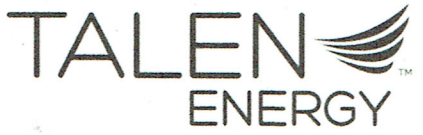


**Brunner Island, LLC
REGULATORY DELIVERABLE
SUBMITTAL COVER SHEET**

Date:		Transmittal No.:	
DOCUMENT DESCRIPTION:			
CONSENT DECREE REFERENCE:		Paragraph No.:	
BRIEF DESCRIPTION OF OUTLINED REQUIREMENT:			
RECIPIENT(S):			
NAME:		ORGANIZATION:	
Brunner Island, LLC Contact Name:			
Brunner Island, LLC Contact Phone:			
Mailing Address: Brunner Island, LLC P. O. Box 221 York Haven, PA 17370		Street Address: Brunner Island, LLC 1400 Wago Road Mt. Wolf, PA 17347	



Marcia Thiess • Regulatory Affairs Senior Professional
Brunner Island SES • Talen Generation, LLC
PO Box 221 • York Haven, PA 17370-0221
(717) 268-1531 • Marcia.Thiess@talenergy.com

July 15, 2020

Maria Bebenek, P.E.
Clean Water Program
PA DEP – SCRO
909 Elmerton Avenue
Harrisburg, PA 17110

BRUNNER ISLAND, LLC – Black Gut Creek Surface Water Sample Results – April 2020

Dear Ms. Bebenek:

Enclosed are the surface water sample results and sample location coordinates and map from the April 16, 2020 sampling of Black Gut Creek for Brunner Island Steam Electric Generating Station. The sampling was conducted following the work plan developed and approved per Consent Decree Paragraph 37, which requires submission of the surface water sample results within 90 days of each of the four sampling events.

Should you have any questions regarding the surface water sampling data, please contact me at (717) 268-1531 (email: marcia.thiess@talenergy.com).

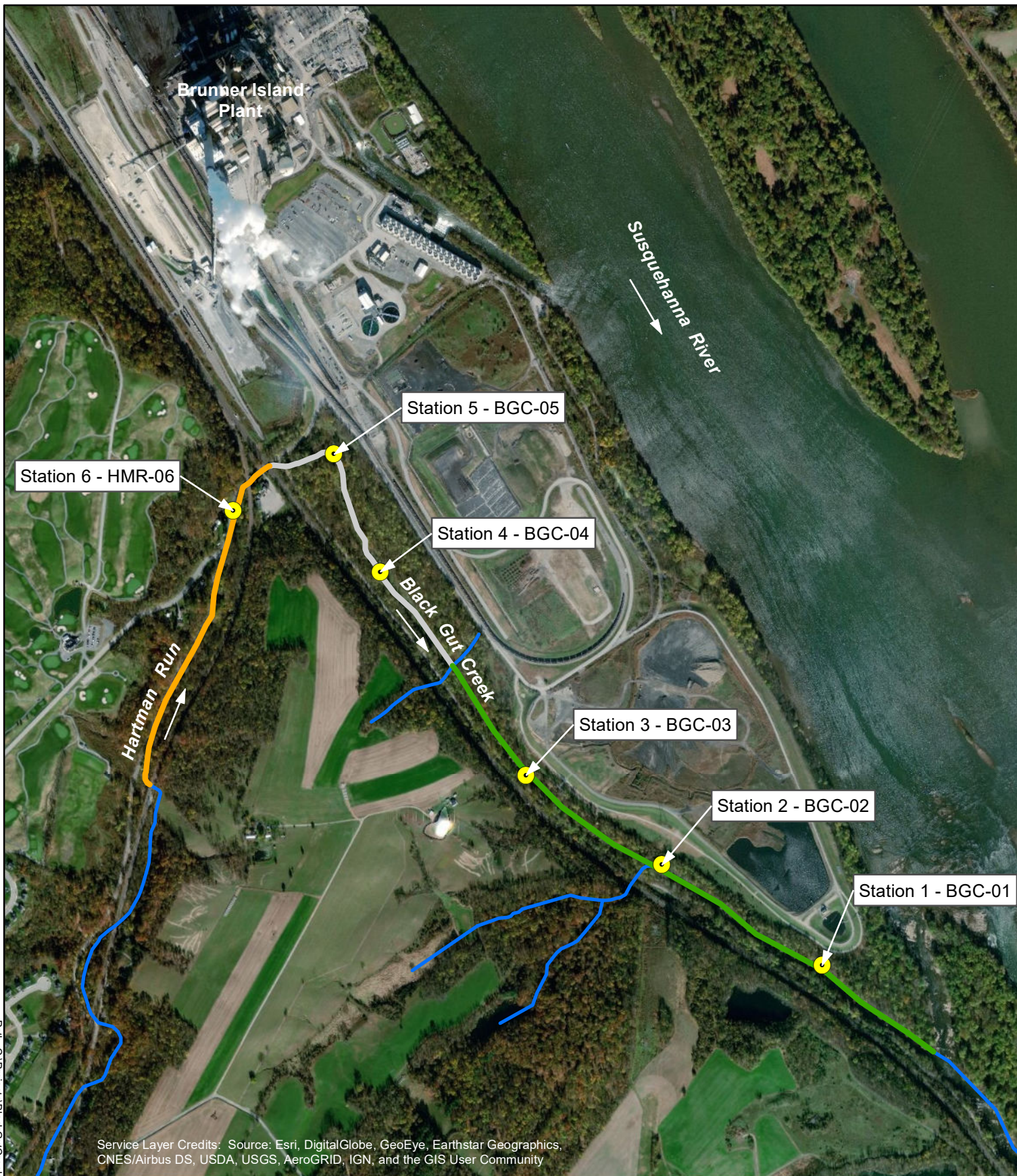
Sincerely,

A handwritten signature in blue ink that reads "Marcia Thiess". The signature is fluid and cursive, with a large initial "M" and "T".

Marcia Thiess
Regulatory Affairs Senior Professional

Enclosures

Cc: C. Shamory TALEN (CORP)
Env Files



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- Station Location
- ~ Streams
- Reach 1
- Reach 2
- Reach 3

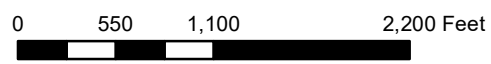


Figure 1.
Surface Water and Macroinvertebrate
Sampling Stations in Black Gut Creek
and Hartman Run near Brunner Island, LLC.,
York County, Pennsylvania.
 Date: 4/23/2020



Path: C:\Project\BlackGutCreek_24416\MXD\Black_Gut_Creek.mxd

Prepared for: sadams
 Prepared by: salshearn
 Project: 24416.000

Table 1.

Station coordinates of surface water and macroinvertebrate sampling locations of Black Gut Creek and Hartman Run near Brunner Island, LLC, April 2020-November 2021.

REACH #1 - 1,576 meters long; unnamed trib and side channel to Susquehanna River		
STATION 1 - BGC-01 N 40° 04.546' W 076° 40.745' OR N 40° 4' 32.76" W 76° 40' 44.70"	STATION 2 - BGC-02 N 40° 04.686' W 076° 41.028' OR N 40° 4' 41.16" W 76° 41' 1.68"	STATION 3 - BGC-03 N 40° 04.811' W 076° 41.268' OR N 40° 4' 48.66" W 76° 41' 16.08"
REACH #2 - 824 meters long; from Gut Road Bridge to top of Reach #1		
STATION 4 - BGC-04 N 40° 05.092' W 076° 41.524' OR N 40° 5' 5.52" W 76° 41' 31.44"	STATION 5 - BGC-05 N 40° 05.254' W 076° 41.604' OR N 40° 5' 15.24" W 76° 41' 36.24"	
REACH #3 - Upstream from Black Gut Creek along Hartman Run		
STATION 6 - HMR-06 N 40° 05.178' W 076° 41.785' OR N 40° 5' 10.68" W 76° 41' 47.10"		



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Normandeau Associates, Inc.
1921 River Road
PO Box 10
Drumore PA 17518

Report Date: May 13, 2020 04:45

Project: Black Gut Creek/24416.000

Account #: 10300
Group Number: 2096408
PO Number: 24416.000
State of Sample Origin: PA

Electronic Copy To Normandeau Associates, Inc.

Attn: Steve Adams

Respectfully Submitted,



Marrissa Williams
Project Manager

(717) 556-7246

To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/>. Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
20-04-16 BGC01-01 Grab Surface Water	04/16/2020 08:45	1299330
20-04-16 BGC01-01 Filtered Grab Surface Water	04/16/2020 08:45	1299331
20-04-16 BGC01-02 Grab Surface Water	04/16/2020 09:40	1299332
20-04-16 BGC01-02 Filtered Grab Surface Water	04/16/2020 09:40	1299333
20-04-16 BGC01-03 Grab Surface Water	04/16/2020 10:35	1299334
20-04-16 BGC01-03 Filtered Grab Surface Water	04/16/2020 10:35	1299335
20-04-16 BGC01-04 Grab Surface Water	04/16/2020 12:45	1299336
20-04-16 BGC01-04 Filtered Grab Surface Water	04/16/2020 12:45	1299337
20-04-16 BGC01-05 Grab Surface Water	04/16/2020 11:48	1299338
20-04-16 BGC01-05 Filtered Grab Surface Water	04/16/2020 11:48	1299339
20-04-16 HMR01-06 Grab Surface Water	04/16/2020 13:30	1299340
20-04-16 HMR01-06 MS Grab Surface Water	04/16/2020 13:43	1299341
20-04-16 HMR01-06 MSD Grab Surface Water	04/16/2020 13:48	1299342
20-04-16 HMR01-06 DUP Grab Surface Water	04/16/2020 13:30	1299343
20-04-16 HMR01-06 Filtered Grab Surface Water	04/16/2020 13:30	1299344
20-04-16 HMR01-06 MS Filtered Grab Surface Water	04/16/2020 13:43	1299345
20-04-16 HMR01-06 MSD Filtered Grab Surface Water	04/16/2020 13:48	1299346
20-04-16 HMR01-06 DUP Filtered Grab Surface Water	04/16/2020 13:30	1299347
20-04-16 DUP01 Grab Surface Water	04/16/2020 10:48	1299348
20-04-16 DUP01 Filtered Grab Surface Water	04/16/2020 10:48	1299349

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: 20-04-16 BGC01-01 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299330
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 08:45

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals						
EPA 200.7 rev 4.4			mg/l	mg/l	mg/l	
08014	Boron	7440-42-8	0.0846	0.0120	0.0300	1
01750	Calcium	7440-70-2	35.4	0.0960	0.200	1
01754	Iron	7439-89-6	0.543	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	8.76	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0062 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.42	0.204	0.500	1
01767	Sodium	7440-23-5	13.9	0.239	1.00	1
EPA 200.8 rev 5.4			mg/l	mg/l	mg/l	
06023	Aluminum	7429-90-5	0.265	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	0.0015 J	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0465	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.00075 J	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.00039 J	0.00016	0.00050	1
06035	Lead	7439-92-1	0.00077	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.221	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.0011	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0021	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
EPA 245.1 rev 3			mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
SM 2340 B-2011			mg/l	mg/l	mg/l	
06256	Total Hardness as CaCO ₃ ¹	471-34-1	124	0.096	0.20	1
EPA 300.0			mg/l	mg/l	mg/l	
00224	Chloride	16887-00-6	21.8	1.0	2.0	5
01504	Fluoride	16984-48-8	N.D. K4	0.25	0.50	5
00228	Sulfate	14808-79-8	40.1	1.5	5.0	5
SM 2510 B-2011			umhos/cm	umhos/cm	umhos/cm	
12146	Specific Conductance	n.a.	323	1.7	5.0	1
SM 2540 C-2011			mg/l	mg/l	mg/l	
06649	Total Dissolved Solids	n.a.	185	10.0	30.0	1
SM 2550 B-2010			Degrees C	Degrees C	Degrees C	
12151	Temperature of pH	n.a.	22.0	0.010	0.010	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-01 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299330
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 08:45

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Wet Chemistry						
12152	pH	SM 4500-H+ B-2011 n.a.	8.0	0.010	0.010	1
SM 4500-O G-2011						
00428	Dissolved Oxygen	7782-44-7	9.97	0.40	0.40	1
	Dissolved oxygen measurement: date: 04/16/2020 time: 21:31 sample temperature: 18.46 degrees Celsius					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.

¹ = This analyte was not on the laboratory's PA DEP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:52	Cindy M Gehman	1
01750	Calcium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:52	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:52	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:52	Cindy M Gehman	1
01757	Magnesium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:52	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:52	Cindy M Gehman	1
01762	Potassium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:52	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:52	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201120705004A	04/23/2020 10:00	Bradley M Berlot	1
06024	Antimony	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:19	Janeyah Rivers-Hamilton	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:19	Janeyah Rivers-Hamilton	1
06026	Barium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:19	Janeyah Rivers-Hamilton	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:19	Janeyah Rivers-Hamilton	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:19	Janeyah Rivers-Hamilton	1
06031	Chromium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:19	Janeyah Rivers-Hamilton	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:19	Janeyah Rivers-Hamilton	1
06035	Lead	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:19	Janeyah Rivers-Hamilton	1
06037	Manganese	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:19	Janeyah Rivers-Hamilton	1
06039	Nickel	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:19	Janeyah Rivers-Hamilton	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-01 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299330
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 08:45

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06041	Selenium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:19	Janeyah Rivers-Hamilton	1
06045	Thallium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:19	Janeyah Rivers-Hamilton	1
00259	Mercury	EPA 245.1 rev 3	1	201120571401	04/22/2020 08:48	Christina Termini	1
06256	Total Hardness as CaCO3	SM 2340 B-2011	1	201140625601	04/23/2020 10:31	Tshina Alamos	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 03:07	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201120705004	04/22/2020 03:30	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201120571401	04/21/2020 16:05	JoElla L Rice	1
00224	Chloride	EPA 300.0	1	20112135117A	04/21/2020 09:24	Kevin Litwa	5
01504	Fluoride	EPA 300.0	1	20112135117A	04/30/2020 09:38	Niyati Desai	5
00228	Sulfate	EPA 300.0	1	20112135117A	04/21/2020 09:24	Kevin Litwa	5
12146	Specific Conductance	SM 2510 B-2011	1	20108005202A	04/17/2020 21:36	Jeremy L Bolf	1
06649	Total Dissolved Solids	SM 2540 C-2011	1	20111964901A	04/20/2020 09:18	Amy L Cramer	1
12151	Temperature of pH	SM 2550 B-2010	1	20108005202A	04/17/2020 21:36	Jeremy L Bolf	1
12152	pH	SM 4500-H+ B-2011	1	20108005202A	04/17/2020 21:36	Jeremy L Bolf	1
00428	Dissolved Oxygen	SM 4500-O G-2011	1	20107042801A	04/16/2020 21:31	Lauren Shelmet	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-01 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299331
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 08:45

