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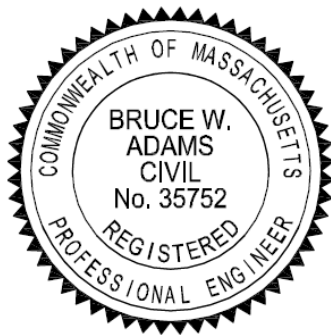
WESTON & SAMPSON ENGINEERS, INC.  
55 Walkers Brook Drive, Suite 100  
Reading, MA 01867  
tel: 978.532.1900

# REPORT

April 2021

TOWN OF  
**Barnstable**  
MASSACHUSETTS

Source Exploration Report (Volume II)



*Bruce W. Adams*



## APPENDIX D WATER QUALITY LAB REPORTS



## ANALYTICAL REPORT

Lab Number:	L2009663
Client:	Weston & Sampson 55 Walkers Brook Drive Suite 100 Reading, MA 01867
ATTN:	Kevin MacKinnon
Phone:	(978) 532-1900
Project Name:	BARNSTABLE NEW SOURCE
Project Number:	2170766
Report Date:	03/31/20

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L2009663-01	TW-2B-20	DW	BARNSTABLE	03/03/20 16:00	03/04/20
L2009663-02	FIELD BLANK	DW	BARNSTABLE	03/03/20 16:00	03/04/20
L2009663-03	TRIP BLANK	DW	BARNSTABLE	03/03/20 16:00	03/04/20



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

**HOLD POLICY** - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

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**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

### Case Narrative (continued)

#### Report Submission

March 31, 2020: This final report includes the results of all requested analyses.

March 11, 2020: This is a preliminary report.

The analyses of Synthetic Organics (SOCs), Gross Alpha, Gross Beta, Uranium, Radium 226, Radium 228, and Radon were subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

#### Sample Receipt

The analyses of Gross Alpha, Gross Beta, and Radon were performed at the client's request.

L2009663-01M: The sample was received above the appropriate pH for the 1,4 Dioxane via EPA 522 analysis.

#### Perfluorinated Alkyl Acids

The WG1347551-2 LCS recovery, associated with L2009663-01 and -02, is above the acceptance criteria for 2,3,3,3-tetrafluoro-2-[1,1,2,2,3,3,3-heptafluoropropoxy]-propanoic acid (hfpo-da) (145%); however, the associated samples are non-detect to the RL for this target analyte. The results of the original analysis are reported.


The WG1347551-2/-3 LCS/LCSD RPD, associated with L2009663-01 and -02, is above the acceptance criteria for 2,3,3,3-tetrafluoro-2-[1,1,2,2,3,3,3-heptafluoropropoxy]-propanoic acid (hfpo-da) (37%).

#### Odor @ 60 C

L2009663-01 was analyzed with the method required holding time exceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Michelle M. Morris

Title: Technical Director/Representative

Date: 03/31/20

# ORGANICS

# VOLATILES

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

**SAMPLE RESULTS**

Lab ID: L2009663-01  
 Client ID: TW-2B-20  
 Sample Location: BARNSTABLE

Date Collected: 03/03/20 16:00  
 Date Received: 03/04/20  
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw  
 Analytical Method: 16,524.2  
 Analytical Date: 03/06/20 02:35  
 Analyst: TAB

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
Dichlorodifluoromethane	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	0.50	--	1
Bromomethane	ND		ug/l	0.50	--	1
Chloroethane	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	0.50	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
Methylene chloride	ND		ug/l	0.50	--	1
Methyl tert butyl ether	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.50	--	1
1,1-Dichloroethane	ND		ug/l	0.50	--	1
2,2-Dichloropropane	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Chloroform	0.53		ug/l	0.50	--	1
Bromochloromethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	0.50	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2009663**Project Number:** 2170766**Report Date:** 03/31/20**SAMPLE RESULTS**

