96.7	80.0-120			0.159	20
Nickel,Dissolved	1.00	0.973	0.974	97.3	97.4	80.0-120			0.143	20
Selenium,Dissolved	1.00	0.947	0.948	94.7	94.8	80.0-120			0.0936	20
Silver,Dissolved	0.200	0.187	0.187	93.7	93.5	80.0-120			0.179	20
Zinc,Dissolved	1.00	0.948	0.949	94.8	94.9	80.0-120			0.0610	20

L1055398-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1055398-01 12/22/18 20:04 • (MS) R3370760-5 12/22/18 20:09 • (MSD) R3370760-6 12/22/18 20:12

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic,Dissolved	1.00	U	0.935	0.913	93.5	91.3	1	75.0-125			2.41	20
Barium,Dissolved	1.00	0.00890	0.941	0.933	93.2	92.4	1	75.0-125			0.897	20
Boron,Dissolved	1.00	U	0.718	0.697	71.8	69.7	1	75.0-125	J6	J6	3.07	20
Cadmium,Dissolved	1.00	0.327	1.28	1.27	95.3	94.4	1	75.0-125			0.717	20
Chromium,Dissolved	1.00	0.0257	0.909	0.898	88.3	87.2	1	75.0-125			1.23	20

L1055398-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1055398-01 12/22/18 20:04 • (MS) R3370760-5 12/22/18 20:09 • (MSD) R3370760-6 12/22/18 20:12

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Copper,Dissolved	1.00	23.4	23.9	23.8	47.5	41.2	1	75.0-125	V	V	0.263	20
Lead,Dissolved	1.00	0.0990	1.08	1.06	97.8	96.2	1	75.0-125			1.44	20
Nickel,Dissolved	1.00	0.472	1.47	1.45	99.8	98.0	1	75.0-125			1.24	20
Selenium,Dissolved	1.00	U	0.893	0.883	89.3	88.3	1	75.0-125			1.16	20
Silver,Dissolved	0.200	U	0.189	0.185	94.6	92.7	1	75.0-125			2.05	20
Zinc,Dissolved	1.00	48.8	48.8	48.7	0.000	0.000	1	75.0-125	E V	E V	0.232	20

Method Blank (MB)

(MB) R3371765-1 12/28/18 08:09

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Methane	U		0.00291	0.0100
Ethane	U		0.00407	0.0130
Ethene	U		0.00426	0.0130

L1055520-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1055520-02 12/28/18 08:55 • (DUP) R3371765-2 12/28/18 08:57

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20

L1055718-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1055718-01 12/28/18 09:04 • (DUP) R3371765-3 12/28/18 09:10

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Methane	0.373	0.373	1	0.000216		20
Ethane	U	0.000	1	0.000		20
Ethene	U	0.000	1	0.000		20

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

(LCS) R3371765-4 12/28/18 09:14 • (LCSD) R3371765-5 12/28/18 09:19

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methane	0.0678	0.0712	0.0755	105	111	85.0-115			5.81	20
Ethane	0.129	0.116	0.119	89.9	91.9	85.0-115			2.21	20
Ethene	0.127	0.115	0.116	90.5	91.7	85.0-115			1.34	20

Method Blank (MB)

(MB) R3370899-3 12/23/18 10:28

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acetone	U		0.0100	0.0500
Acrolein	U		0.00887	0.0500
Acrylonitrile	U		0.00187	0.0100
Benzene	U		0.000331	0.00100
Bromobenzene	U		0.000352	0.00100
Bromodichloromethane	U		0.000380	0.00100
Bromoform	U		0.000469	0.00100
Bromomethane	U		0.000866	0.00500
n-Butylbenzene	U		0.000361	0.00100
sec-Butylbenzene	U		0.000365	0.00100
Carbon tetrachloride	U		0.000379	0.00100
tert-Butylbenzene	U		0.000399	0.00100
Chlorobenzene	U		0.000348	0.00100
Chlorodibromomethane	U		0.000327	0.00100
Chloroethane	U		0.000453	0.00500
Chloroform	U		0.000324	0.00500
Chloromethane	U		0.000276	0.00250
1,2-Dibromo-3-Chloropropane	U		0.00133	0.00500
2-Chlorotoluene	U		0.000375	0.00100
1,2-Dibromoethane	U		0.000381	0.00100
4-Chlorotoluene	U		0.000351	0.00100
Dibromomethane	U		0.000346	0.00100
1,2-Dichlorobenzene	U		0.000349	0.00100
1,3-Dichlorobenzene	U		0.000220	0.00100
1,4-Dichlorobenzene	U		0.000274	0.00100
Dichlorodifluoromethane	U		0.000551	0.00500
1,1-Dichloroethane	U		0.000259	0.00100
1,2-Dichloroethane	U		0.000361	0.00100
1,1-Dichloroethene	U		0.000398	0.00100
cis-1,2-Dichloroethene	U		0.000260	0.00100
trans-1,2-Dichloroethene	U		0.000396	0.00100
1,2-Dichloropropane	U		0.000306	0.00100
1,1-Dichloropropene	U		0.000352	0.00100
1,3-Dichloropropane	U		0.000366	0.00100
cis-1,3-Dichloropropene	U		0.000418	0.00100
trans-1,3-Dichloropropene	U		0.000419	0.00100
2,2-Dichloropropane	U		0.000321	0.00100
Di-isopropyl ether	U		0.000320	0.00100
Ethylbenzene	U		0.000384	0.00100
Hexachloro-1,3-butadiene	U		0.000256	0.00100