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals Dissolved			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.0866	0.0120	0.0300	1
01754	Iron	7439-89-6	0.136 J	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	8.45	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0066 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.36	0.204	0.500	1
01767	Sodium	7440-23-5	13.6	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	N.D.	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	0.0014 J	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0423	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.00042 J	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.00025 J	0.00016	0.00050	1
06035	Lead	7439-92-1	0.00014 J	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.0998	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.0010	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0020	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

03277 Lab Filtration - Metals

The holding time was not met for dissolved sample filtration. The filtration time for dissolved metals is to be within 15 minutes from collection. Since the filtration occurred after receipt in the laboratory, the 15 minute criteria was exceeded. This sample was not collected per applicable Clean Water Act (40CFR136) or SW-846 regulations.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.
This sample was filtered in the lab for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 22:55	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 22:55	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 22:55	Cindy M Gehman	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-01 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299331
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 08:45

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01757	Magnesium	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 22:55	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201120571605	04/23/2020 05:33	Lisa J Cooke	1
01762	Potassium	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 22:55	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 22:55	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:20	Janeyah Rivers-Hamilton	1
06024	Antimony	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:20	Janeyah Rivers-Hamilton	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:20	Janeyah Rivers-Hamilton	1
06026	Barium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:20	Janeyah Rivers-Hamilton	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:20	Janeyah Rivers-Hamilton	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:20	Janeyah Rivers-Hamilton	1
06031	Chromium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:20	Janeyah Rivers-Hamilton	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:20	Janeyah Rivers-Hamilton	1
06035	Lead	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:20	Janeyah Rivers-Hamilton	1
06037	Manganese	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:20	Janeyah Rivers-Hamilton	1
06039	Nickel	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:20	Janeyah Rivers-Hamilton	1
06041	Selenium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:20	Janeyah Rivers-Hamilton	1
06045	Thallium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:20	Janeyah Rivers-Hamilton	1
00259	Mercury	EPA 245.1 rev 3	1	201120571402	04/22/2020 09:09	Christina Termini	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 03:15	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201120705003	04/22/2020 03:30	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201120571402	04/21/2020 16:05	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-02 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299332
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 09:40

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals						
EPA 200.7 rev 4.4			mg/l	mg/l	mg/l	
08014	Boron	7440-42-8	0.0919	0.0120	0.0300	1
01750	Calcium	7440-70-2	37.4	0.0960	0.200	1
01754	Iron	7439-89-6	0.249	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	9.41	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0048 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.55	0.204	0.500	1
01767	Sodium	7440-23-5	14.7	0.239	1.00	1
EPA 200.8 rev 5.4			mg/l	mg/l	mg/l	
06023	Aluminum	7429-90-5	0.0719	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0526	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.00070 J	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.00027 J	0.00016	0.00050	1
06035	Lead	7439-92-1	0.00021 J	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.214	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.0011	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0021	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
EPA 245.1 rev 3			mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
SM 2340 B-2011			mg/l	mg/l	mg/l	
06256	Total Hardness as CaCO ₃ ¹	471-34-1	132	0.096	0.20	1
EPA 300.0			mg/l	mg/l	mg/l	
00224	Chloride	16887-00-6	22.5	1.0	2.0	5
01504	Fluoride	16984-48-8	N.D. K4	0.25	0.50	5
00228	Sulfate	14808-79-8	42.7	1.5	5.0	5
SM 2510 B-2011			umhos/cm	umhos/cm	umhos/cm	
12146	Specific Conductance	n.a.	337	1.7	5.0	1
SM 2540 C-2011			mg/l	mg/l	mg/l	
06649	Total Dissolved Solids	n.a.	190	10.0	30.0	1
SM 2550 B-2010			Degrees C	Degrees C	Degrees C	
12151	Temperature of pH	n.a.	21.6	0.010	0.010	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-02 Grab Surface Water
Black Gut Creek/24416.000

Normandeu Associates, Inc.
ELLE Sample #: WW 1299332
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 09:40

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Wet Chemistry						
12152	pH	SM 4500-H+ B-2011 n.a.	Std. Units 7.8	Std. Units 0.010	Std. Units 0.010	1
SM 4500-O G-2011						
00428	Dissolved Oxygen	7782-44-7	mg/l 9.20	mg/l 0.40	mg/l 0.40	1
	Dissolved oxygen measurement: date: 04/16/2020 time: 21:33 sample temperature: 18.21 degrees Celsius					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.

¹ = This analyte was not on the laboratory's PA DEP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:49	Cindy M Gehman	1
01750	Calcium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:49	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:49	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:49	Cindy M Gehman	1
01757	Magnesium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:49	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:49	Cindy M Gehman	1
01762	Potassium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:49	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:49	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:16	Janeyah Rivers-Hamilton	1
06024	Antimony	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:16	Janeyah Rivers-Hamilton	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:16	Janeyah Rivers-Hamilton	1
06026	Barium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:16	Janeyah Rivers-Hamilton	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:16	Janeyah Rivers-Hamilton	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:16	Janeyah Rivers-Hamilton	1
06031	Chromium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:16	Janeyah Rivers-Hamilton	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:16	Janeyah Rivers-Hamilton	1
06035	Lead	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:16	Janeyah Rivers-Hamilton	1
06037	Manganese	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:16	Janeyah Rivers-Hamilton	1
06039	Nickel	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:16	Janeyah Rivers-Hamilton	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-02 Grab Surface Water
Black Gut Creek/24416.000

Normandeu Associates, Inc.
ELLE Sample #: WW 1299332
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 09:40

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06041	Selenium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:16	Janeyah Rivers-Hamilton	1
06045	Thallium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:16	Janeyah Rivers-Hamilton	1
00259	Mercury	EPA 245.1 rev 3	1	201120571401	04/22/2020 08:46	Christina Termini	1
06256	Total Hardness as CaCO3	SM 2340 B-2011	1	201140625601	04/23/2020 10:31	Tshina Alamos	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 03:07	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201120705004	04/22/2020 03:30	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201120571401	04/21/2020 16:05	JoElla L Rice	1
00224	Chloride	EPA 300.0	1	20112135117A	04/21/2020 09:44	Kevin Litwa	5
01504	Fluoride	EPA 300.0	1	20112135117A	04/30/2020 09:55	Niyati Desai	5
00228	Sulfate	EPA 300.0	1	20112135117A	04/21/2020 09:44	Kevin Litwa	5
12146	Specific Conductance	SM 2510 B-2011	1	20108005202A	04/17/2020 21:26	Jeremy L Bolf	1
06649	Total Dissolved Solids	SM 2540 C-2011	1	20112964901A	04/21/2020 08:06	Amy L Cramer	1
12151	Temperature of pH	SM 2550 B-2010	1	20108005202A	04/17/2020 21:26	Jeremy L Bolf	1
12152	pH	SM 4500-H+ B-2011	1	20108005202A	04/17/2020 21:26	Jeremy L Bolf	1
00428	Dissolved Oxygen	SM 4500-O G-2011	1	20107042801A	04/16/2020 21:31	Lauren Shelmet	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-02 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299333
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 09:40

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals Dissolved			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.0879	0.0120	0.0300	1
01754	Iron	7439-89-6	0.0858 J	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	8.85	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0050 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.36	0.204	0.500	1
01767	Sodium	7440-23-5	13.7	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	N.D.	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0508	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.00036 J	0.00033	0.0020	1
06032	Cobalt	7440-48-4	N.D.	0.00016	0.00050	1
06035	Lead	7439-92-1	N.D.	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.0736	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.0010	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0020	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

03277 Lab Filtration - Metals

The holding time was not met for dissolved sample filtration. The filtration time for dissolved metals is to be within 15 minutes from collection. Since the filtration occurred after receipt in the laboratory, the 15 minute criteria was exceeded. This sample was not collected per applicable Clean Water Act (40CFR136) or SW-846 regulations.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.
This sample was filtered in the lab for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 22:58	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 22:58	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 22:58	Cindy M Gehman	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-02 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299333
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 09:40

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01757	Magnesium	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 22:58	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201120571605	04/23/2020 05:36	Lisa J Cooke	1
01762	Potassium	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 22:58	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 22:58	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:22	Janeyah Rivers-Hamilton	1
06024	Antimony	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:22	Janeyah Rivers-Hamilton	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:22	Janeyah Rivers-Hamilton	1
06026	Barium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:22	Janeyah Rivers-Hamilton	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:22	Janeyah Rivers-Hamilton	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:22	Janeyah Rivers-Hamilton	1
06031	Chromium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:22	Janeyah Rivers-Hamilton	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:22	Janeyah Rivers-Hamilton	1
06035	Lead	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:22	Janeyah Rivers-Hamilton	1
06037	Manganese	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:22	Janeyah Rivers-Hamilton	1
06039	Nickel	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:22	Janeyah Rivers-Hamilton	1
06041	Selenium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:22	Janeyah Rivers-Hamilton	1
06045	Thallium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:22	Janeyah Rivers-Hamilton	1
00259	Mercury	EPA 245.1 rev 3	1	201120571402	04/22/2020 09:11	Christina Termini	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 03:15	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201120705003	04/22/2020 03:30	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201120571402	04/21/2020 16:05	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-03 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299334
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 10:35

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals						
EPA 200.7 rev 4.4			mg/l	mg/l	mg/l	
08014	Boron	7440-42-8	0.0941	0.0120	0.0300	1
01750	Calcium	7440-70-2	37.5	0.0960	0.200	1
01754	Iron	7439-89-6	0.249	0.0400	0.200	1
01756	Lithium	7439-93-2	0.0113 J	0.0110	0.0500	1
01757	Magnesium	7439-95-4	9.36	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0046 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.39	0.204	0.500	1
01767	Sodium	7440-23-5	14.2	0.239	1.00	1
EPA 200.8 rev 5.4			mg/l	mg/l	mg/l	
06023	Aluminum	7429-90-5	0.0836	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0485	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.00051 J	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.00019 J	0.00016	0.00050	1
06035	Lead	7439-92-1	0.00028 J	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.183	0.00063	0.0020	1
06039	Nickel	7440-02-0	N.D.	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0025	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
EPA 245.1 rev 3			mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
SM 2340 B-2011			mg/l	mg/l	mg/l	
06256	Total Hardness as CaCO ₃ ¹	471-34-1	132	0.096	0.20	1
EPA 300.0			mg/l	mg/l	mg/l	
00224	Chloride	16887-00-6	20.8	1.0	2.0	5
01504	Fluoride	16984-48-8	N.D. K4	0.25	0.50	5
00228	Sulfate	14808-79-8	42.2	1.5	5.0	5
SM 2510 B-2011			umhos/cm	umhos/cm	umhos/cm	
12146	Specific Conductance	n.a.	335	1.7	5.0	1
SM 2540 C-2011			mg/l	mg/l	mg/l	
06649	Total Dissolved Solids	n.a.	194	10.0	30.0	1
SM 2550 B-2010			Degrees C	Degrees C	Degrees C	
12151	Temperature of pH	n.a.	21.7	0.010	0.010	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-03 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299334
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 10:35

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Wet Chemistry						
12152	pH	SM 4500-H+ B-2011 n.a.	Std. Units 7.9	Std. Units 0.010	Std. Units 0.010	1
SM 4500-O G-2011						
00428	Dissolved Oxygen	7782-44-7	mg/l 11.7	mg/l 0.40	mg/l 0.40	1
	Dissolved oxygen measurement: date: 04/16/2020 time: 21:35 sample temperature: 17.86 degrees Celsius					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.

¹ = This analyte was not on the laboratory's PA DEP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:30	Cindy M Gehman	1
01750	Calcium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:30	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:30	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:30	Cindy M Gehman	1
01757	Magnesium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:30	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:30	Cindy M Gehman	1
01762	Potassium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:30	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:30	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201120705002A	04/24/2020 09:07	Bradley M Berlot	1
06024	Antimony	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:52	Janeyah Rivers-Hamilton	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:52	Janeyah Rivers-Hamilton	1
06026	Barium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:52	Janeyah Rivers-Hamilton	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:52	Janeyah Rivers-Hamilton	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:52	Janeyah Rivers-Hamilton	1
06031	Chromium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:52	Janeyah Rivers-Hamilton	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:52	Janeyah Rivers-Hamilton	1
06035	Lead	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:52	Janeyah Rivers-Hamilton	1
06037	Manganese	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:52	Janeyah Rivers-Hamilton	1
06039	Nickel	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:52	Janeyah Rivers-Hamilton	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-03 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299334
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 10:35

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06041	Selenium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:52	Janeyah Rivers-Hamilton	1
06045	Thallium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:52	Janeyah Rivers-Hamilton	1
00259	Mercury	EPA 245.1 rev 3	1	201120571401	04/22/2020 08:38	Christina Termini	1
06256	Total Hardness as CaCO3	SM 2340 B-2011	1	201140625601	04/23/2020 10:31	Tshina Alamos	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 03:07	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201120705002	04/22/2020 03:31	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201120571401	04/21/2020 16:05	JoElla L Rice	1
00224	Chloride	EPA 300.0	1	20112135117A	04/21/2020 10:03	Kevin Litwa	5
01504	Fluoride	EPA 300.0	1	20112135117A	04/30/2020 10:13	Niyati Desai	5
00228	Sulfate	EPA 300.0	1	20112135117A	04/21/2020 10:03	Kevin Litwa	5
12146	Specific Conductance	SM 2510 B-2011	1	20108005202A	04/17/2020 21:41	Jeremy L Bolf	1
06649	Total Dissolved Solids	SM 2540 C-2011	1	20111964901A	04/20/2020 09:18	Amy L Cramer	1
12151	Temperature of pH	SM 2550 B-2010	1	20108005202A	04/17/2020 21:41	Jeremy L Bolf	1
12152	pH	SM 4500-H+ B-2011	1	20108005202A	04/17/2020 21:41	Jeremy L Bolf	1
00428	Dissolved Oxygen	SM 4500-O G-2011	1	20107042801A	04/16/2020 21:31	Lauren Shelmet	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-03 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299335
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 10:35

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals Dissolved			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.0948	0.0120	0.0300	1
01754	Iron	7439-89-6	0.0411 J	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	9.02	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0050 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.29	0.204	0.500	1
01767	Sodium	7440-23-5	13.5	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	N.D.	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0461	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.00038 J	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.00023 J	0.00016	0.00050	1
06035	Lead	7439-92-1	N.D.	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.123	0.00063	0.0020	1
06039	Nickel	7440-02-0	N.D.	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0025	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	0.000054 J	0.000050	0.00020	1

03277 Lab Filtration - Metals

The holding time was not met for dissolved sample filtration. The filtration time for dissolved metals is to be within 15 minutes from collection. Since the filtration occurred after receipt in the laboratory, the 15 minute criteria was exceeded. This sample was not collected per applicable Clean Water Act (40CFR136) or SW-846 regulations.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.
This sample was filtered in the lab for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201130571605	04/27/2020 05:28	Lisa J Cooke	1
01754	Iron	EPA 200.7 rev 4.4	1	201130571605	04/27/2020 05:28	Lisa J Cooke	1
01756	Lithium	EPA 200.7 rev 4.4	1	201130571605	04/26/2020 18:49	Elaine F Stoltzfus	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-03 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299335
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 10:35