Lab ID: L2009663-01  
 Client ID: TW-2B-20  
 Sample Location: BARNSTABLE

Date Collected: 03/03/20 16:00  
 Date Received: 03/04/20  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
1,3-Dichloropropane	ND		ug/l	0.50	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,2-Dibromoethane	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
p/m-Xylene	ND		ug/l	0.50	--	1
o-Xylene	ND		ug/l	0.50	--	1
Styrene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
Bromoform	ND		ug/l	0.50	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
1,2,3-Trichloropropane	ND		ug/l	0.50	--	1
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	0.50	--	1
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--	1
o-Chlorotoluene	ND		ug/l	0.50	--	1
p-Chlorotoluene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	0.50	--	1
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
1,3-Dichlorobenzene	ND		ug/l	0.50	--	1
1,4-Dichlorobenzene	ND		ug/l	0.50	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	0.50	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--	1
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2009663**Project Number:** 2170766**Report Date:** 03/31/20**SAMPLE RESULTS**

Lab ID: L2009663-01

Date Collected: 03/03/20 16:00

Client ID: TW-2B-20

Date Received: 03/04/20

Sample Location: BARNSTABLE

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	104		80-120
4-Bromofluorobenzene	94		80-120

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

**SAMPLE RESULTS**

Lab ID: L2009663-03  
 Client ID: TRIP BLANK  
 Sample Location: BARNSTABLE

Date Collected: 03/03/20 16:00  
 Date Received: 03/04/20  
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw  
 Analytical Method: 16,524.2  
 Analytical Date: 03/06/20 03:03  
 Analyst: TAB

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
Dichlorodifluoromethane	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	0.50	--	1
Bromomethane	ND		ug/l	0.50	--	1
Chloroethane	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	0.50	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
Methylene chloride	ND		ug/l	0.50	--	1
Methyl tert butyl ether	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.50	--	1
1,1-Dichloroethane	ND		ug/l	0.50	--	1
2,2-Dichloropropane	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Chloroform	ND		ug/l	0.50	--	1
Bromochloromethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	0.50	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.50	--	1



**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2009663**Project Number:** 2170766**Report Date:** 03/31/20**SAMPLE RESULTS**

Lab ID: L2009663-03  
 Client ID: TRIP BLANK  
 Sample Location: BARNSTABLE

Date Collected: 03/03/20 16:00  
 Date Received: 03/04/20  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
1,3-Dichloropropane	ND		ug/l	0.50	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,2-Dibromoethane	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
p/m-Xylene	ND		ug/l	0.50	--	1
o-Xylene	ND		ug/l	0.50	--	1
Styrene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
Bromoform	ND		ug/l	0.50	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
1,2,3-Trichloropropane	ND		ug/l	0.50	--	1
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	0.50	--	1
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--	1
o-Chlorotoluene	ND		ug/l	0.50	--	1
p-Chlorotoluene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	0.50	--	1
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
1,3-Dichlorobenzene	ND		ug/l	0.50	--	1
1,4-Dichlorobenzene	ND		ug/l	0.50	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	0.50	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--	1
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2009663**Project Number:** 2170766**Report Date:** 03/31/20**SAMPLE RESULTS**

Lab ID: L2009663-03

Date Collected: 03/03/20 16:00

Client ID: TRIP BLANK

Date Received: 03/04/20

Sample Location: BARNSTABLE

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	105		80-120
4-Bromofluorobenzene	92		80-120

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 03/05/20 20:47  
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1348152-4					
Dichlorodifluoromethane	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	0.50	--
Bromomethane	ND		ug/l	0.50	--
Chloroethane	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	0.50	--
1,1-Dichloroethene	ND		ug/l	0.50	--
Methylene chloride	ND		ug/l	0.50	--
Methyl tert butyl ether	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.50	--
1,1-Dichloroethane	ND		ug/l	0.50	--
2,2-Dichloropropane	ND		ug/l	0.50	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Chloroform	ND		ug/l	0.50	--
Bromochloromethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	0.50	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.50	--
1,3-Dichloropropane	ND		ug/l	0.50	--