Method Blank (MB)

(MB) R3370899-3 12/23/18 10:28

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
2-Butanone (MEK)	U		0.00393	0.0100
Isopropylbenzene	U		0.000326	0.00100
p-Isopropyltoluene	U		0.000350	0.00100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100
Methyl tert-butyl ether	U		0.000367	0.00100
Naphthalene	U		0.00100	0.00500
Styrene	U		0.000307	0.00100
1,1,1,2-Tetrachloroethane	U		0.000385	0.00100
n-Propylbenzene	U		0.000349	0.00100
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100
Tetrachloroethene	U		0.000372	0.00100
Toluene	U		0.000412	0.00100
1,1,2-Trichlorotrifluoroethane	U		0.000303	0.00100
1,2,4-Trichlorobenzene	U		0.000355	0.00100
1,1,1-Trichloroethane	U		0.000319	0.00100
1,2,3-Trichlorobenzene	U		0.000230	0.00100
1,1,2-Trichloroethane	U		0.000383	0.00100
Trichloroethene	U		0.000398	0.00100
Trichlorofluoromethane	U		0.00120	0.00500
1,2,3-Trichloropropane	U		0.000807	0.00250
1,2,3-Trimethylbenzene	U		0.000321	0.00100
1,2,4-Trimethylbenzene	U		0.000373	0.00100
1,3,5-Trimethylbenzene	U		0.000387	0.00100
Vinyl chloride	U		0.000259	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*107*			*80.0-120*
(S) Dibromofluoromethane	*102*			*75.0-120*
(S) 4-Bromofluorobenzene	*94.4*			*77.0-126*

Laboratory Control Sample (LCS)

(LCS) R3370899-1 12/23/18 09:06

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.125	0.134	107	19.0-160	
Acrolein	0.125	0.230	184	10.0-160	J4
Acrylonitrile	0.125	0.160	128	55.0-149	
Benzene	0.0250	0.0249	99.7	70.0-123	

Laboratory Control Sample (LCS)

(LCS) R3370899-1 12/23/18 09:06

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromodichloromethane	0.0250	0.0260	104	75.0-120	
Bromoform	0.0250	0.0274	110	68.0-132	
Bromomethane	0.0250	0.0224	89.6	10.0-160	
Carbon tetrachloride	0.0250	0.0234	93.7	68.0-126	
Chlorobenzene	0.0250	0.0274	110	80.0-121	
Bromobenzene	0.0250	0.0249	99.6	73.0-121	
Chlorodibromomethane	0.0250	0.0271	108	77.0-125	
Chloroethane	0.0250	0.0305	122	47.0-150	
Chloroform	0.0250	0.0261	104	73.0-120	
Chloromethane	0.0250	0.0254	101	41.0-142	
n-Butylbenzene	0.0250	0.0291	116	73.0-125	
1,2-Dibromo-3-Chloropropane	0.0250	0.0356	142	58.0-134	J4
sec-Butylbenzene	0.0250	0.0283	113	75.0-125	
1,2-Dibromoethane	0.0250	0.0281	112	80.0-122	
tert-Butylbenzene	0.0250	0.0275	110	76.0-124	
Dibromomethane	0.0250	0.0280	112	80.0-120	
1,2-Dichlorobenzene	0.0250	0.0280	112	79.0-121	
1,3-Dichlorobenzene	0.0250	0.0272	109	79.0-120	
1,4-Dichlorobenzene	0.0250	0.0277	111	79.0-120	
Dichlorodifluoromethane	0.0250	0.0365	146	51.0-149	
1,1-Dichloroethane	0.0250	0.0246	98.3	70.0-126	
1,2-Dichloroethane	0.0250	0.0264	106	70.0-128	
1,1-Dichloroethene	0.0250	0.0271	109	71.0-124	
2-Chlorotoluene	0.0250	0.0269	108	76.0-123	
4-Chlorotoluene	0.0250	0.0272	109	75.0-122	
cis-1,2-Dichloroethene	0.0250	0.0259	103	73.0-120	
trans-1,2-Dichloroethene	0.0250	0.0272	109	73.0-120	
1,2-Dichloropropane	0.0250	0.0270	108	77.0-125	
1,1-Dichloropropene	0.0250	0.0262	105	74.0-126	
1,3-Dichloropropane	0.0250	0.0260	104	80.0-120	
cis-1,3-Dichloropropene	0.0250	0.0283	113	80.0-123	
trans-1,3-Dichloropropene	0.0250	0.0297	119	78.0-124	
2,2-Dichloropropane	0.0250	0.0258	103	58.0-130	
Di-isopropyl ether	0.0250	0.0256	102	58.0-138	
Ethylbenzene	0.0250	0.0272	109	79.0-123	
Hexachloro-1,3-butadiene	0.0250	0.0275	110	54.0-138	
2-Butanone (MEK)	0.125	0.156	125	44.0-160	
Methylene Chloride	0.0250	0.0249	99.7	67.0-120	
4-Methyl-2-pentanone (MIBK)	0.125	0.155	124	68.0-142	
Methyl tert-butyl ether	0.0250	0.0257	103	68.0-125	