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01757	Magnesium	EPA 200.7 rev 4.4	1	201130571605	04/26/2020 18:49	Elaine F Stoltzfus	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201130571605	04/27/2020 05:28	Lisa J Cooke	1
01762	Potassium	EPA 200.7 rev 4.4	1	201130571605	04/26/2020 18:49	Elaine F Stoltzfus	1
01767	Sodium	EPA 200.7 rev 4.4	1	201130571605	04/26/2020 18:49	Elaine F Stoltzfus	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:46	Bradley M Berlot	1
06024	Antimony	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:46	Bradley M Berlot	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:46	Bradley M Berlot	1
06026	Barium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:46	Bradley M Berlot	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:46	Bradley M Berlot	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:46	Bradley M Berlot	1
06031	Chromium	EPA 200.8 rev 5.4	1	201130705003A	04/24/2020 09:55	Bradley M Berlot	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:46	Bradley M Berlot	1
06035	Lead	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:46	Bradley M Berlot	1
06037	Manganese	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:46	Bradley M Berlot	1
06039	Nickel	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:46	Bradley M Berlot	1
06041	Selenium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:46	Bradley M Berlot	1
06045	Thallium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:46	Bradley M Berlot	1
00259	Mercury	EPA 245.1 rev 3	1	201130571402	04/24/2020 07:56	Christina Termini	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201130571605	04/23/2020 03:00	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201130705003	04/23/2020 03:24	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201130571402	04/23/2020 05:06	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-04 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299336
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 12:45

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.0912	0.0120	0.0300	1
01750	Calcium	7440-70-2	35.8	0.0960	0.200	1
01754	Iron	7439-89-6	0.162 J	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	9.04	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0041 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.55	0.204	0.500	1
01767	Sodium	7440-23-5	15.2	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	0.0374	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0447	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.00048 J	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.00017 J	0.00016	0.00050	1
06035	Lead	7439-92-1	0.00015 J	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.136	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.00064 J	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0024	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
			SM 2340 B-2011	mg/l	mg/l	
06256	Total Hardness as CaCO ₃ ¹	471-34-1	127	0.096	0.20	1
Wet Chemistry			EPA 300.0	mg/l	mg/l	
00224	Chloride	16887-00-6	23.4	1.0	2.0	5
01504	Fluoride	16984-48-8	N.D. K4	0.25	0.50	5
00228	Sulfate	14808-79-8	41.2	1.5	5.0	5
			SM 2510 B-2011	umhos/cm	umhos/cm	
12146	Specific Conductance	n.a.	331	1.7	5.0	1
			SM 2540 C-2011	mg/l	mg/l	
06649	Total Dissolved Solids	n.a.	190	10.0	30.0	1
			SM 2550 B-2010	Degrees C	Degrees C	
12151	Temperature of pH	n.a.	22.5	0.010	0.010	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-04 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299336
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 12:45

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Wet Chemistry						
12152	pH	SM 4500-H+ B-2011 n.a.	8.3	0.010	0.010	1
SM 4500-O G-2011						
00428	Dissolved Oxygen	7782-44-7	12.5	0.40	0.40	1
	Dissolved oxygen measurement: date: 04/16/2020 time: 21:37 sample temperature: 18.00 degrees Celsius					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.

¹ = This analyte was not on the laboratory's PA DEP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:33	Cindy M Gehman	1
01750	Calcium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:33	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:33	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:33	Cindy M Gehman	1
01757	Magnesium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:33	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:33	Cindy M Gehman	1
01762	Potassium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:33	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:33	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:39	Janeyah Rivers-Hamilton	1
06024	Antimony	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:39	Janeyah Rivers-Hamilton	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:39	Janeyah Rivers-Hamilton	1
06026	Barium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:39	Janeyah Rivers-Hamilton	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:39	Janeyah Rivers-Hamilton	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:39	Janeyah Rivers-Hamilton	1
06031	Chromium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:39	Janeyah Rivers-Hamilton	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:39	Janeyah Rivers-Hamilton	1
06035	Lead	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:39	Janeyah Rivers-Hamilton	1
06037	Manganese	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:39	Janeyah Rivers-Hamilton	1
06039	Nickel	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:39	Janeyah Rivers-Hamilton	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-04 Grab Surface Water
Black Gut Creek/24416.000

Normandeu Associates, Inc.
ELLE Sample #: WW 1299336
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 12:45

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06041	Selenium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:39	Janeyah Rivers-Hamilton	1
06045	Thallium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:39	Janeyah Rivers-Hamilton	1
00259	Mercury	EPA 245.1 rev 3	1	201120571401	04/22/2020 08:40	Christina Termini	1
06256	Total Hardness as CaCO3	SM 2340 B-2011	1	201140625601	04/23/2020 10:31	Tshina Alamos	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 03:07	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201120705003	04/22/2020 03:30	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201120571401	04/21/2020 16:05	JoElla L Rice	1
00224	Chloride	EPA 300.0	1	20112135117A	04/21/2020 10:23	Kevin Litwa	5
01504	Fluoride	EPA 300.0	1	20112135117A	04/30/2020 10:30	Niyati Desai	5
00228	Sulfate	EPA 300.0	1	20112135117A	04/21/2020 10:23	Kevin Litwa	5
12146	Specific Conductance	SM 2510 B-2011	1	20108005202A	04/17/2020 21:45	Jeremy L Bolf	1
06649	Total Dissolved Solids	SM 2540 C-2011	1	20111964901A	04/20/2020 09:18	Amy L Cramer	1
12151	Temperature of pH	SM 2550 B-2010	1	20108005202A	04/17/2020 21:45	Jeremy L Bolf	1
12152	pH	SM 4500-H+ B-2011	1	20108005202A	04/17/2020 21:45	Jeremy L Bolf	1
00428	Dissolved Oxygen	SM 4500-O G-2011	1	20107042801A	04/16/2020 21:31	Lauren Shelmet	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-04 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299337
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 12:45

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals Dissolved			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.0902	0.0120	0.0300	1
01754	Iron	7439-89-6	0.0805 J	0.0400	0.200	1
01756	Lithium	7439-93-2	0.0174 J	0.0110	0.0500	1
01757	Magnesium	7439-95-4	8.82	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0037 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.46	0.204	0.500	1
01767	Sodium	7440-23-5	14.8	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	N.D.	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0438	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	N.D.	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.00017 J	0.00016	0.00050	1
06035	Lead	7439-92-1	N.D.	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.106	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.00061 J	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0025	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

03277 Lab Filtration - Metals

The holding time was not met for dissolved sample filtration. The filtration time for dissolved metals is to be within 15 minutes from collection. Since the filtration occurred after receipt in the laboratory, the 15 minute criteria was exceeded. This sample was not collected per applicable Clean Water Act (40CFR136) or SW-846 regulations.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.
This sample was filtered in the lab for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201130571603	04/23/2020 17:06	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201130571603	04/23/2020 17:06	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201130571603	04/23/2020 17:06	Cindy M Gehman	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-04 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299337
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 12:45

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01757	Magnesium	EPA 200.7 rev 4.4	1	201130571603	04/23/2020 17:06	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201130571603	04/23/2020 17:06	Cindy M Gehman	1
01762	Potassium	EPA 200.7 rev 4.4	1	201130571603	04/23/2020 17:06	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201130571603	04/23/2020 17:06	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:49	Bradley M Berlot	1
06024	Antimony	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:49	Bradley M Berlot	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:49	Bradley M Berlot	1
06026	Barium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:49	Bradley M Berlot	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:49	Bradley M Berlot	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:49	Bradley M Berlot	1
06031	Chromium	EPA 200.8 rev 5.4	1	201130705003A	04/24/2020 09:57	Bradley M Berlot	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:49	Bradley M Berlot	1
06035	Lead	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:49	Bradley M Berlot	1
06037	Manganese	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:49	Bradley M Berlot	1
06039	Nickel	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:49	Bradley M Berlot	1
06041	Selenium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:49	Bradley M Berlot	1
06045	Thallium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:49	Bradley M Berlot	1
00259	Mercury	EPA 245.1 rev 3	1	201130571402	04/24/2020 07:58	Christina Termini	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201130571603	04/23/2020 02:54	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201130705003	04/23/2020 03:24	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201130571402	04/23/2020 05:06	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-05 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299338
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 11:48

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals						
EPA 200.7 rev 4.4			mg/l	mg/l	mg/l	
08014	Boron	7440-42-8	0.0833	0.0120	0.0300	1
01750	Calcium	7440-70-2	33.3	0.0960	0.200	1
01754	Iron	7439-89-6	0.221	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	8.69	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0030 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.37	0.204	0.500	1
01767	Sodium	7440-23-5	14.8	0.239	1.00	1
EPA 200.8 rev 5.4			mg/l	mg/l	mg/l	
06023	Aluminum	7429-90-5	0.115	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0483	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.00062 J	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.00020 J	0.00016	0.00050	1
06035	Lead	7439-92-1	0.00035 J	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.0684	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.00087 J	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0024	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
EPA 245.1 rev 3			mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
SM 2340 B-2011			mg/l	mg/l	mg/l	
06256	Total Hardness as CaCO ₃ ¹	471-34-1	119	0.096	0.20	1
EPA 300.0			mg/l	mg/l	mg/l	
00224	Chloride	16887-00-6	23.9	1.0	2.0	5
01504	Fluoride	16984-48-8	N.D. K4	0.25	0.50	5
00228	Sulfate	14808-79-8	36.9	1.5	5.0	5
SM 2510 B-2011			umhos/cm	umhos/cm	umhos/cm	
12146	Specific Conductance	n.a.	319	1.7	5.0	1
SM 2540 C-2011			mg/l	mg/l	mg/l	
06649	Total Dissolved Solids	n.a.	182	10.0	30.0	1
SM 2550 B-2010			Degrees C	Degrees C	Degrees C	
12151	Temperature of pH	n.a.	22.2	0.010	0.010	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-05 Grab Surface Water
Black Gut Creek/24416.000

Normandeu Associates, Inc.
ELLE Sample #: WW 1299338
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 11:48

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Wet Chemistry						
12152	pH	SM 4500-H+ B-2011 n.a.	8.3	0.010	0.010	1
SM 4500-O G-2011						
00428	Dissolved Oxygen	7782-44-7	12.5	0.40	0.40	1
	Dissolved oxygen measurement: date: 04/16/2020 time: 21:39 sample temperature: 18.53 degrees Celsius					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.

¹ = This analyte was not on the laboratory's PA DEP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:43	Cindy M Gehman	1
01750	Calcium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:43	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:43	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:43	Cindy M Gehman	1
01757	Magnesium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:43	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:43	Cindy M Gehman	1
01762	Potassium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:43	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:43	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:06	Janeyah Rivers-Hamilton	1
06024	Antimony	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:06	Janeyah Rivers-Hamilton	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:06	Janeyah Rivers-Hamilton	1
06026	Barium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:06	Janeyah Rivers-Hamilton	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:06	Janeyah Rivers-Hamilton	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:06	Janeyah Rivers-Hamilton	1
06031	Chromium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:06	Janeyah Rivers-Hamilton	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:06	Janeyah Rivers-Hamilton	1
06035	Lead	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:06	Janeyah Rivers-Hamilton	1
06037	Manganese	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:06	Janeyah Rivers-Hamilton	1
06039	Nickel	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:06	Janeyah Rivers-Hamilton	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-05 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299338
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 11:48

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06041	Selenium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:06	Janeyah Rivers-Hamilton	1
06045	Thallium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:06	Janeyah Rivers-Hamilton	1
00259	Mercury	EPA 245.1 rev 3	1	201120571401	04/22/2020 08:42	Christina Termini	1
06256	Total Hardness as CaCO3	SM 2340 B-2011	1	201140625601	04/23/2020 10:31	Tshina Alamos	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 03:07	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201120705004	04/22/2020 03:30	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201120571401	04/21/2020 16:05	JoElla L Rice	1
00224	Chloride	EPA 300.0	1	20112135117A	04/21/2020 10:43	Kevin Litwa	5
01504	Fluoride	EPA 300.0	1	20112135117A	04/30/2020 10:47	Niyati Desai	5
00228	Sulfate	EPA 300.0	1	20112135117A	04/21/2020 10:43	Kevin Litwa	5
12146	Specific Conductance	SM 2510 B-2011	1	20108005202A	04/17/2020 21:30	Jeremy L Bolf	1
06649	Total Dissolved Solids	SM 2540 C-2011	1	20111964901A	04/20/2020 09:18	Amy L Cramer	1
12151	Temperature of pH	SM 2550 B-2010	1	20108005202A	04/17/2020 21:30	Jeremy L Bolf	1
12152	pH	SM 4500-H+ B-2011	1	20108005202A	04/17/2020 21:30	Jeremy L Bolf	1
00428	Dissolved Oxygen	SM 4500-O G-2011	1	20107042801A	04/16/2020 21:31	Lauren Shelmet	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-05 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299339
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 11:48

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals Dissolved			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.0856	0.0120	0.0300	1
01754	Iron	7439-89-6	N.D.	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	8.42	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0021 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.36	0.204	0.500	1
01767	Sodium	7440-23-5	14.6	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	N.D.	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0461	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.00045 J	0.00033	0.0020	1
06032	Cobalt	7440-48-4	N.D.	0.00016	0.00050	1
06035	Lead	7439-92-1	N.D.	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.0397	0.00063	0.0020	1
06039	Nickel	7440-02-0	N.D.	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0025	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

03277 Lab Filtration - Metals

The holding time was not met for dissolved sample filtration. The filtration time for dissolved metals is to be within 15 minutes from collection. Since the filtration occurred after receipt in the laboratory, the 15 minute criteria was exceeded. This sample was not collected per applicable Clean Water Act (40CFR136) or SW-846 regulations.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.
This sample was filtered in the lab for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201130571604	04/26/2020 20:59	Lisa J Cooke	1
01754	Iron	EPA 200.7 rev 4.4	1	201130571604	04/26/2020 20:59	Lisa J Cooke	1
01756	Lithium	EPA 200.7 rev 4.4	1	201130571604	04/27/2020 06:51	Lisa J Cooke	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 BGC01-05 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299339
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 11:48

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01757	Magnesium	EPA 200.7 rev 4.4	1	201130571604	04/26/2020 20:59	Lisa J Cooke	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201130571604	04/27/2020 06:51	Lisa J Cooke	1
01762	Potassium	EPA 200.7 rev 4.4	1	201130571604	04/26/2020 20:59	Lisa J Cooke	1
01767	Sodium	EPA 200.7 rev 4.4	1	201130571604	04/26/2020 20:59	Lisa J Cooke	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:51	Bradley M Berlot	1
06024	Antimony	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:51	Bradley M Berlot	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:51	Bradley M Berlot	1
06026	Barium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:51	Bradley M Berlot	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:51	Bradley M Berlot	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:51	Bradley M Berlot	1
06031	Chromium	EPA 200.8 rev 5.4	1	201130705003A	04/24/2020 09:58	Bradley M Berlot	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:51	Bradley M Berlot	1
06035	Lead	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:51	Bradley M Berlot	1
06037	Manganese	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:51	Bradley M Berlot	1
06039	Nickel	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:51	Bradley M Berlot	1
06041	Selenium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:51	Bradley M Berlot	1
06045	Thallium	EPA 200.8 rev 5.4	1	201130705003A	04/23/2020 13:51	Bradley M Berlot	1
00259	Mercury	EPA 245.1 rev 3	1	201130571402	04/24/2020 08:00	Christina Termini	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201130571604	04/23/2020 02:57	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201130705003	04/23/2020 03:24	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201130571402	04/23/2020 05:06	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299340
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:30