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 03/05/20 20:47  
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1348152-4					
Tetrachloroethene	ND		ug/l	0.50	--
Dibromochloromethane	ND		ug/l	0.50	--
1,2-Dibromoethane	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Ethylbenzene	ND		ug/l	0.50	--
p/m-Xylene	ND		ug/l	0.50	--
o-Xylene	ND		ug/l	0.50	--
Styrene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
Bromoform	ND		ug/l	0.50	--
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
1,2,3-Trichloropropane	ND		ug/l	0.50	--
n-Propylbenzene	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	0.50	--
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--
o-Chlorotoluene	ND		ug/l	0.50	--
p-Chlorotoluene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	0.50	--
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
1,3-Dichlorobenzene	ND		ug/l	0.50	--
1,4-Dichlorobenzene	ND		ug/l	0.50	--
n-Butylbenzene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	0.50	--
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 03/05/20 20:47  
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1348152-4					
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	105		80-120
4-Bromofluorobenzene	94		80-120

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1348152-3								
Dichlorodifluoromethane	72		-		70-130	-		20
Chloromethane	102		-		70-130	-		20
Vinyl chloride	95		-		70-130	-		20
Bromomethane	105		-		70-130	-		20
Chloroethane	102		-		70-130	-		20
Trichlorofluoromethane	95		-		70-130	-		20
1,1-Dichloroethene	95		-		70-130	-		20
Methylene chloride	100		-		70-130	-		20
Methyl tert butyl ether	108		-		70-130	-		20
trans-1,2-Dichloroethene	95		-		70-130	-		20
1,1-Dichloroethane	95		-		70-130	-		20
2,2-Dichloropropane	95		-		70-130	-		20
cis-1,2-Dichloroethene	98		-		70-130	-		20
Chloroform	98		-		70-130	-		20
Bromochloromethane	100		-		70-130	-		20
1,1,1-Trichloroethane	95		-		70-130	-		20
1,1-Dichloropropene	98		-		70-130	-		20
Carbon tetrachloride	90		-		70-130	-		20
1,2-Dichloroethane	102		-		70-130	-		20
Benzene	100		-		70-130	-		20
Trichloroethene	98		-		70-130	-		20
1,2-Dichloropropane	98		-		70-130	-		20
Bromodichloromethane	92		-		70-130	-		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1348152-3								
Dibromomethane	108		-		70-130	-		20
cis-1,3-Dichloropropene	90		-		70-130	-		20
Toluene	98		-		70-130	-		20
trans-1,3-Dichloropropene	92		-		70-130	-		20
1,1,2-Trichloroethane	108		-		70-130	-		20
1,3-Dichloropropane	108		-		70-130	-		20
Tetrachloroethene	98		-		70-130	-		20
Dibromochloromethane	90		-		70-130	-		20
1,2-Dibromoethane	105		-		70-130	-		20
Chlorobenzene	100		-		70-130	-		20
1,1,1,2-Tetrachloroethane	90		-		70-130	-		20
Ethylbenzene	100		-		70-130	-		20
p/m-Xylene	100		-		70-130	-		20
o-Xylene	95		-		70-130	-		20
Styrene	100		-		70-130	-		20
Isopropylbenzene	95		-		70-130	-		20
Bromoform	92		-		70-130	-		20
1,1,1,2,2-Tetrachloroethane	115		-		70-130	-		20
1,2,3-Trichloropropane	115		-		70-130	-		20
n-Propylbenzene	98		-		70-130	-		20
Bromobenzene	100		-		70-130	-		20
1,3,5-Trimethylbenzene	95		-		70-130	-		20
o-Chlorotoluene	100		-		70-130	-		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	RPD	
	%Recovery	Qual	%Recovery	Qual			Qual	Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1348152-3								
p-Chlorotoluene	102		-		70-130	-		20
tert-Butylbenzene	92		-		70-130	-		20
1,2,4-Trimethylbenzene	100		-		70-130	-		20
sec-Butylbenzene	95		-		70-130	-		20
p-Isopropyltoluene	100		-		70-130	-		20
1,3-Dichlorobenzene	100		-		70-130	-		20
1,4-Dichlorobenzene	98		-		70-130	-		20
n-Butylbenzene	98		-		70-130	-		20
1,2-Dichlorobenzene	100		-		70-130	-		20
1,2-Dibromo-3-chloropropane	95		-		70-130	-		20
1,2,4-Trichlorobenzene	98		-		70-130	-		20
Hexachlorobutadiene	95		-		70-130	-		20
Naphthalene	90		-		70-130	-		20
1,2,3-Trichlorobenzene	92		-		70-130	-		20