Laboratory Control Sample (LCS)

(LCS) R3370899-1 12/23/18 09:06

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Naphthalene	0.0250	0.0327	131	54.0-135	
Styrene	0.0250	0.0288	115	73.0-130	
1,1,1,2-Tetrachloroethane	0.0250	0.0269	108	75.0-125	
1,1,2,2-Tetrachloroethane	0.0250	0.0286	114	65.0-130	
Isopropylbenzene	0.0250	0.0272	109	76.0-127	
p-Isopropyltoluene	0.0250	0.0293	117	76.0-125	
Tetrachloroethene	0.0250	0.0276	111	72.0-132	
Toluene	0.0250	0.0254	101	79.0-120	
1,2,4-Trichlorobenzene	0.0250	0.0302	121	57.0-137	
1,1,1-Trichloroethane	0.0250	0.0248	99.1	73.0-124	
1,1,2-Trichloroethane	0.0250	0.0276	110	80.0-120	
Trichloroethene	0.0250	0.0262	105	78.0-124	
Trichlorofluoromethane	0.0250	0.0273	109	59.0-147	
1,2,3-Trichloropropane	0.0250	0.0311	124	73.0-130	
n-Propylbenzene	0.0250	0.0267	107	77.0-124	
Vinyl chloride	0.0250	0.0273	109	67.0-131	
Xylenes, Total	0.0750	0.0822	110	79.0-123	
1,1,2-Trichlorotrifluoroethane	0.0250	0.0266	106	69.0-132	
1,2,3-Trichlorobenzene	0.0250	0.0346	139	50.0-138	J4
1,2,3-Trimethylbenzene	0.0250	0.0267	107	77.0-120	
1,2,4-Trimethylbenzene	0.0250	0.0264	106	76.0-121	
1,3,5-Trimethylbenzene	0.0250	0.0268	107	76.0-122	
(S) Toluene-d8			*103*	*80.0-120*	
(S) Dibromofluoromethane			*100*	*75.0-120*	
(S) 4-Bromofluorobenzene			*98.5*	*77.0-126*	

Method Blank (MB)