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.0756	0.0120	0.0300	1
01750	Calcium	7440-70-2	30.8	0.0960	0.200	1
01754	Iron	7439-89-6	0.0837 J	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	8.38	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0030 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.67	0.204	0.500	1
01767	Sodium	7440-23-5	15.7	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	0.0281	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0437	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.00054 J	0.00033	0.0020	1
06032	Cobalt	7440-48-4	N.D.	0.00016	0.00050	1
06035	Lead	7439-92-1	0.000098 J	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.0035	0.00063	0.0020	1
06039	Nickel	7440-02-0	N.D.	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0022	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
			SM 2340 B-2011	mg/l	mg/l	
06256	Total Hardness as CaCO ₃ ¹	471-34-1	111	0.096	0.20	1
Wet Chemistry			EPA 300.0	mg/l	mg/l	
00224	Chloride	16887-00-6	24.6	1.0	2.0	5
01504	Fluoride	16984-48-8	N.D. K4 Q3	0.25	0.50	5
00228	Sulfate	14808-79-8	29.1	1.5	5.0	5
			SM 2510 B-2011	umhos/cm	umhos/cm	
12146	Specific Conductance	n.a.	305	1.7	5.0	1
			SM 2540 C-2011	mg/l	mg/l	
06649	Total Dissolved Solids	n.a.	167	10.0	30.0	1
			SM 2550 B-2010	Degrees C	Degrees C	
12151	Temperature of pH	n.a.	21.6	0.010	0.010	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299340
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:30

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Wet Chemistry						
12152	pH	SM 4500-H+ B-2011 n.a.	Std. Units 8.7	Std. Units 0.010	Std. Units 0.010	1
00428	Dissolved Oxygen	SM 4500-O G-2011 7782-44-7	mg/l 13.1	mg/l 0.40	mg/l 0.40	1
	Dissolved oxygen measurement: date: 04/16/2020 time: 21:41 sample temperature: 18.39 degrees Celsius					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.

¹ = This analyte was not on the laboratory's PA DEP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:12	Cindy M Gehman	1
01750	Calcium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:12	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:12	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:12	Cindy M Gehman	1
01757	Magnesium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:12	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:12	Cindy M Gehman	1
01762	Potassium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:12	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:12	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:22	Janeyah Rivers-Hamilton	1
06024	Antimony	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:22	Janeyah Rivers-Hamilton	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:22	Janeyah Rivers-Hamilton	1
06026	Barium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:22	Janeyah Rivers-Hamilton	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:22	Janeyah Rivers-Hamilton	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:22	Janeyah Rivers-Hamilton	1
06031	Chromium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:22	Janeyah Rivers-Hamilton	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:22	Janeyah Rivers-Hamilton	1
06035	Lead	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:22	Janeyah Rivers-Hamilton	1
06037	Manganese	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:22	Janeyah Rivers-Hamilton	1
06039	Nickel	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:22	Janeyah Rivers-Hamilton	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 Grab Surface Water
Black Gut Creek/24416.000

Normandeu Associates, Inc.
ELLE Sample #: WW 1299340
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:30

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06041	Selenium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:22	Janeyah Rivers-Hamilton	1
06045	Thallium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:22	Janeyah Rivers-Hamilton	1
00259	Mercury	EPA 245.1 rev 3	1	201120571401	04/22/2020 10:54	Christina Termini	1
06256	Total Hardness as CaCO3	SM 2340 B-2011	1	201140625601	04/23/2020 10:31	Tshina Alamos	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 03:07	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201120705002	04/22/2020 03:31	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201120571401	04/21/2020 16:05	JoElla L Rice	1
00224	Chloride	EPA 300.0	1	20112135117A	04/21/2020 08:25	Kevin Litwa	5
01504	Fluoride	EPA 300.0	1	20112135117A	05/05/2020 00:37	Kevin Litwa	5
00228	Sulfate	EPA 300.0	1	20112135117A	04/21/2020 08:25	Kevin Litwa	5
12146	Specific Conductance	SM 2510 B-2011	1	20108005202A	04/17/2020 20:47	Jeremy L Bolf	1
06649	Total Dissolved Solids	SM 2540 C-2011	1	20111964901A	04/20/2020 09:18	Amy L Cramer	1
12151	Temperature of pH	SM 2550 B-2010	1	20108005202A	04/17/2020 20:47	Jeremy L Bolf	1
12152	pH	SM 4500-H+ B-2011	1	20108005202A	04/17/2020 20:47	Jeremy L Bolf	1
00428	Dissolved Oxygen	SM 4500-O G-2011	1	20107042801A	04/16/2020 21:31	Lauren Shelmet	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 MS Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299341
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:43

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.129	0.0120	0.0300	1
01750	Calcium	7440-70-2	29.7	0.0960	0.200	1
01754	Iron	7439-89-6	0.433	0.0400	0.200	1
01756	Lithium	7439-93-2	0.104	0.0110	0.0500	1
01757	Magnesium	7439-95-4	8.11	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0232	0.0020	0.0100	1
01762	Potassium	7440-09-7	9.18	0.204	0.500	1
01767	Sodium	7440-23-5	17.0	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	0.271	0.0197	0.0250	1
06024	Antimony	7440-36-0	0.0067	0.00041	0.0010	1
06025	Arsenic	7440-38-2	0.0104	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0921	0.00075	0.0020	1
06027	Beryllium	7440-41-7	0.0044	0.00012	0.00050	1
06028	Cadmium	7440-43-9	0.0053	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.0499	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.236	0.00016	0.00050	1
06035	Lead	7439-92-1	0.0055	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.0563	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.0523	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0127	0.00028	0.0010	1
06045	Thallium	7440-28-0	0.0021	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	0.0011	0.000050	0.00020	1
			SM 2340 B-2011	mg/l	mg/l	
06256	Total Hardness as CaCO ₃ ¹	471-34-1	107	0.096	0.20	1
Wet Chemistry			EPA 300.0	mg/l	mg/l	
00224	Chloride	16887-00-6	34.0 E	1.0	2.0	5
01504	Fluoride	16984-48-8	1.1	0.10	0.20	2
00228	Sulfate	14808-79-8	53.3	1.5	5.0	5
			SM 2540 C-2011	mg/l	mg/l	
06649	Total Dissolved Solids	n.a.	324	10.0	30.0	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.

¹ = This analyte was not on the laboratory's PA DEP Scope of Accreditation at the time of analysis.

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 MS Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299341
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:43

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:21	Cindy M Gehman	1
01750	Calcium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:21	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:21	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:21	Cindy M Gehman	1
01757	Magnesium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:21	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:21	Cindy M Gehman	1
01762	Potassium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:21	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:21	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:27	Janeyah Rivers-Hamilton	1
06024	Antimony	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:27	Janeyah Rivers-Hamilton	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:27	Janeyah Rivers-Hamilton	1
06026	Barium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:27	Janeyah Rivers-Hamilton	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:27	Janeyah Rivers-Hamilton	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:27	Janeyah Rivers-Hamilton	1
06031	Chromium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:27	Janeyah Rivers-Hamilton	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:27	Janeyah Rivers-Hamilton	1
06035	Lead	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:27	Janeyah Rivers-Hamilton	1
06037	Manganese	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:27	Janeyah Rivers-Hamilton	1
06039	Nickel	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:27	Janeyah Rivers-Hamilton	1
06041	Selenium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:27	Janeyah Rivers-Hamilton	1
06045	Thallium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:27	Janeyah Rivers-Hamilton	1
00259	Mercury	EPA 245.1 rev 3	1	201120571401	04/22/2020 10:58	Christina Termini	1
06256	Total Hardness as CaCO3	SM 2340 B-2011	1	201140625601	04/23/2020 10:31	Tshina Alamos	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 03:07	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201120705002	04/22/2020 03:31	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201120571401	04/21/2020 16:05	JoElla L Rice	1
00224	Chloride	EPA 300.0	1	20112135117A	04/21/2020 09:05	Kevin Litwa	5
01504	Fluoride	EPA 300.0	1	20112135117A	05/08/2020 09:03	Samantha Faverio	2
00228	Sulfate	EPA 300.0	1	20112135117A	04/21/2020 09:05	Kevin Litwa	5
06649	Total Dissolved Solids	SM 2540 C-2011	1	20111964901A	04/20/2020 09:18	Amy L Cramer	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 MSD Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299342
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:48

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.134	0.0120	0.0300	1
01750	Calcium	7440-70-2	30.8	0.0960	0.200	1
01754	Iron	7439-89-6	0.463	0.0400	0.200	1
01756	Lithium	7439-93-2	0.110	0.0110	0.0500	1
01757	Magnesium	7439-95-4	8.36	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0244	0.0020	0.0100	1
01762	Potassium	7440-09-7	9.52	0.204	0.500	1
01767	Sodium	7440-23-5	17.4	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	0.263	0.0197	0.0250	1
06024	Antimony	7440-36-0	0.0060	0.00041	0.0010	1
06025	Arsenic	7440-38-2	0.0103	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0926	0.00075	0.0020	1
06027	Beryllium	7440-41-7	0.0041	0.00012	0.00050	1
06028	Cadmium	7440-43-9	0.0052	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.0469	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.233	0.00016	0.00050	1
06035	Lead	7439-92-1	0.0053	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.0531	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.0510	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0124	0.00028	0.0010	1
06045	Thallium	7440-28-0	0.0020	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	0.0011	0.000050	0.00020	1
			SM 2340 B-2011	mg/l	mg/l	
06256	Total Hardness as CaCO ₃ ¹	471-34-1	111	0.096	0.20	1

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.

¹ = This analyte was not on the laboratory's PA DEP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:24	Cindy M Gehman	1
01750	Calcium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:24	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:24	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:24	Cindy M Gehman	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 MSD Grab Surface Water
Black Gut Creek/24416.000

Normandeu Associates, Inc.
ELLE Sample #: WW 1299342
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:48

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01757	Magnesium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:24	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:24	Cindy M Gehman	1
01762	Potassium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:24	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:24	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:29	Janeyah Rivers-Hamilton	1
06024	Antimony	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:29	Janeyah Rivers-Hamilton	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:29	Janeyah Rivers-Hamilton	1
06026	Barium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:29	Janeyah Rivers-Hamilton	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:29	Janeyah Rivers-Hamilton	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:29	Janeyah Rivers-Hamilton	1
06031	Chromium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:29	Janeyah Rivers-Hamilton	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:29	Janeyah Rivers-Hamilton	1
06035	Lead	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:29	Janeyah Rivers-Hamilton	1
06037	Manganese	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:29	Janeyah Rivers-Hamilton	1
06039	Nickel	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:29	Janeyah Rivers-Hamilton	1
06041	Selenium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:29	Janeyah Rivers-Hamilton	1
06045	Thallium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:29	Janeyah Rivers-Hamilton	1
00259	Mercury	EPA 245.1 rev 3	1	201120571401	04/22/2020 11:00	Christina Termini	1
06256	Total Hardness as CaCO3	SM 2340 B-2011	1	201140625601	04/23/2020 10:31	Tshina Alamos	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 03:07	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201120705002	04/22/2020 03:31	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201120571401	04/21/2020 16:05	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 DUP Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299343
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:30

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.0735	0.0120	0.0300	1
01750	Calcium	7440-70-2	29.9	0.0960	0.200	1
01754	Iron	7439-89-6	0.0436 J	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	8.07	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0047 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.63	0.204	0.500	1
01767	Sodium	7440-23-5	15.3	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	0.0307	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0429	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.00038 J	0.00033	0.0020	1
06032	Cobalt	7440-48-4	N.D.	0.00016	0.00050	1
06035	Lead	7439-92-1	0.000091 J	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.0038	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.00066 J	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0022	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
			SM 2340 B-2011	mg/l	mg/l	
06256	Total Hardness as CaCO ₃ ¹	471-34-1	108	0.096	0.20	1
Wet Chemistry			EPA 300.0	mg/l	mg/l	
00224	Chloride	16887-00-6	24.2	1.0	2.0	5
01504	Fluoride	16984-48-8	N.D. K4	0.25	0.50	5
00228	Sulfate	14808-79-8	29.4	1.5	5.0	5
			SM 2510 B-2011	umhos/cm	umhos/cm	
12146	Specific Conductance	n.a.	304	1.7	5.0	1
			SM 2540 C-2011	mg/l	mg/l	
06649	Total Dissolved Solids	n.a.	168	10.0	30.0	1
			SM 2550 B-2010	Degrees C	Degrees C	
12151	Temperature of pH	n.a.	21.5	0.010	0.010	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 DUP Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299343
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:30

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Wet Chemistry						
12152	pH	SM 4500-H+ B-2011 n.a.	Std. Units 8.7	Std. Units 0.010	Std. Units 0.010	1
SM 4500-O G-2011						
00428	Dissolved Oxygen	7782-44-7	mg/l 13.0	mg/l 0.40	mg/l 0.40	1
	Dissolved oxygen measurement: date: 04/16/2020 time: 21:43 sample temperature: 18.23 degrees Celsius					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.