(MB) R3371705-4 12/23/18 15:28

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acetone	U		0.0100	0.0500
Acrolein	U		0.00887	0.0500
Acrylonitrile	U		0.00187	0.0100
Benzene	U		0.000331	0.00100
Bromobenzene	U		0.000352	0.00100
Bromodichloromethane	U		0.000380	0.00100
Bromoform	U		0.000469	0.00100
Bromomethane	U		0.000866	0.00500
n-Butylbenzene	U		0.000361	0.00100
sec-Butylbenzene	U		0.000365	0.00100
tert-Butylbenzene	U		0.000399	0.00100
Carbon tetrachloride	U		0.000379	0.00100
Chlorobenzene	U		0.000348	0.00100
Chlorodibromomethane	U		0.000327	0.00100
Chloroethane	U		0.000453	0.00500
Chloroform	U		0.000324	0.00500
Chloromethane	U		0.000276	0.00250
1,2-Dibromo-3-Chloropropane	U		0.00133	0.00500
2-Chlorotoluene	U		0.000375	0.00100
1,2-Dibromoethane	U		0.000381	0.00100
4-Chlorotoluene	U		0.000351	0.00100
Dibromomethane	U		0.000346	0.00100
1,2-Dichlorobenzene	U		0.000349	0.00100
1,3-Dichlorobenzene	U		0.000220	0.00100
1,4-Dichlorobenzene	U		0.000274	0.00100
Dichlorodifluoromethane	U		0.000551	0.00500
1,1-Dichloroethane	U		0.000259	0.00100
1,2-Dichloroethane	U		0.000361	0.00100
1,1-Dichloroethene	U		0.000398	0.00100
cis-1,2-Dichloroethene	U		0.000260	0.00100
trans-1,2-Dichloroethene	U		0.000396	0.00100
1,2-Dichloropropane	U		0.000306	0.00100
1,1-Dichloropropene	U		0.000352	0.00100
1,3-Dichloropropane	U		0.000366	0.00100
cis-1,3-Dichloropropene	U		0.000418	0.00100
trans-1,3-Dichloropropene	U		0.000419	0.00100
2,2-Dichloropropane	U		0.000321	0.00100
Di-isopropyl ether	U		0.000320	0.00100
Ethylbenzene	U		0.000384	0.00100
Hexachloro-1,3-butadiene	U		0.000256	0.00100

Method Blank (MB)

(MB) R3371705-4 12/23/18 15:28

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Isopropylbenzene	U		0.000326	0.00100
p-Isopropyltoluene	U		0.000350	0.00100
2-Butanone (MEK)	U		0.00393	0.0100
Methyl tert-butyl ether	U		0.000367	0.00100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.000349	0.00100
Styrene	U		0.000307	0.00100
1,1,1,2-Tetrachloroethane	U		0.000385	0.00100
Toluene	U		0.000412	0.00100
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100
Tetrachloroethene	U		0.000372	0.00100
1,1,2-Trichlorotrifluoroethane	U		0.000303	0.00100
1,2,4-Trichlorobenzene	U		0.000355	0.00100
1,1,1-Trichloroethane	U		0.000319	0.00100
1,2,3-Trichlorobenzene	U		0.000230	0.00100
1,1,2-Trichloroethane	U		0.000383	0.00100
1,2,4-Trimethylbenzene	U		0.000373	0.00100
Trichloroethene	U		0.000398	0.00100
1,3,5-Trimethylbenzene	U		0.000387	0.00100
Trichlorofluoromethane	U		0.00120	0.00500
1,2,3-Trichloropropane	U		0.000807	0.00250
1,2,3-Trimethylbenzene	U		0.000321	0.00100
Vinyl chloride	U		0.000259	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*103*			*80.0-120*
(S) Dibromofluoromethane	*94.1*			*75.0-120*
(S) 4-Bromofluorobenzene	*105*			*77.0-126*

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

(LCS) R3371705-1 12/23/18 14:09 • (LCSD) R3371705-2 12/23/18 14:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0217	0.0220	86.7	88.0	70.0-123			1.53	20
Acetone	0.125	0.119	0.113	94.8	90.5	19.0-160			4.63	27
Acrolein	0.125	0.179	0.180	143	144	10.0-160			0.625	26
Acrylonitrile	0.125	0.120	0.120	96.2	95.6	55.0-149			0.660	20

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

(LCS) R3371705-1 12/23/18 14:09 • (LCSD) R3371705-2 12/23/18 14:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
n-Butylbenzene	0.0250	0.0250	0.0257	100	103	73.0-125			2.58	20
sec-Butylbenzene	0.0250	0.0241	0.0246	96.3	98.4	75.0-125			2.09	20
Bromodichloromethane	0.0250	0.0247	0.0251	98.8	100	75.0-120			1.66	20
tert-Butylbenzene	0.0250	0.0244	0.0254	97.7	102	76.0-124			3.94	20
Bromoform	0.0250	0.0222	0.0231	88.6	92.4	68.0-132			4.19	20
Bromomethane	0.0250	0.0296	0.0301	119	120	10.0-160			1.58	25
Carbon tetrachloride	0.0250	0.0260	0.0240	104	96.1	68.0-126			7.75	20
Chlorobenzene	0.0250	0.0266	0.0279	106	112	80.0-121			4.87	20
Bromobenzene	0.0250	0.0260	0.0267	104	107	73.0-121			2.88	20
Chlorodibromomethane	0.0250	0.0253	0.0266	101	106	77.0-125			4.71	20
Chloroethane	0.0250	0.0289	0.0288	116	115	47.0-150			0.253	20
Chloroform	0.0250	0.0254	0.0253	101	101	73.0-120			0.196	20
Chloromethane	0.0250	0.0236	0.0243	94.2	97.1	41.0-142			3.02	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0217	0.0226	87.0	90.5	58.0-134			3.98	20
1,2-Dibromoethane	0.0250	0.0256	0.0264	102	106	80.0-122			3.12	20
Dibromomethane	0.0250	0.0246	0.0246	98.5	98.3	80.0-120			0.202	20
1,2-Dichlorobenzene	0.0250	0.0241	0.0253	96.4	101	79.0-121			4.88	20
1,3-Dichlorobenzene	0.0250	0.0251	0.0253	100	101	79.0-120			0.673	20
1,4-Dichlorobenzene	0.0250	0.0243	0.0251	97.1	100	79.0-120			3.40	20
Dichlorodifluoromethane	0.0250	0.0314	0.0308	126	123	51.0-149			2.01	20
1,1-Dichloroethane	0.0250	0.0246	0.0248	98.4	99.2	70.0-126			0.820	20
1,2-Dichloroethane	0.0250	0.0271	0.0267	108	107	70.0-128			1.54	20
1,1-Dichloroethene	0.0250	0.0223	0.0229	89.2	91.5	71.0-124			2.61	20
2-Chlorotoluene	0.0250	0.0242	0.0248	96.9	99.2	76.0-123			2.35	20
4-Chlorotoluene	0.0250	0.0240	0.0244	96.0	97.8	75.0-122			1.78	20
cis-1,2-Dichloroethene	0.0250	0.0229	0.0229	91.4	91.8	73.0-120			0.356	20
trans-1,2-Dichloroethene	0.0250	0.0232	0.0233	92.7	93.3	73.0-120			0.605	20
1,2-Dichloropropane	0.0250	0.0248	0.0251	99.3	100	77.0-125			1.04	20
1,1-Dichloropropene	0.0250	0.0247	0.0248	98.8	99.1	74.0-126			0.335	20
1,3-Dichloropropane	0.0250	0.0256	0.0273	102	109	80.0-120			6.32	20
Ethylbenzene	0.0250	0.0262	0.0272	105	109	79.0-123			3.63	20
cis-1,3-Dichloropropene	0.0250	0.0250	0.0268	99.9	107	80.0-123			7.05	20
trans-1,3-Dichloropropene	0.0250	0.0262	0.0281	105	112	78.0-124			6.95	20
2,2-Dichloropropane	0.0250	0.0220	0.0219	87.8	87.5	58.0-130			0.361	20
Di-isopropyl ether	0.0250	0.0242	0.0245	96.9	98.2	58.0-138			1.28	20
Isopropylbenzene	0.0250	0.0241	0.0254	96.5	101	76.0-127			4.98	20
p-Isopropyltoluene	0.0250	0.0264	0.0264	106	106	76.0-125			0.0365	20
Hexachloro-1,3-butadiene	0.0250	0.0262	0.0275	105	110	54.0-138			4.87	20
Methyl tert-butyl ether	0.0250	0.0246	0.0250	98.4	99.9	68.0-125			1.52	20
2-Butanone (MEK)	0.125	0.121	0.121	96.8	96.4	44.0-160			0.346	20

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

(LCS) R3371705-1 12/23/18 14:09 • (LCSD) R3371705-2 12/23/18 14:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Methylene Chloride	0.0250	0.0229	0.0227	91.6	90.9	67.0-120			0.731	20
4-Methyl-2-pentanone (MIBK)	0.125	0.137	0.140	110	112	68.0-142			1.90	20
Naphthalene	0.0250	0.0228	0.0241	91.3	96.6	54.0-135			5.66	20
n-Propylbenzene	0.0250	0.0241	0.0244	96.2	97.6	77.0-124			1.42	20
Styrene	0.0250	0.0241	0.0250	96.5	99.8	73.0-130			3.33	20
1,1,1,2-Tetrachloroethane	0.0250	0.0264	0.0273	105	109	75.0-125			3.44	20
Toluene	0.0250	0.0236	0.0246	94.4	98.4	79.0-120			4.16	20
1,1,2,2-Tetrachloroethane	0.0250	0.0233	0.0230	93.4	91.8	65.0-130			1.70	20
Tetrachloroethene	0.0250	0.0258	0.0267	103	107	72.0-132			3.53	20
1,2,4-Trichlorobenzene	0.0250	0.0238	0.0256	95.3	102	57.0-137			7.12	20
1,1,1-Trichloroethane	0.0250	0.0239	0.0243	95.5	97.3	73.0-124			1.86	20
1,1,2-Trichloroethane	0.0250	0.0257	0.0265	103	106	80.0-120			3.04	20
1,2,4-Trimethylbenzene	0.0250	0.0241	0.0251	96.6	101	76.0-121			4.05	20
Trichloroethene	0.0250	0.0267	0.0254	107	101	78.0-124			5.05	20
1,3,5-Trimethylbenzene	0.0250	0.0244	0.0250	97.8	100	76.0-122			2.35	20
Trichlorofluoromethane	0.0250	0.0286	0.0279	115	112	59.0-147			2.71	20
1,2,3-Trichloropropane	0.0250	0.0252	0.0258	101	103	73.0-130			2.33	20
Vinyl chloride	0.0250	0.0286	0.0287	114	115	67.0-131			0.357	20
Xylenes, Total	0.0750	0.0777	0.0808	104	108	79.0-123			3.91	20
1,1,2-Trichlorotrifluoroethane	0.0250	0.0241	0.0241	96.5	96.5	69.0-132			0.0423	20
1,2,3-Trichlorobenzene	0.0250	0.0249	0.0255	99.5	102	50.0-138			2.59	20
1,2,3-Trimethylbenzene	0.0250	0.0247	0.0256	98.6	102	77.0-120			3.72	20
(S) Toluene-d8				*103*	*105*	*80.0-120*				
(S) Dibromofluoromethane				*97.6*	*96.3*	*75.0-120*				
(S) 4-Bromofluorobenzene				*97.8*	*101*	*77.0-126*				