¹ = This analyte was not on the laboratory's PA DEP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:18	Cindy M Gehman	1
01750	Calcium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:18	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:18	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:18	Cindy M Gehman	1
01757	Magnesium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:18	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:18	Cindy M Gehman	1
01762	Potassium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:18	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:18	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:26	Janeyah Rivers-Hamilton	1
06024	Antimony	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:26	Janeyah Rivers-Hamilton	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:26	Janeyah Rivers-Hamilton	1
06026	Barium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:26	Janeyah Rivers-Hamilton	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:26	Janeyah Rivers-Hamilton	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:26	Janeyah Rivers-Hamilton	1
06031	Chromium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:26	Janeyah Rivers-Hamilton	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:26	Janeyah Rivers-Hamilton	1
06035	Lead	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:26	Janeyah Rivers-Hamilton	1
06037	Manganese	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:26	Janeyah Rivers-Hamilton	1
06039	Nickel	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:26	Janeyah Rivers-Hamilton	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 DUP Grab Surface Water
Black Gut Creek/24416.000

Normandeu Associates, Inc.
ELLE Sample #: WW 1299343
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:30

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06041	Selenium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:26	Janeyah Rivers-Hamilton	1
06045	Thallium	EPA 200.8 rev 5.4	1	201120705002A	04/23/2020 08:26	Janeyah Rivers-Hamilton	1
00259	Mercury	EPA 245.1 rev 3	1	201120571401	04/22/2020 10:56	Christina Termini	1
06256	Total Hardness as CaCO3	SM 2340 B-2011	1	201140625601	04/23/2020 10:31	Tshina Alamos	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 03:07	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201120705002	04/22/2020 03:31	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201120571401	04/21/2020 16:05	JoElla L Rice	1
00224	Chloride	EPA 300.0	1	20112135117A	04/21/2020 08:45	Kevin Litwa	5
01504	Fluoride	EPA 300.0	1	20112135117A	05/05/2020 01:10	Kevin Litwa	5
00228	Sulfate	EPA 300.0	1	20112135117A	04/21/2020 08:45	Kevin Litwa	5
12146	Specific Conductance	SM 2510 B-2011	1	20108005202A	04/17/2020 20:52	Jeremy L Bolf	1
06649	Total Dissolved Solids	SM 2540 C-2011	1	20111964901A	04/20/2020 09:18	Amy L Cramer	1
12151	Temperature of pH	SM 2550 B-2010	1	20108005202A	04/17/2020 20:52	Jeremy L Bolf	1
12152	pH	SM 4500-H+ B-2011	1	20108005202A	04/17/2020 20:52	Jeremy L Bolf	1
00428	Dissolved Oxygen	SM 4500-O G-2011	1	20107042801A	04/16/2020 21:31	Lauren Shelmet	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299344
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:30

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals Dissolved		EPA 200.7 rev 4.4	mg/l	mg/l	mg/l	
08014	Boron	7440-42-8	0.0765	0.0120	0.0300	1
01754	Iron	7439-89-6	N.D.	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	7.62	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0033 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.45	0.204	0.500	1
01767	Sodium	7440-23-5	14.7	0.239	1.00	1
		EPA 200.8 rev 5.4	mg/l	mg/l	mg/l	
06023	Aluminum	7429-90-5	N.D.	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0470	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D. Q1	0.00015	0.00050	1
06031	Chromium	7440-47-3	N.D.	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.00025 J	0.00016	0.00050	1
06035	Lead	7439-92-1	N.D.	0.000071	0.00050	1
06037	Manganese	7439-96-5	N.D.	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.00087 J	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0023	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
		EPA 245.1 rev 3	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

03277 Lab Filtration - Metals

The holding time was not met for dissolved sample filtration. The filtration time for dissolved metals is to be within 15 minutes from collection. Since the filtration occurred after receipt in the laboratory, the 15 minute criteria was exceeded. This sample was not collected per applicable Clean Water Act (40CFR136) or SW-846 regulations.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.
This sample was filtered in the lab for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201130571602	04/27/2020 04:33	Elaine F Stoltzfus	1
01754	Iron	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:10	Elaine F Stoltzfus	1
01756	Lithium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:10	Elaine F Stoltzfus	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299344
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:30

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01757	Magnesium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:10	Elaine F Stoltzfus	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201130571602	04/27/2020 04:33	Elaine F Stoltzfus	1
01762	Potassium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:10	Elaine F Stoltzfus	1
01767	Sodium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:10	Elaine F Stoltzfus	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:44	Bradley M Berlot	1
06024	Antimony	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:44	Bradley M Berlot	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:44	Bradley M Berlot	1
06026	Barium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:44	Bradley M Berlot	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:44	Bradley M Berlot	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:44	Bradley M Berlot	1
06031	Chromium	EPA 200.8 rev 5.4	1	201130705002A	04/24/2020 09:24	Bradley M Berlot	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:44	Bradley M Berlot	1
06035	Lead	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:44	Bradley M Berlot	1
06037	Manganese	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:44	Bradley M Berlot	1
06039	Nickel	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:44	Bradley M Berlot	1
06041	Selenium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:44	Bradley M Berlot	1
06045	Thallium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:44	Bradley M Berlot	1
00259	Mercury	EPA 245.1 rev 3	1	201140571401	04/24/2020 08:21	Christina Termini	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201130571602	04/23/2020 02:50	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201130705002	04/23/2020 03:21	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201140571401	04/23/2020 05:06	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 MS Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299345
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:43

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals Dissolved			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.136	0.0120	0.0300	1
01754	Iron	7439-89-6	0.401	0.0400	0.200	1
01756	Lithium	7439-93-2	0.108	0.0110	0.0500	1
01757	Magnesium	7439-95-4	7.82	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0227	0.0020	0.0100	1
01762	Potassium	7440-09-7	8.89	0.204	0.500	1
01767	Sodium	7440-23-5	16.6	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	0.235	0.0197	0.0250	1
06024	Antimony	7440-36-0	0.0066	0.00041	0.0010	1
06025	Arsenic	7440-38-2	0.0114	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0987	0.00075	0.0020	1
06027	Beryllium	7440-41-7	0.0042	0.00012	0.00050	1
06028	Cadmium	7440-43-9	0.0053 Q1	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.0494	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.262	0.00016	0.00050	1
06035	Lead	7439-92-1	0.0055	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.0583	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.0548	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0128	0.00028	0.0010	1
06045	Thallium	7440-28-0	0.0021	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	0.00097	0.000050	0.00020	1

03277 Lab Filtration - Metals

The holding time was not met for dissolved sample filtration. The filtration time for dissolved metals is to be within 15 minutes from collection. Since the filtration occurred after receipt in the laboratory, the 15 minute criteria was exceeded. This sample was not collected per applicable Clean Water Act (40CFR136) or SW-846 regulations.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.
This sample was filtered in the lab for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201130571602	04/27/2020 04:42	Elaine F Stoltzfus	1
01754	Iron	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:19	Elaine F Stoltzfus	1
01756	Lithium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:19	Elaine F Stoltzfus	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 MS Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299345
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:43

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01757	Magnesium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:19	Elaine F Stoltzfus	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201130571602	04/27/2020 04:42	Elaine F Stoltzfus	1
01762	Potassium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:19	Elaine F Stoltzfus	1
01767	Sodium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:19	Elaine F Stoltzfus	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:51	Bradley M Berlot	1
06024	Antimony	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:51	Bradley M Berlot	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:51	Bradley M Berlot	1
06026	Barium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:51	Bradley M Berlot	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:51	Bradley M Berlot	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:51	Bradley M Berlot	1
06031	Chromium	EPA 200.8 rev 5.4	1	201130705002A	04/24/2020 09:29	Bradley M Berlot	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:51	Bradley M Berlot	1
06035	Lead	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:51	Bradley M Berlot	1
06037	Manganese	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:51	Bradley M Berlot	1
06039	Nickel	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:51	Bradley M Berlot	1
06041	Selenium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:51	Bradley M Berlot	1
06045	Thallium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:51	Bradley M Berlot	1
00259	Mercury	EPA 245.1 rev 3	1	201140571401	04/24/2020 08:25	Christina Termini	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201130571602	04/23/2020 02:50	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201130705002	04/23/2020 03:21	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201140571401	04/23/2020 05:06	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 MSD Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299346
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:48

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals Dissolved			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.141	0.0120	0.0300	1
01754	Iron	7439-89-6	0.400	0.0400	0.200	1
01756	Lithium	7439-93-2	0.106	0.0110	0.0500	1
01757	Magnesium	7439-95-4	7.85	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0234	0.0020	0.0100	1
01762	Potassium	7440-09-7	8.93	0.204	0.500	1
01767	Sodium	7440-23-5	16.6	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	0.248	0.0197	0.0250	1
06024	Antimony	7440-36-0	0.0065	0.00041	0.0010	1
06025	Arsenic	7440-38-2	0.0113	0.00068	0.0020	1
06026	Barium	7440-39-3	0.101	0.00075	0.0020	1
06027	Beryllium	7440-41-7	0.0040	0.00012	0.00050	1
06028	Cadmium	7440-43-9	0.0053 Q1	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.0512	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.272	0.00016	0.00050	1
06035	Lead	7439-92-1	0.0053	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.0523	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.0576	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0128	0.00028	0.0010	1
06045	Thallium	7440-28-0	0.0020	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	0.00092	0.000050	0.00020	1

03277 Lab Filtration - Metals

The holding time was not met for dissolved sample filtration. The filtration time for dissolved metals is to be within 15 minutes from collection. Since the filtration occurred after receipt in the laboratory, the 15 minute criteria was exceeded. This sample was not collected per applicable Clean Water Act (40CFR136) or SW-846 regulations.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.
This sample was filtered in the lab for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201130571602	04/27/2020 04:45	Elaine F Stoltzfus	1
01754	Iron	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:23	Elaine F Stoltzfus	1
01756	Lithium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:23	Elaine F Stoltzfus	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 MSD Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299346
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:48

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01757	Magnesium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:23	Elaine F Stoltzfus	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201130571602	04/27/2020 04:45	Elaine F Stoltzfus	1
01762	Potassium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:23	Elaine F Stoltzfus	1
01767	Sodium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:23	Elaine F Stoltzfus	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:53	Bradley M Berlot	1
06024	Antimony	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:53	Bradley M Berlot	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:53	Bradley M Berlot	1
06026	Barium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:53	Bradley M Berlot	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:53	Bradley M Berlot	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:53	Bradley M Berlot	1
06031	Chromium	EPA 200.8 rev 5.4	1	201130705002A	04/24/2020 09:30	Bradley M Berlot	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:53	Bradley M Berlot	1
06035	Lead	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:53	Bradley M Berlot	1
06037	Manganese	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:53	Bradley M Berlot	1
06039	Nickel	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:53	Bradley M Berlot	1
06041	Selenium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:53	Bradley M Berlot	1
06045	Thallium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:53	Bradley M Berlot	1
00259	Mercury	EPA 245.1 rev 3	1	201140571401	04/24/2020 08:27	Christina Termini	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201130571602	04/23/2020 02:50	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201130705002	04/23/2020 03:21	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201140571401	04/23/2020 05:06	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 DUP Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299347
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:30

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals Dissolved EPA 200.7 rev 4.4			mg/l	mg/l	mg/l	
08014	Boron	7440-42-8	0.0763	0.0120	0.0300	1
01754	Iron	7439-89-6	N.D.	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	7.60	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0036 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.45	0.204	0.500	1
01767	Sodium	7440-23-5	14.6	0.239	1.00	1
EPA 200.8 rev 5.4			mg/l	mg/l	mg/l	
06023	Aluminum	7429-90-5	N.D.	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0436	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D. Q1	0.00015	0.00050	1
06031	Chromium	7440-47-3	N.D.	0.00033	0.0020	1
06032	Cobalt	7440-48-4	N.D.	0.00016	0.00050	1
06035	Lead	7439-92-1	0.00034 J	0.000071	0.00050	1
06037	Manganese	7439-96-5	N.D.	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.00069 J	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0024	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
EPA 245.1 rev 3			mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

03277 Lab Filtration - Metals

The holding time was not met for dissolved sample filtration. The filtration time for dissolved metals is to be within 15 minutes from collection. Since the filtration occurred after receipt in the laboratory, the 15 minute criteria was exceeded. This sample was not collected per applicable Clean Water Act (40CFR136) or SW-846 regulations.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.
This sample was filtered in the lab for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201130571602	04/27/2020 04:39	Elaine F Stoltzfus	1
01754	Iron	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:16	Elaine F Stoltzfus	1
01756	Lithium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:16	Elaine F Stoltzfus	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 HMR01-06 DUP Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299347
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 13:30

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01757	Magnesium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:16	Elaine F Stoltzfus	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201130571602	04/27/2020 04:39	Elaine F Stoltzfus	1
01762	Potassium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:16	Elaine F Stoltzfus	1
01767	Sodium	EPA 200.7 rev 4.4	1	201130571602	04/26/2020 16:16	Elaine F Stoltzfus	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:49	Bradley M Berlot	1
06024	Antimony	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:49	Bradley M Berlot	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:49	Bradley M Berlot	1
06026	Barium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:49	Bradley M Berlot	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:49	Bradley M Berlot	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:49	Bradley M Berlot	1
06031	Chromium	EPA 200.8 rev 5.4	1	201130705002A	04/24/2020 09:27	Bradley M Berlot	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:49	Bradley M Berlot	1
06035	Lead	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:49	Bradley M Berlot	1
06037	Manganese	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:49	Bradley M Berlot	1
06039	Nickel	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:49	Bradley M Berlot	1
06041	Selenium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:49	Bradley M Berlot	1
06045	Thallium	EPA 200.8 rev 5.4	1	201130705002A	04/23/2020 12:49	Bradley M Berlot	1
00259	Mercury	EPA 245.1 rev 3	1	201140571401	04/24/2020 08:23	Christina Termini	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201130571602	04/23/2020 02:50	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201130705002	04/23/2020 03:21	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201140571401	04/23/2020 05:06	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 DUP01 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299348
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 10:48

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.0931	0.0120	0.0300	1
01750	Calcium	7440-70-2	36.1	0.0960	0.200	1
01754	Iron	7439-89-6	0.222	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	9.12	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0043 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.29	0.204	0.500	1
01767	Sodium	7440-23-5	13.9	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	0.0516	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0502	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	N.D.	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.00029 J	0.00016	0.00050	1
06035	Lead	7439-92-1	0.00017 J	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.188	0.00063	0.0020	1
06039	Nickel	7440-02-0	0.00091 J	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0024	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1
			SM 2340 B-2011	mg/l	mg/l	
06256	Total Hardness as CaCO ₃ ¹	471-34-1	128	0.096	0.20	1
Wet Chemistry			EPA 300.0	mg/l	mg/l	
00224	Chloride	16887-00-6	22.5	1.0	2.0	5
01504	Fluoride	16984-48-8	N.D.	0.25	0.50	5
00228	Sulfate	14808-79-8	44.4	1.5	5.0	5
			SM 2510 B-2011	umhos/cm	umhos/cm	
12146	Specific Conductance	n.a.	336	1.7	5.0	1
			SM 2540 C-2011	mg/l	mg/l	
06649	Total Dissolved Solids	n.a.	186	10.0	30.0	1
			SM 2550 B-2010	Degrees C	Degrees C	
12151	Temperature of pH	n.a.	22.2	0.010	0.010	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 DUP01 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299348
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 10:48

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Wet Chemistry						
12152	pH	SM 4500-H+ B-2011 n.a.	Std. Units 8.0	Std. Units 0.010	Std. Units 0.010	1
SM 4500-O G-2011						
00428	Dissolved Oxygen	7782-44-7	mg/l 11.7	mg/l 0.40	mg/l 0.40	1
	Dissolved oxygen measurement: date: 04/16/2020 time: 21:45 sample temperature: 18.58 degrees Celsius					

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.