Method Blank (MB)

(MB) R3371391-1 12/26/18 09:16

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Anthracene	U		0.0000140	0.0000500
Acenaphthene	U		0.0000100	0.0000500
Acenaphthylene	U		0.0000120	0.0000500
Benzo(a)anthracene	U		0.00000410	0.0000500
Benzo(a)pyrene	U		0.0000116	0.0000500
Benzo(b)fluoranthene	U		0.00000212	0.0000500
Benzo(g,h,i)perylene	U		0.00000227	0.0000500
Benzo(k)fluoranthene	U		0.0000136	0.0000500
Chrysene	U		0.0000108	0.0000500
Dibenz(a,h)anthracene	U		0.00000396	0.0000500
Fluoranthene	U		0.0000157	0.0000500
Fluorene	U		0.00000850	0.0000500
Indeno(1,2,3-cd)pyrene	U		0.0000148	0.0000500
Naphthalene	U		0.0000198	0.000250
Phenanthrene	U		0.00000820	0.0000500
Pyrene	U		0.0000117	0.0000500
1-Methylnaphthalene	U		0.00000821	0.000250
2-Methylnaphthalene	U		0.00000902	0.000250
2-Chloronaphthalene	U		0.00000647	0.000250
(S) Nitrobenzene-d5	*133*			*31.0-160*
(S) 2-Fluorobiphenyl	*99.0*			*48.0-148*
(S) p-Terphenyl-d14	*106*			*37.0-146*

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

(LCS) R3371391-2 12/26/18 08:32 • (LCSD) R3371391-3 12/26/18 08:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00200	0.00234	0.00222	117	111	67.0-150			5.26	20
Acenaphthene	0.00200	0.00212	0.00204	106	102	65.0-138			3.85	20
Acenaphthylene	0.00200	0.00212	0.00205	106	102	66.0-140			3.36	20
Benzo(a)anthracene	0.00200	0.00186	0.00181	93.0	90.5	61.0-140			2.72	20
Benzo(a)pyrene	0.00200	0.00198	0.00189	99.0	94.5	60.0-143			4.65	20
Benzo(b)fluoranthene	0.00200	0.00195	0.00181	97.5	90.5	58.0-141			7.45	20
Benzo(g,h,i)perylene	0.00200	0.00218	0.00208	109	104	52.0-153			4.69	20
Benzo(k)fluoranthene	0.00200	0.00186	0.00182	93.0	91.0	58.0-148			2.17	20
Chrysene	0.00200	0.00199	0.00188	99.5	94.0	64.0-144			5.68	20
Dibenz(a,h)anthracene	0.00200	0.00213	0.00205	106	102	52.0-155			3.83	20
Fluoranthene	0.00200	0.00221	0.00212	111	106	69.0-153			4.16	20