¹ = This analyte was not on the laboratory's PA DEP Scope of Accreditation at the time of analysis.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:46	Cindy M Gehman	1
01750	Calcium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:46	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:46	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:46	Cindy M Gehman	1
01757	Magnesium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:46	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:46	Cindy M Gehman	1
01762	Potassium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:46	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 19:46	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:08	Janeyah Rivers-Hamilton	1
06024	Antimony	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:08	Janeyah Rivers-Hamilton	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:08	Janeyah Rivers-Hamilton	1
06026	Barium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:08	Janeyah Rivers-Hamilton	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:08	Janeyah Rivers-Hamilton	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:08	Janeyah Rivers-Hamilton	1
06031	Chromium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:08	Janeyah Rivers-Hamilton	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:08	Janeyah Rivers-Hamilton	1
06035	Lead	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:08	Janeyah Rivers-Hamilton	1
06037	Manganese	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:08	Janeyah Rivers-Hamilton	1
06039	Nickel	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:08	Janeyah Rivers-Hamilton	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 DUP01 Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299348
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 10:48

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06041	Selenium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:08	Janeyah Rivers-Hamilton	1
06045	Thallium	EPA 200.8 rev 5.4	1	201120705004A	04/22/2020 14:08	Janeyah Rivers-Hamilton	1
00259	Mercury	EPA 245.1 rev 3	1	201120571401	04/22/2020 08:44	Christina Termini	1
06256	Total Hardness as CaCO3	SM 2340 B-2011	1	201140625601	04/23/2020 10:31	Tshina Alamos	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201120571601	04/22/2020 03:07	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201120705004	04/22/2020 03:30	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201120571401	04/21/2020 16:05	JoElla L Rice	1
00224	Chloride	EPA 300.0	1	20112135117A	04/21/2020 11:41	Kevin Litwa	5
01504	Fluoride	EPA 300.0	1	20112135117A	05/07/2020 14:51	Kevin Litwa	5
00228	Sulfate	EPA 300.0	1	20112135117A	04/21/2020 11:41	Kevin Litwa	5
12146	Specific Conductance	SM 2510 B-2011	1	20108005202A	04/17/2020 21:50	Jeremy L Bolf	1
06649	Total Dissolved Solids	SM 2540 C-2011	1	20111964901A	04/20/2020 09:18	Amy L Cramer	1
12151	Temperature of pH	SM 2550 B-2010	1	20108005202A	04/17/2020 21:50	Jeremy L Bolf	1
12152	pH	SM 4500-H+ B-2011	1	20108005202A	04/17/2020 21:50	Jeremy L Bolf	1
00428	Dissolved Oxygen	SM 4500-O G-2011	1	20107042801A	04/16/2020 21:31	Lauren Shelmet	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 DUP01 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeau Associates, Inc.
ELLE Sample #: WW 1299349
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submittal Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 10:48

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Metals Dissolved			EPA 200.7 rev 4.4	mg/l	mg/l	
08014	Boron	7440-42-8	0.0948	0.0120	0.0300	1
01754	Iron	7439-89-6	0.0782 J	0.0400	0.200	1
01756	Lithium	7439-93-2	N.D.	0.0110	0.0500	1
01757	Magnesium	7439-95-4	8.96	0.0400	0.100	1
07060	Molybdenum	7439-98-7	0.0041 J	0.0020	0.0100	1
01762	Potassium	7440-09-7	3.28	0.204	0.500	1
01767	Sodium	7440-23-5	13.7	0.239	1.00	1
			EPA 200.8 rev 5.4	mg/l	mg/l	
06023	Aluminum	7429-90-5	N.D.	0.0197	0.0250	1
06024	Antimony	7440-36-0	N.D.	0.00041	0.0010	1
06025	Arsenic	7440-38-2	N.D.	0.00068	0.0020	1
06026	Barium	7440-39-3	0.0480	0.00075	0.0020	1
06027	Beryllium	7440-41-7	N.D.	0.00012	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00015	0.00050	1
06031	Chromium	7440-47-3	0.00037 J	0.00033	0.0020	1
06032	Cobalt	7440-48-4	0.00017 J	0.00016	0.00050	1
06035	Lead	7439-92-1	N.D.	0.000071	0.00050	1
06037	Manganese	7439-96-5	0.131	0.00063	0.0020	1
06039	Nickel	7440-02-0	N.D.	0.00060	0.0010	1
06041	Selenium	7782-49-2	0.0026	0.00028	0.0010	1
06045	Thallium	7440-28-0	N.D.	0.00013	0.00050	1
			EPA 245.1 rev 3	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	0.00020	1

03277 Lab Filtration - Metals

The holding time was not met for dissolved sample filtration. The filtration time for dissolved metals is to be within 15 minutes from collection. Since the filtration occurred after receipt in the laboratory, the 15 minute criteria was exceeded. This sample was not collected per applicable Clean Water Act (40CFR136) or SW-846 regulations.

Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 01/31/2021.
This sample was filtered in the lab for dissolved metals.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08014	Boron	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 23:01	Cindy M Gehman	1
01754	Iron	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 23:01	Cindy M Gehman	1
01756	Lithium	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 23:01	Cindy M Gehman	1

*=This limit was used in the evaluation of the final result

Sample Description: 20-04-16 DUP01 Filtered Grab Surface Water
Black Gut Creek/24416.000

Normandeu Associates, Inc.
ELLE Sample #: WW 1299349
ELLE Group #: 2096408
Matrix: Surface Water

Project Name: Black Gut Creek/24416.000

Submission Date/Time: 04/16/2020 15:40
Collection Date/Time: 04/16/2020 10:48

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01757	Magnesium	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 23:01	Cindy M Gehman	1
07060	Molybdenum	EPA 200.7 rev 4.4	1	201120571605	04/23/2020 05:39	Lisa J Cooke	1
01762	Potassium	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 23:01	Cindy M Gehman	1
01767	Sodium	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 23:01	Cindy M Gehman	1
06023	Aluminum	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:24	Janeyah Rivers-Hamilton	1
06024	Antimony	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:24	Janeyah Rivers-Hamilton	1
06025	Arsenic	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:24	Janeyah Rivers-Hamilton	1
06026	Barium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:24	Janeyah Rivers-Hamilton	1
06027	Beryllium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:24	Janeyah Rivers-Hamilton	1
06028	Cadmium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:24	Janeyah Rivers-Hamilton	1
06031	Chromium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:24	Janeyah Rivers-Hamilton	1
06032	Cobalt	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:24	Janeyah Rivers-Hamilton	1
06035	Lead	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:24	Janeyah Rivers-Hamilton	1
06037	Manganese	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:24	Janeyah Rivers-Hamilton	1
06039	Nickel	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:24	Janeyah Rivers-Hamilton	1
06041	Selenium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:24	Janeyah Rivers-Hamilton	1
06045	Thallium	EPA 200.8 rev 5.4	1	201120705003A	04/22/2020 17:24	Janeyah Rivers-Hamilton	1
00259	Mercury	EPA 245.1 rev 3	1	201120571402	04/22/2020 09:07	Christina Termini	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	201120571605	04/22/2020 03:15	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	201120705003	04/22/2020 03:30	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	201120571402	04/21/2020 16:05	JoElla L Rice	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Normandeau Associates, Inc.
Reported: 05/13/2020 04:45

Group Number: 2096408

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	mg/l	mg/l	mg/l
Batch number: 201120571401 Mercury	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340-1299343,1299348 N.D.	0.000050	0.00020
Batch number: 201120571402 Mercury	Sample number(s): 1299331,1299333,1299349 N.D.	0.000050	0.00020
Batch number: 201120571601 Boron	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340-1299343,1299348 N.D.	0.0120	0.0300
Calcium	N.D.	0.0960	0.200
Iron	N.D.	0.0400	0.200
Lithium	N.D.	0.0110	0.0500
Magnesium	N.D.	0.0400	0.100
Molybdenum	N.D.	0.0020	0.0100
Potassium	N.D.	0.204	0.500
Sodium	N.D.	0.239	1.00
Batch number: 201120571605 Boron	Sample number(s): 1299331,1299333,1299349 N.D.	0.0120	0.0300
Iron	N.D.	0.0400	0.200
Lithium	N.D.	0.0110	0.0500
Magnesium	N.D.	0.0400	0.100
Molybdenum	N.D.	0.0020	0.0100
Potassium	N.D.	0.204	0.500
Sodium	N.D.	0.239	1.00
Batch number: 201120705002A Aluminum	Sample number(s): 1299334,1299340-1299343 N.D.	0.0197	0.0250
Antimony	N.D.	0.00041	0.0010
Arsenic	N.D.	0.00068	0.0020
Barium	N.D.	0.00075	0.0020
Beryllium	N.D.	0.00012	0.00050
Cadmium	N.D.	0.00015	0.00050
Chromium	N.D.	0.00033	0.0020
Cobalt	N.D.	0.00016	0.00050
Lead	N.D.	0.000071	0.00050
Manganese	N.D.	0.00063	0.0020
Nickel	N.D.	0.00060	0.0010
Selenium	N.D.	0.00028	0.0010
Thallium	N.D.	0.00013	0.00050
Batch number: 201120705003A Aluminum	Sample number(s): 1299331,1299333,1299336,1299349 N.D.	0.0197	0.0250

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Normandeau Associates, Inc.
Reported: 05/13/2020 04:45

Group Number: 2096408

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	mg/l	mg/l	mg/l
Antimony	N.D.	0.00041	0.0010
Arsenic	N.D.	0.00068	0.0020
Barium	N.D.	0.00075	0.0020
Beryllium	N.D.	0.00012	0.00050
Cadmium	N.D.	0.00015	0.00050
Chromium	N.D.	0.00033	0.0020
Cobalt	N.D.	0.00016	0.00050
Lead	N.D.	0.000071	0.00050
Manganese	N.D.	0.00063	0.0020
Nickel	N.D.	0.00060	0.0010
Selenium	N.D.	0.00028	0.0010
Thallium	N.D.	0.00013	0.00050
Batch number: 201120705004A	Sample number(s): 1299330,1299332,1299338,1299348		
Aluminum	N.D.	0.0197	0.0250
Antimony	N.D.	0.00041	0.0010
Arsenic	N.D.	0.00068	0.0020
Barium	N.D.	0.00075	0.0020
Beryllium	N.D.	0.00012	0.00050
Cadmium	N.D.	0.00015	0.00050
Chromium	N.D.	0.00033	0.0020
Cobalt	N.D.	0.00016	0.00050
Lead	N.D.	0.000071	0.00050
Manganese	N.D.	0.00063	0.0020
Nickel	N.D.	0.00060	0.0010
Selenium	N.D.	0.00028	0.0010
Thallium	N.D.	0.00013	0.00050
Batch number: 201130571402	Sample number(s): 1299335,1299337,1299339		
Mercury	N.D.	0.000050	0.00020
Batch number: 201130571602	Sample number(s): 1299344-1299347		
Boron	N.D.	0.0120	0.0300
Iron	N.D.	0.0400	0.200
Lithium	N.D.	0.0110	0.0500
Magnesium	N.D.	0.0400	0.100
Molybdenum	N.D.	0.0020	0.0100
Potassium	N.D.	0.204	0.500
Sodium	N.D.	0.239	1.00
Batch number: 201130571603	Sample number(s): 1299337		
Boron	N.D.	0.0120	0.0300
Iron	N.D.	0.0400	0.200
Lithium	N.D.	0.0110	0.0500
Magnesium	N.D.	0.0400	0.100
Molybdenum	N.D.	0.0020	0.0100
Potassium	N.D.	0.204	0.500

*- Outside of specification

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Quality Control Summary

Client Name: Normandeau Associates, Inc.
Reported: 05/13/2020 04:45

Group Number: 2096408

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	mg/l	mg/l	mg/l
Sodium	N.D.	0.239	1.00
Batch number: 201130571604	Sample number(s): 1299339		
Boron	N.D.	0.0120	0.0300
Iron	N.D.	0.0400	0.200
Lithium	N.D.	0.0110	0.0500
Magnesium	N.D.	0.0400	0.100
Molybdenum	N.D.	0.0020	0.0100
Potassium	N.D.	0.204	0.500
Sodium	N.D.	0.239	1.00
Batch number: 201130571605	Sample number(s): 1299335		
Boron	N.D.	0.0120	0.0300
Iron	N.D.	0.0400	0.200
Lithium	N.D.	0.0110	0.0500
Magnesium	N.D.	0.0400	0.100
Molybdenum	N.D.	0.0020	0.0100
Potassium	N.D.	0.204	0.500
Sodium	N.D.	0.239	1.00
Batch number: 201130705002A	Sample number(s): 1299344-1299347		
Aluminum	N.D.	0.0197	0.0250
Antimony	N.D.	0.00041	0.0010
Arsenic	N.D.	0.00068	0.0020
Barium	N.D.	0.00075	0.0020
Beryllium	N.D.	0.00012	0.00050
Cadmium	N.D.	0.00015	0.00050
Chromium	N.D.	0.00033	0.0020
Cobalt	N.D.	0.00016	0.00050
Lead	N.D.	0.000071	0.00050
Manganese	N.D.	0.00063	0.0020
Nickel	N.D.	0.00060	0.0010
Selenium	N.D.	0.00028	0.0010
Thallium	N.D.	0.00013	0.00050
Batch number: 201130705003A	Sample number(s): 1299335,1299337,1299339		
Aluminum	N.D.	0.0197	0.0250
Antimony	N.D.	0.00041	0.0010
Arsenic	N.D.	0.00068	0.0020
Barium	N.D.	0.00075	0.0020
Beryllium	N.D.	0.00012	0.00050
Cadmium	N.D.	0.00015	0.00050
Chromium	N.D.	0.00033	0.0020
Cobalt	N.D.	0.00016	0.00050
Lead	N.D.	0.000071	0.00050
Manganese	N.D.	0.00063	0.0020
Nickel	N.D.	0.00060	0.0010

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Quality Control Summary

Client Name: Normandeau Associates, Inc.
Reported: 05/13/2020 04:45

Group Number: 2096408

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	mg/l	mg/l	mg/l
Selenium	N.D.	0.00028	0.0010
Thallium	N.D.	0.00013	0.00050
Batch number: 201140571401	Sample number(s): 1299344-1299347		
Mercury	N.D.	0.000050	0.00020
Batch number: 20112135117A	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340-1299341,1299343,1299348		
Chloride	N.D.	0.20	0.40
Fluoride	N.D.	0.050	0.10
Sulfate	N.D.	0.30	1.0
Batch number: 20111964901A	Sample number(s): 1299330,1299334,1299336,1299338,1299340-1299341,1299343,1299348		
Total Dissolved Solids	N.D.	10.0	30.0
Batch number: 20112964901A	Sample number(s): 1299332		
Total Dissolved Solids	N.D.	10.0	30.0
	umhos/cm	umhos/cm	umhos/cm
Batch number: 20108005202A	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340,1299343,1299348		
Specific Conductance	N.D.	1.7	5.0

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	mg/l	mg/l	mg/l	mg/l					
Batch number: 201120571401	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340-1299343,1299348								
Mercury	0.00100	0.00109			109		80-110		
Batch number: 201120571402	Sample number(s): 1299331,1299333,1299349								
Mercury	0.00100	0.00105			105		80-110		
Batch number: 201120571601	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340-1299343,1299348								
Boron	0.0600	0.0576			96		85-115		
Calcium	0.400	0.408			102		85-115		
Iron	0.400	0.419			105		85-115		
Lithium	0.100	0.103			103		85-115		
Magnesium	0.200	0.204			102		85-115		
Molybdenum	0.0200	0.0197			99		85-115		
Potassium	5.60	5.81			104		85-115		
Sodium	2.00	2.02			101		85-115		
Batch number: 201120571605	Sample number(s): 1299331,1299333,1299349								
Boron	0.0600	0.0574			96		85-115		
Iron	0.400	0.405			101		85-115		

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Quality Control Summary

Client Name: Normandeau Associates, Inc.
Reported: 05/13/2020 04:45

Group Number: 2096408

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Lithium	0.100	0.101			101		85-115		
Magnesium	0.200	0.195			98		85-115		
Molybdenum	0.0200	0.0194			97		85-115		
Potassium	5.60	5.64			101		85-115		
Sodium	2.00	1.94			97		85-115		
Batch number: 201120705002A	Sample number(s): 1299334,1299340-1299343								
Aluminum	0.200	0.210			105		85-115		
Antimony	0.00600	0.00618			103		85-115		
Arsenic	0.0100	0.00993			99		85-115		
Barium	0.0500	0.0480			96		85-115		
Beryllium	0.00400	0.00400			100		85-115		
Cadmium	0.00500	0.00519			104		85-115		
Chromium	0.0500	0.0460			92		85-115		
Cobalt	0.250	0.229			92		85-115		
Lead	0.00500	0.00524			105		85-115		
Manganese	0.0500	0.0495			99		85-115		
Nickel	0.0500	0.0511			102		85-115		
Selenium	0.0100	0.0102			102		85-115		
Thallium	0.00200	0.00214			107		85-115		
Batch number: 201120705003A	Sample number(s): 1299331,1299333,1299336,1299349								
Aluminum	0.200	0.217			109		85-115		
Antimony	0.00600	0.00580			97		85-115		
Arsenic	0.0100	0.0104			104		85-115		
Barium	0.0500	0.0516			103		85-115		
Beryllium	0.00400	0.00405			101		85-115		
Cadmium	0.00500	0.00509			102		85-115		
Chromium	0.0500	0.0499			100		85-115		
Cobalt	0.250	0.241			96		85-115		
Lead	0.00500	0.00518			104		85-115		
Manganese	0.0500	0.0549			110		85-115		
Nickel	0.0500	0.0539			108		85-115		
Selenium	0.0100	0.0103			103		85-115		
Thallium	0.00200	0.00208			104		85-115		
Batch number: 201120705004A	Sample number(s): 1299330,1299332,1299338,1299348								
Aluminum	0.200	0.225			112		85-115		
Antimony	0.00600	0.00631			105		85-115		
Arsenic	0.0100	0.0107			107		85-115		
Barium	0.0500	0.0519			104		85-115		
Beryllium	0.00400	0.00416			104		85-115		
Cadmium	0.00500	0.00514			103		85-115		
Chromium	0.0500	0.0494			99		85-115		
Cobalt	0.250	0.237			95		85-115		

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Quality Control Summary

Client Name: Normandeau Associates, Inc.
Reported: 05/13/2020 04:45

Group Number: 2096408

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Lead	0.00500	0.00518			104		85-115		
Manganese	0.0500	0.0537			107		85-115		
Nickel	0.0500	0.0527			105		85-115		
Selenium	0.0100	0.0102			102		85-115		
Thallium	0.00200	0.00214			107		85-115		
Batch number: 201130571402	Sample number(s): 1299335,1299337,1299339								
Mercury	0.00100	0.000919			92		80-110		
Batch number: 201130571602	Sample number(s): 1299344-1299347								
Boron	0.0600	0.0566			94		85-115		
Iron	0.400	0.396			99		85-115		
Lithium	0.100	0.0980			98		85-115		
Magnesium	0.200	0.189			95		85-115		
Molybdenum	0.0200	0.0200			100		85-115		
Potassium	5.60	5.45			97		85-115		
Sodium	2.00	1.92			96		85-115		
Batch number: 201130571603	Sample number(s): 1299337								
Boron	0.0600	0.0545			91		85-115		
Iron	0.400	0.423			106		85-115		
Lithium	0.100	0.114			114		85-115		
Magnesium	0.200	0.204			102		85-115		
Molybdenum	0.0200	0.0217			109		85-115		
Potassium	5.60	5.66			101		85-115		
Sodium	2.00	1.99			100		85-115		
Batch number: 201130571604	Sample number(s): 1299339								
Boron	0.0600	0.0598			100		85-115		
Iron	0.400	0.343			86		85-115		
Lithium	0.100	0.0960			96		85-115		
Magnesium	0.200	0.217			109		85-115		
Molybdenum	0.0200	0.0206			103		85-115		
Potassium	5.60	5.66			101		85-115		
Sodium	2.00	1.96			98		85-115		
Batch number: 201130571605	Sample number(s): 1299335								
Boron	0.0600	0.0573			96		85-115		
Iron	0.400	0.415			104		85-115		
Lithium	0.100	0.0984			98		85-115		
Magnesium	0.200	0.199			100		85-115		
Molybdenum	0.0200	0.0193			97		85-115		
Potassium	5.60	5.59			100		85-115		
Sodium	2.00	1.94			97		85-115		
Batch number: 201130705002A	Sample number(s): 1299344-1299347								

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Quality Control Summary

Client Name: Normandeau Associates, Inc.
Reported: 05/13/2020 04:45

Group Number: 2096408

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Aluminum	0.200	0.216			108		85-115		
Antimony	0.00600	0.00690			115		85-115		
Arsenic	0.0100	0.0112			112		85-115		
Barium	0.0500	0.0552			110		85-115		
Beryllium	0.00400	0.00419			105		85-115		
Cadmium	0.00500	0.00581			116*		85-115		
Chromium	0.0500	0.0516			103		85-115		
Cobalt	0.250	0.270			108		85-115		
Lead	0.00500	0.00538			108		85-115		
Manganese	0.0500	0.0554			111		85-115		
Nickel	0.0500	0.0551			110		85-115		
Selenium	0.0100	0.0113			113		85-115		
Thallium	0.00200	0.00216			108		85-115		
Batch number: 201130705003A Sample number(s): 1299335,1299337,1299339									
Aluminum	0.200	0.187			94		85-115		
Antimony	0.00600	0.00663			111		85-115		
Arsenic	0.0100	0.00979			98		85-115		
Barium	0.0500	0.0516			103		85-115		
Beryllium	0.00400	0.00404			101		85-115		
Cadmium	0.00500	0.00504			101		85-115		
Chromium	0.0500	0.0507			101		85-115		
Cobalt	0.250	0.253			101		85-115		
Lead	0.00500	0.00510			102		85-115		
Manganese	0.0500	0.0502			100		85-115		
Nickel	0.0500	0.0499			100		85-115		
Selenium	0.0100	0.0104			104		85-115		
Thallium	0.00200	0.00210			105		85-115		
Batch number: 201140571401 Sample number(s): 1299344-1299347									
Mercury	0.00100	0.000915			91		80-110		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 20112135117A Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340-1299341,1299343,1299348									
Chloride	3.00	2.82			94		90-110		
Fluoride	0.750	0.734			98		90-110		
Sulfate	7.50	7.24			97		90-110		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 20111964901A Sample number(s): 1299330,1299334,1299336,1299338,1299340-1299341,1299343,1299348									
Total Dissolved Solids	200	197			99		74-127		
Batch number: 20112964901A Sample number(s): 1299332									
Total Dissolved Solids	200	188			94		74-127		

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Quality Control Summary

Client Name: Normandeau Associates, Inc.
Reported: 05/13/2020 04:45

Group Number: 2096408

LCS/LCSD (continued)

Analysis Name	LCS Spike Added Std. Units	LCS Conc Std. Units	LCSD Spike Added Std. Units	LCSD Conc Std. Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 20108005202A pH	7.00	7.02	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340,1299343,1299348		100		95-105		
	umhos/cm	umhos/cm	umhos/cm	umhos/cm					
Batch number: 20108005202A Specific Conductance	147	146.7	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340,1299343,1299348		100		97-103		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 201120571401	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340-1299343,1299348 UNSPK: 1299340									
Mercury	N.D.	0.00100	0.00113	0.00100	0.00113	113	113	80-120	1	20
Batch number: 201120571601	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340-1299343,1299348 UNSPK: 1299340									
Boron	0.0756	0.0600	0.129	0.0600	0.134	89	98	70-130	4	20
Calcium	30.78	0.400	29.66	0.400	30.8	-282 (2)	4 (2)	70-130	4	20
Iron	0.0837	0.400	0.433	0.400	0.463	87	95	70-130	7	20
Lithium	N.D.	0.100	0.104	0.100	0.110	104	110	70-130	6	20
Magnesium	8.38	0.200	8.11	0.200	8.36	-131 (2)	-8 (2)	70-130	3	20
Molybdenum	0.00300	0.0200	0.0232	0.0200	0.0244	101	107	70-130	5	20
Potassium	3.67	5.60	9.18	5.60	9.52	98	104	70-130	4	20
Sodium	15.71	2.00	16.98	2.00	17.4	64 (2)	85 (2)	70-130	2	20
Batch number: 201120705002A	Sample number(s): 1299334,1299340-1299343 UNSPK: 1299340									
Aluminum	0.0281	0.200	0.271	0.200	0.263	122	117	70-130	3	20
Antimony	N.D.	0.00600	0.00668	0.00600	0.00605	111	101	70-130	10	20
Arsenic	N.D.	0.0100	0.0104	0.0100	0.0103	104	103	70-130	1	20
Barium	0.0437	0.0500	0.0921	0.0500	0.0926	97	98	70-130	1	20
Beryllium	N.D.	0.00400	0.00442	0.00400	0.00408	111	102	70-130	8	20
Cadmium	N.D.	0.00500	0.00526	0.00500	0.00523	105	105	70-130	1	20
Chromium	0.000542	0.0500	0.0499	0.0500	0.0469	99	93	70-130	6	20
Cobalt	N.D.	0.250	0.236	0.250	0.233	95	93	70-130	2	20
Lead	0.0000981	0.00500	0.00553	0.00500	0.00530	109	104	75-125	4	20
Manganese	0.00352	0.0500	0.0563	0.0500	0.0531	106	99	70-130	6	20
Nickel	N.D.	0.0500	0.0523	0.0500	0.0510	105	102	70-130	3	20
Selenium	0.00218	0.0100	0.0127	0.0100	0.0124	106	102	70-130	3	20

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Quality Control Summary

Client Name: Normandeau Associates, Inc.
Reported: 05/13/2020 04:45

Group Number: 2096408

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Thallium	N.D.	0.00200	0.00212	0.00200	0.00201	106	101	70-130	5	20
Batch number: 201130571602	Sample number(s): 1299344-1299347 UNSPK: 1299344									
Boron	0.0765	0.0600	0.136	0.0600	0.141	99	107	70-130	3	20
Iron	N.D.	0.400	0.401	0.400	0.400	100	100	70-130	0	20
Lithium	N.D.	0.100	0.108	0.100	0.106	108	106	70-130	2	20
Magnesium	7.62	0.200	7.82	0.200	7.85	98 (2)	113 (2)	70-130	0	20
Molybdenum	0.00328	0.0200	0.0227	0.0200	0.0234	97	100	70-130	3	20
Potassium	3.45	5.60	8.89	5.60	8.93	97	98	70-130	0	20
Sodium	14.67	2.00	16.57	2.00	16.61	95 (2)	97 (2)	70-130	0	20
Batch number: 201130571603	Sample number(s): 1299337 UNSPK: 1299337									
Boron	0.0902	0.0600	0.151			101		70-130		
Iron	0.0805	0.400	0.483			101		70-130		
Lithium	0.0174	0.100	0.119			102		70-130		
Magnesium	8.82	0.200	9.02			103 (2)		70-130		
Molybdenum	0.00366	0.0200	0.0257			110		70-130		
Potassium	3.46	5.60	9.13			101		70-130		
Sodium	14.81	2.00	16.83			101 (2)		70-130		
Batch number: 201130571604	Sample number(s): 1299339 UNSPK: 1299339									
Boron	0.0856	0.0600	0.144			97		70-130		
Iron	N.D.	0.400	0.390			98		70-130		
Lithium	N.D.	0.100	0.103			103		70-130		
Magnesium	8.42	0.200	8.64			111 (2)		70-130		
Molybdenum	0.00213	0.0200	0.0225			102		70-130		
Potassium	3.36	5.60	9.12			103		70-130		
Sodium	14.62	2.00	16.72			105 (2)		70-130		
Batch number: 201130705002A	Sample number(s): 1299344-1299347 UNSPK: 1299344									
Aluminum	N.D.	0.200	0.235	0.200	0.248	117	124	70-130	5	20
Antimony	N.D.	0.00600	0.00663	0.00600	0.00648	110	108	70-130	2	20
Arsenic	N.D.	0.0100	0.0114	0.0100	0.0113	114	113	70-130	1	20
Barium	0.0470	0.0500	0.0987	0.0500	0.101	103	108	70-130	2	20
Beryllium	N.D.	0.00400	0.00417	0.00400	0.00400	104	100	70-130	4	20
Cadmium	N.D.	0.00500	0.00528	0.00500	0.00533	106	107	70-130	1	20
Chromium	N.D.	0.0500	0.0494	0.0500	0.0512	99	102	70-130	4	20
Cobalt	0.000252	0.250	0.262	0.250	0.272	105	109	70-130	4	20
Lead	N.D.	0.00500	0.00550	0.00500	0.00528	110	106	75-125	4	20
Manganese	N.D.	0.0500	0.0583	0.0500	0.0523	117	105	70-130	11	20
Nickel	0.000875	0.0500	0.0548	0.0500	0.0576	108	113	70-130	5	20
Selenium	0.00225	0.0100	0.0128	0.0100	0.0128	105	106	70-130	0	20
Thallium	N.D.	0.00200	0.00209	0.00200	0.00205	104	102	70-130	2	20

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Normandeau Associates, Inc.
Reported: 05/13/2020 04:45

Group Number: 2096408

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/l	MS Spike Added mg/l	MS Conc mg/l	MSD Spike Added mg/l	MSD Conc mg/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 201140571401 Mercury	Sample number(s): 1299344-1299347 UNSPK: 1299344									
	N.D.	0.00100	0.000970	0.00100	0.000923	97	92	80-120	5	20
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 20112135117A	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340-1299341,1299343,1299348 UNSPK: 1299340									
Chloride	24.64	10	33.96			93		90-110		
Fluoride	N.D.	1.00	1.11			111*		90-110		
Sulfate	29.08	25	53.26			97		90-110		
	mg/l	mg/l	mg/l	mg/l	mg/l					
Batch number: 20111964901A	Sample number(s): 1299330,1299334,1299336,1299338,1299340-1299341,1299343,1299348 UNSPK: 1299340									
Total Dissolved Solids	167	200	324			79		74-127		

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Batch number: 201120571401 Mercury	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340-1299343,1299348 BKG: 1299340			
	N.D.	N.D.	0 (1)	20
Batch number: 201120571601	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340-1299343,1299348 BKG: 1299340			
Boron	0.0756	0.0735	3 (1)	20
Calcium	30.78	29.88	3	20
Iron	0.0837	0.0436	63* (1)	20
Lithium	N.D.	N.D.	0 (1)	20
Magnesium	8.38	8.07	4	20
Molybdenum	0.00300	0.00467	44* (1)	20
Potassium	3.67	3.63	1	20
Sodium	15.71	15.3	3	20
Batch number: 201120705002A	Sample number(s): 1299334,1299340-1299343 BKG: 1299340			
Aluminum	0.0281	0.0307	9 (1)	20
Antimony	N.D.	N.D.	0 (1)	20
Arsenic	N.D.	N.D.	0 (1)	20
Barium	0.0437	0.0429	2	20
Beryllium	N.D.	N.D.	0 (1)	20