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

(LCS) R3371391-2 12/26/18 08:32 • (LCSD) R3371391-3 12/26/18 08:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Fluorene	0.00200	0.00189	0.00181	94.5	90.5	64.0-136			4.32	20
Indeno(1,2,3-cd)pyrene	0.00200	0.00212	0.00207	106	103	54.0-153			2.39	20
Naphthalene	0.00200	0.00199	0.00196	99.5	98.0	61.0-137			1.52	20
Phenanthrene	0.00200	0.00198	0.00195	99.0	97.5	62.0-137			1.53	20
Pyrene	0.00200	0.00203	0.00196	102	98.0	60.0-142			3.51	20
1-Methylnaphthalene	0.00200	0.00187	0.00180	93.5	90.0	66.0-142			3.81	20
2-Methylnaphthalene	0.00200	0.00181	0.00172	90.5	86.0	62.0-136			5.10	20
2-Chloronaphthalene	0.00200	0.00194	0.00187	97.0	93.5	64.0-140			3.67	20
(S) Nitrobenzene-d5				*118*	*115*	*31.0-160*				
(S) 2-Fluorobiphenyl				*86.0*	*85.5*	*48.0-148*				
(S) p-Terphenyl-d14				*94.0*	*90.0*	*37.0-146*				

Method Blank (MB)

(MB) R3371738-3 12/26/18 20:25

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Anthracene	U		0.0000140	0.0000500
Acenaphthene	U		0.0000100	0.0000500
Acenaphthylene	U		0.0000120	0.0000500
Benzo(a)anthracene	U		0.00000410	0.0000500
Benzo(a)pyrene	U		0.0000116	0.0000500
Benzo(b)fluoranthene	0.00000466	J	0.00000212	0.0000500
Benzo(g,h,i)perylene	0.00000407	J	0.00000227	0.0000500
Benzo(k)fluoranthene	U		0.0000136	0.0000500
Chrysene	U		0.0000108	0.0000500
Dibenz(a,h)anthracene	U		0.00000396	0.0000500
Fluoranthene	U		0.0000157	0.0000500
Fluorene	U		0.00000850	0.0000500
Indeno(1,2,3-cd)pyrene	U		0.0000148	0.0000500
Naphthalene	0.0000241	J	0.0000198	0.000250
Phenanthrene	U		0.00000820	0.0000500
Pyrene	U		0.0000117	0.0000500
1-Methylnaphthalene	U		0.00000821	0.000250
2-Methylnaphthalene	U		0.00000902	0.000250
2-Chloronaphthalene	U		0.00000647	0.000250
(S) Nitrobenzene-d5	*107*			*31.0-160*
(S) 2-Fluorobiphenyl	*107*			*48.0-148*
(S) p-Terphenyl-d14	*107*			*37.0-146*

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

(LCS) R3371738-1 12/26/18 19:41 • (LCSD) R3371738-2 12/26/18 20:03

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00200	0.00207	0.00210	104	105	67.0-150			1.44	20
Acenaphthene	0.00200	0.00206	0.00209	103	104	65.0-138			1.45	20
Acenaphthylene	0.00200	0.00202	0.00205	101	103	66.0-140			1.47	20
Benzo(a)anthracene	0.00200	0.00197	0.00199	98.5	99.5	61.0-140			1.01	20
Benzo(a)pyrene	0.00200	0.00165	0.00170	82.5	85.0	60.0-143			2.99	20
Benzo(b)fluoranthene	0.00200	0.00168	0.00184	84.0	92.0	58.0-141			9.09	20
Benzo(g,h,i)perylene	0.00200	0.00137	0.00146	68.5	73.0	52.0-153			6.36	20
Benzo(k)fluoranthene	0.00200	0.00158	0.00157	79.0	78.5	58.0-148			0.635	20
Chrysene	0.00200	0.00187	0.00191	93.5	95.5	64.0-144			2.12	20
Dibenz(a,h)anthracene	0.00200	0.00130	0.00139	65.0	69.5	52.0-155			6.69	20
Fluoranthene	0.00200	0.00207	0.00213	104	106	69.0-153			2.86	20

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

(LCS) R3371738-1 12/26/18 19:41 • (LCSD) R3371738-2 12/26/18 20:03

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Fluorene	0.00200	0.00207	0.00212	104	106	64.0-136			2.39	20
Indeno(1,2,3-cd)pyrene	0.00200	0.00140	0.00149	70.0	74.5	54.0-153			6.23	20
Naphthalene	0.00200	0.00209	0.00212	104	106	61.0-137			1.43	20
Phenanthrene	0.00200	0.00213	0.00219	106	109	62.0-137			2.78	20
Pyrene	0.00200	0.00205	0.00208	103	104	60.0-142			1.45	20
1-Methylnaphthalene	0.00200	0.00202	0.00205	101	103	66.0-142			1.47	20
2-Methylnaphthalene	0.00200	0.00203	0.00207	102	104	62.0-136			1.95	20
2-Chloronaphthalene	0.00200	0.00210	0.00212	105	106	64.0-140			0.948	20
(S) Nitrobenzene-d5				*104*	*99.5*	*31.0-160*				
(S) 2-Fluorobiphenyl				*101*	*99.0*	*48.0-148*				
(S) p-Terphenyl-d14				*92.0*	*93.5*	*37.0-146*				

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.