*- Outside of specification

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(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Normandeau Associates, Inc.
Reported: 05/13/2020 04:45

Group Number: 2096408

Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Cadmium	N.D.	N.D.	0 (1)	20
Chromium	0.000542	0.000377	36* (1)	20
Cobalt	N.D.	N.D.	0 (1)	20
Lead	0.0000981	0.0000909	8 (1)	20
Manganese	0.00352	0.00384	9 (1)	20
Nickel	N.D.	0.000659	200* (1)	20
Selenium	0.00218	0.00217	0 (1)	20
Thallium	N.D.	N.D.	0 (1)	20
Batch number: 201130571602 Sample number(s): 1299344-1299347 BKG: 1299344				
Boron	0.0765	0.0763	0 (1)	20
Iron	N.D.	N.D.	0 (1)	20
Lithium	N.D.	N.D.	0 (1)	20
Magnesium	7.62	7.60	0	20
Molybdenum	0.00328	0.00355	8 (1)	20
Potassium	3.45	3.45	0	20
Sodium	14.67	14.63	0	20
Batch number: 201130571603 Sample number(s): 1299337 BKG: 1299337				
Boron	0.0902	0.0905	0 (1)	20
Iron	0.0805	0.0696	15 (1)	20
Lithium	0.0174	0.0185	6 (1)	20
Magnesium	8.82	8.92	1	20
Molybdenum	0.00366	0.00483	28* (1)	20
Potassium	3.46	3.46	0	20
Sodium	14.81	14.95	1	20
Batch number: 201130571604 Sample number(s): 1299339 BKG: 1299339				
Boron	0.0856	0.0853	0 (1)	20
Iron	N.D.	N.D.	0 (1)	20
Lithium	N.D.	N.D.	0 (1)	20
Magnesium	8.42	8.53	1	20
Molybdenum	0.00213	0.00300	34* (1)	20
Potassium	3.36	3.39	1	20
Sodium	14.62	14.93	2	20
Batch number: 201130705002A Sample number(s): 1299344-1299347 BKG: 1299344				
Aluminum	N.D.	N.D.	0 (1)	20
Antimony	N.D.	N.D.	0 (1)	20
Arsenic	N.D.	N.D.	0 (1)	20
Barium	0.0470	0.0436	8	20
Beryllium	N.D.	N.D.	0 (1)	20
Cadmium	N.D.	N.D.	0 (1)	20
Chromium	N.D.	N.D.	0 (1)	20
Cobalt	0.000252	N.D.	200* (1)	20

*- Outside of specification

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(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Normandeau Associates, Inc.
Reported: 05/13/2020 04:45

Group Number: 2096408

Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/l	DUP Conc mg/l	DUP RPD	DUP RPD Max
Lead	N.D.	0.000340	200* (1)	20
Manganese	N.D.	N.D.	0 (1)	20
Nickel	0.000875	0.000692	23* (1)	20
Selenium	0.00225	0.00243	7 (1)	20
Thallium	N.D.	N.D.	0 (1)	20
Batch number: 201140571401	Sample number(s): 1299344-1299347 BKG: 1299344			
Mercury	N.D.	N.D.	0 (1)	20
	mg/l	mg/l		
Batch number: 20112135117A	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340-1299341,1299343,1299348 BKG: 1299340			
Chloride	24.64	24.24	2	15
Fluoride	N.D.	N.D.	0 (1)	15
Sulfate	29.08	29.37	1	15
	Degrees C	Degrees C		
Batch number: 20108005202A	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340,1299343,1299348 BKG: 1299340			
Temperature of pH	21.63	21.54	0	5
	mg/l	mg/l		
Batch number: 20107042801A	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340,1299343,1299348 BKG: 1299340			
Dissolved Oxygen	13.14	13.03	1	20
Batch number: 20111964901A	Sample number(s): 1299330,1299334,1299336,1299338,1299340-1299341,1299343,1299348 BKG: 1299340			
Total Dissolved Solids	167	167.5	0	5
	Std. Units	Std. Units		
Batch number: 20108005202A	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340,1299343,1299348 BKG: 1299340			
pH	8.72	8.74	0	4
	umhos/cm	umhos/cm		
Batch number: 20108005202A	Sample number(s): 1299330,1299332,1299334,1299336,1299338,1299340,1299343,1299348 BKG: 1299340			
Specific Conductance	305	304	0	5

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

Environmental Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

For Eurofins Lancaster Laboratories Environmental use only

Acct. # 10300 Group # 20910400 Sample # 1299330-49

COC # 604623

Client Information				Matrix			Analysis Requested										For Lab Use Only			
Client: <u>Normandeau Associates Inc. (10300)</u>		Acct. #:		Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Tissue <input type="checkbox"/>	Potable <input type="checkbox"/> Ground <input type="checkbox"/>	Water <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input checked="" type="checkbox"/>	Other:	Total # of Containers	Preservation and Filtration Codes										FSC: <u>257965</u>	Remarks
Project Name/#: <u>Black Gut Creek / 24416.000</u>		PWSID #:							Total Dissolved Solids	Total Metals	Dissolved Oxygen	Chloride	Fluoride	Sulfate	PH	Specific Conductance	Temperature of PH	Lab Filtered Metals	SCR#: <u>257965</u>	
Project Manager: <u>Steven Adams</u>		P.O. #:		Grab	Composite	Total # of Containers	Total # of Containers	Total Dissolved Solids	Total Metals	Dissolved Oxygen	Chloride	Fluoride	Sulfate	PH	Specific Conductance	Temperature of PH	Lab Filtered Metals	Preservation Codes		
Sampler: <u>Scott Copenheaver/Ashley Picker</u>		Quote #: <u>222446A</u>																H=HCl	T=Thiosulfate	
State where samples were collected: <u>Pa</u>		For Compliance: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Sample Identification		Date	Time													
<u>20-04-16</u>	<u>BGC01-01</u>			X				X	X	X	X	X	X	X	X	X	X	X	See Attachments	
<u>20-04-16</u>	<u>BGC01-02</u>			X				X	X	X	X	X	X	X	X	X	X	X		
<u>20-04-16</u>	<u>BGC01-03</u>			X				X	X	X	X	X	X	X	X	X	X	X		
<u>20-04-16</u>	<u>BGC01-04</u>			X				X	X	X	X	X	X	X	X	X	X	X		
<u>20-04-16</u>	<u>BGC01-05</u>			X				X	X	X	X	X	X	X	X	X	X	X		
<u>20-04-16</u>	<u>HM01-06</u>			X				X	X	X	X	X	X	X	X	X	X	X		
<u>20-04-16</u>	<u>DUP01</u>			X				X	X	X	X	X	X	X	X	X	X	X		
<u>20-04-16</u>	<u>HM01-06-MS</u>			X				X	X	X	X	X	X	X	X	X	X	X		
<u>20-04-16</u>	<u>HM01-06-MSD</u>			X				X	X	X	X	X	X	X	X	X	X	X	V	

Turnaround Time (TAT) Requested (please circle)		Relinquished by		Date	Time	Received by		Date	Time
<u>Standard</u> Rush		<u>Scott Copenheaver</u>		<u>4-16-20</u>	<u>1500</u>	<u>Steven W Adams</u>		<u>4-16-20</u>	<u>1500</u>
(Rush TAT is subject to laboratory approval and surcharge.)		<u>Steven W Adams</u>		<u>4-16-20</u>	<u>1540</u>				
Requested TAT in business days: _____									
E-mail address: <u>sadams@normandeau.com</u>									
Data Package Options (circle if required)		Relinquished by		Date	Time	Received by		Date	Time
Type I (EPA Level 3 Equivalent/non-CLP)	Type VI (Raw Data Only)								
Type III (Reduced non-CLP)	NJ DKQP TX TRRP-13								
NYSDEC Category A or B	MA MCP CT RCP								
EDD Required? <u>Yes</u> No		Relinquished by Commercial Carrier:							
If yes, format: <u>Standard</u>		UPS _____ FedEx _____ Other _____							
Site-Specific QC (MS/MSD/Dup)? Yes No		Temperature upon receipt <u>2.7 - 4°C</u>							
(If yes, indicate QC sample and submit triplicate sample volume.)									



Lancaster Laboratories
Environmental

A 10300 62096408 S.1299330-49

Steve Adams
Normandeau Associates, Inc. (A# 10300)
1921 River Road
Drumore, PA 17518
717-548-6438
sadams@normandeau.com

Quote #: 222446A
Account Mgr: Jeremy Young
(717) 693-5814
JeremyYoung@eurofinsUS.com
Project Mgr: Eurofins Client Services
717-656-2300
ClientServicesLancaster@eurofinsUS.com
Prepared On: 02/27/2020 Revised 3/12/2020
Expires: 05/27/2020
Prepared By: Marianne Bragg

Project Requirements:

Project Name: Surface Water Testing - 2020 - 2021
Accreditations: PA
Electronic Deliverable: Excel
Data Package: Standard Lab Report
Detection Limits: ELLE 's standard limits
Minimum Login Charge: N/A

Analysis Name	Method Name	Qty	Cat #	Unit Cost	Total Cost
6 samples per event plus 1 MS, 1 MSD, 1 Duplicate = 9 sample per event, 2 events per year for 2 years = 36 samples					
pH	SM 4500 H+B	36	12152	\$5.00	\$180.00
Total Dissolved Solids	SM 2540 C	36	06649	\$13.00	\$468.00
Total Hardness as CaCO3 (calculation based on Calcium and Magnesium)	SM 2340B	36	06256	\$5.00	\$180.00
Metals 200.7/200.8/245.1 Total (includes Magnesium)	EPA 200.7/200.8/245.1	36	05761	\$71.00	\$2,556.00
Metals 200.7/200.8/245.1 Dissolved (includes Magnesium)	EPA 200.7/200.8/245.1	36	05761	\$71.00	\$2,556.00
Lab Filtration for Dissolved Metals		36	03277	\$15.00	\$540.00
Dissolved Oxygen	SM 4500-O G	36	00428	\$16.00	\$576.00
Specific Conductance	SM 2510 B	36	12146	\$18.00	\$648.00
3 Anions (Chloride, Fluoride, Sulfate)	EPA 300.0	36	13683	\$35.00	\$1,260.00
Subtotal					\$8,964.00
Environmentally Responsible Sample Handling (per sample)		28		\$2.50	\$70.00
Total					\$9,034.00

Accreditation

ELLE is certified in PA for all parameters quoted above.

ELLE is not certified for Aluminum by EPA 200.7 in non-potable water. Aluminum will be analyzed by EPA 200.8.

Bottles/Shipping/Courier

Sample containers, coolers and chain of custody forms are provided at no additional cost.
Please provide 5 days notice when requesting sample container/collection kit delivery.
Sample containers will be delivered by lab courier.

9. ANALYTICAL METHODS

A10300 G20916408 S.1299830-49

Table 2 details the parameters and the associated analytical methods that will be applied for the surface water sample analyses. Analytical methods and holding times may vary based on the techniques employed by the designated laboratory.

Table 2: Surface Water Sample Analysis

PARAMETER	METHOD	HOLDING TIME
Constituents of Concern ⁽¹⁾		
pH	SM4500H+B	Immediate
Total Dissolved Solids (TDS)	SM2450C	7 Days
Chloride	EPA 300.0	28 Days
Fluoride	EPA 300.0	28 Days
Sulfate	EPA 300.0	28 Days
Hardness	E200.7/SM2340B	6 Months
Aluminum	EPA 200.7	6 Months
Antimony	EPA 200.8	6 Months
Arsenic	EPA 200.8	6 Months
Barium	EPA 200.8	6 Months
Beryllium	EPA 200.8	6 Months
Boron	EPA 200.7	6 Months
Cadmium	EPA 200.8	6 Months
Calcium	EPA 200.7	6 Months
Chromium	EPA 200.8	6 Months
Cobalt	EPA 200.8	6 Months
Iron	EPA 200.7	6 Months
Lead	EPA 200.8	6 Months
Lithium	EPA 200.7	6 Months
Manganese	EPA 200.8	6 Months
Mercury	EPA 245.1	28 Days
Molybdenum	EPA 200.7	6 Months
Nickel	EPA 200.8	6 Months
Potassium	EPA 200.7	6 Months
Selenium	EPA 200.8	6 Months
Sodium	EPA 200.7	6 Months
Thallium	EPA 200.8	6 Months
Additional Parameters		
Temperature	SM2550B	Immediate
Dissolved Oxygen	SM4500-O G	Immediate
Specific Conductance	SM2510B	28 Days

(1) Complete list of "Constituents of Concern" as defined in the Study/Work Plan

For the metal constituents, testing and reporting shall include "total" and "dissolved" concentrations. It is proposed that the requisite filtering process for the dissolved analysis be performed by the designated laboratory.



Client: Normandeau Associates Inc

Black Gut Creek / 24416.000

Delivery and Receipt Information

Delivery Method: Client Drop Off Arrival Date: 04/16/2020
 Number of Packages: 2 Number of Projects: 1
 State/Province of Origin: PA

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	No
Custody Seal Intact:	Yes	Total Trip Blank Qty:	0
Samples Chilled:	Yes	Air Quality Samples Present:	No
Paperwork Enclosed:	Yes		
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by William Mathers

Samples Chilled Details: Black Gut Creek / 24416.000

Thermometer Types: *DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

Cooler #	Matrix	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	Water	46730060WS	4.4	IR	Wet	Y	Bagged	N
2	Water	46730060WS	2.7	IR	Wet	Y	Bagged	N

Sample Date/Time Discrepancy Details: Black Gut Creek / 24416.000

Sample ID on COC	Date/Time on Label	Comments
20-04-16 BGC01-01	4/16/2020 08:45	
20-04-16 BGC01-02	4/16/2020 09:40	
20-04-16 BGC01-03	4/16/2020 10:35	
20-04-16 BGC01-04	4/16/2020 12:45	
20-04-16 BGC01-05	4/16/2020 11:48	
20-04-16 HMR01-06	4/16/2020 13:30	
20-04-16 HMR01-06-MS	4/16/2020 13:43	
20-04-16 HMR01-06-MSD	4/16/2020 13:48	
20-04-16 DUP01	4/16/2020 10:48	

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is less than the LOQ
K2	Continuing Calibration Blank is above the QC limit and the sample result is less than the LOQ
K3	Initial Calibration Verification is above the QC limit and the sample result is less than the LOQ
K4	Continuing Calibration Verification is above the QC limit and the sample result is less than the LOQ
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report
B	Detection in the Method Blank
Q0	LCS/LCSD Low
Q1	LCS/LCSD High
Q2	MS/MSD Low
Q3	MS/MSD High
Q7	LCS/LCSD RPD
Q8	DUP RPD
Q9	MS/MSD RPD

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.