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
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.
J4	The associated batch QC was outside the established quality control range for accuracy.
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.
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	T 104704245-17-14
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

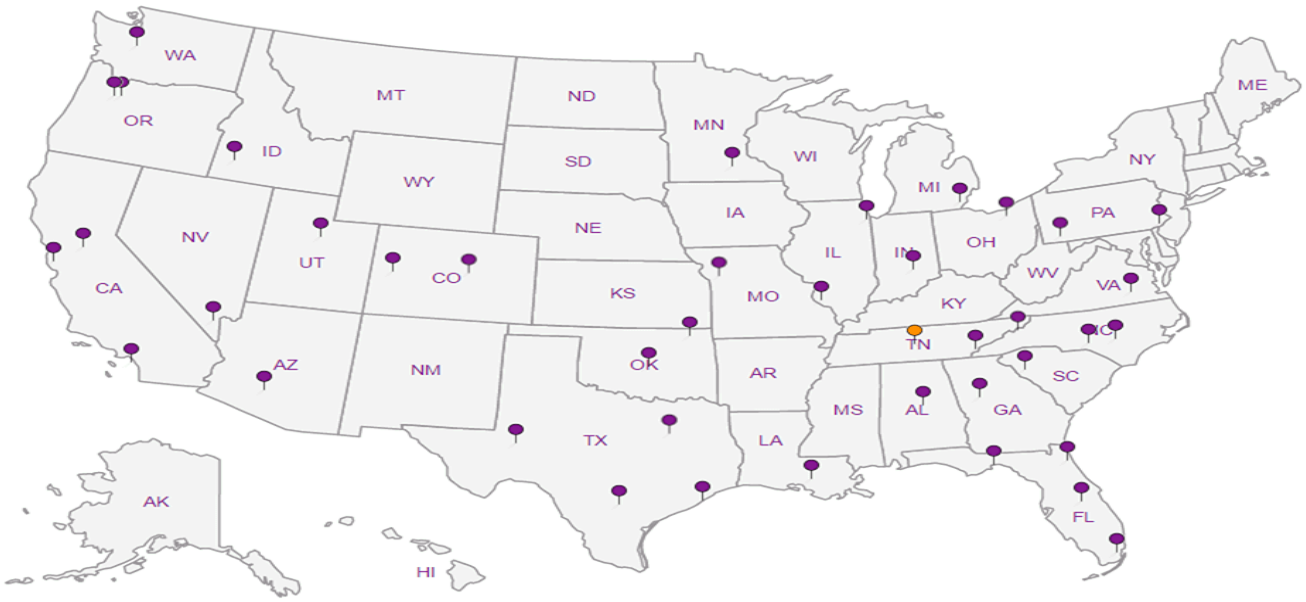
Third Party Federal Accreditations

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.



Terracon-Longmont
1831 Lefthand Circle Suite C
Longmont, CO 80501

Billing Information: **Same as Address**

Pres Chk

Report to: **Mike Skridulis**

Email To: **mike.skridulis@terracon.com**

Project Description: **Union Reservoir**

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

Phone: **303-454-5249**
Fax: **970-484-0454**

Client Project # **22187053**

Lab Project #

Collected by (print): **Charles A. Covington**

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC 8260 (2) 40 ml amber w/ HCl	Diss. Methane, Ethane, Ethylene (2) 40 ml	CO2 - 125 ml HDPE No Pres	Diss, Metals - 250 ml HDPE No Pres*	PAHSIM (2) 40 ml No Pres	Cl, SO4, TDS - 250 ml HDPE No Pres	Remarks	Sample # (lab only)
MW-03-Knight	Grab	GW		12/20/18	0940	9	X	X	X	X	X	X		-01
MW-01	Grab	GW		12/20/18	1245	9	X	X	X	X	X	X		-02
MW-02	Grab	GW		12/20/18	1215	9	X	X	X	X	X	X		-03
MW-03	Grab	GW		12/20/18	0940	9	X	X	X	X	X	X		-04

Analysis / Container / Preservative

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# LID55425
C055

Acctnum: TERRALCO
Template:
Prelogin:
TSR: Daphne Richards
PB:
Shipped Via:

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

Remarks:
*** Diss Metals: arsenic, barium, boron, cadmium, chromium III, chromium IV, copper, lead, mercury, nickel, selenium, silver, zinc**

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__UPS __FedEx __Courier _____

Tracking # FedEx 4510 6667 2338

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	12/20/18	3:00		0	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 0.1+0.3=0.4°C 36	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 12/21/18 Time: 10:00	Hold: Condition: NCF / OK