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
1,2-Dichlorobenzene-d4	99				80-120
4-Bromofluorobenzene	102				80-120



## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

<b>Parameter</b>	<b>Native Sample</b>	<b>MS Added</b>	<b>MS Found</b>	<b>MS %Recovery</b>	<b>Qual</b>	<b>MSD Found</b>	<b>MSD %Recovery</b>	<b>Qual</b>	<b>Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01,03    QC Batch ID: WG1348152-6    QC Sample: L2009486-01    Client ID: MS Sample												
Dichlorodifluoromethane	ND	4	2.5	62	Q	-	-		70-130	-		20
Chloromethane	ND	4	2.9	72		-	-		70-130	-		20
Vinyl chloride	ND	4	3.2	80		-	-		70-130	-		20
Bromomethane	ND	4	2.8	70		-	-		70-130	-		20
Chloroethane	ND	4	3.1	78		-	-		70-130	-		20
Trichlorofluoromethane	ND	4	3.3	82		-	-		70-130	-		20
1,1-Dichloroethene	ND	4	3.3	82		-	-		70-130	-		20
Methylene chloride	ND	4	3.1	78		-	-		70-130	-		20
Methyl tert butyl ether	ND	4	3.2	80		-	-		70-130	-		20
trans-1,2-Dichloroethene	ND	4	3.4	85		-	-		70-130	-		20
1,1-Dichloroethane	ND	4	3.3	82		-	-		70-130	-		20
2,2-Dichloropropane	ND	4	3.0	75		-	-		70-130	-		20
cis-1,2-Dichloroethene	ND	4	3.4	85		-	-		70-130	-		20
Chloroform	ND	4	3.3	82		-	-		70-130	-		20
Bromochloromethane	ND	4	3.2	80		-	-		70-130	-		20
1,1,1-Trichloroethane	ND	4	3.3	82		-	-		70-130	-		20
1,1-Dichloropropene	ND	4	3.5	88		-	-		70-130	-		20
Carbon tetrachloride	ND	4	3.4	85		-	-		70-130	-		20
1,2-Dichloroethane	ND	4	3.4	85		-	-		70-130	-		20
Benzene	ND	4	3.4	85		-	-		70-130	-		20
Trichloroethene	ND	4	3.5	88		-	-		70-130	-		20
1,2-Dichloropropane	ND	4	3.3	82		-	-		70-130	-		20
Bromodichloromethane	ND	4	3.2	80		-	-		70-130	-		20
Dibromomethane	ND	4	3.3	82		-	-		70-130	-		20

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

<b>Parameter</b>	<b>Native Sample</b>	<b>MS Added</b>	<b>MS Found</b>	<b>MS %Recovery</b>	<b>Qual</b>	<b>MSD Found</b>	<b>MSD %Recovery</b>	<b>Qual</b>	<b>Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01,03    QC Batch ID: WG1348152-6    QC Sample: L2009486-01    Client ID: MS Sample												
cis-1,3-Dichloropropene	ND	4	2.9	72		-	-		70-130	-		20
Toluene	ND	4	3.4	85		-	-		70-130	-		20
trans-1,3-Dichloropropene	ND	4	2.9	72		-	-		70-130	-		20
1,1,2-Trichloroethane	ND	4	3.4	85		-	-		70-130	-		20
1,3-Dichloropropane	ND	4	3.3	82		-	-		70-130	-		20
Tetrachloroethene	ND	4	3.6	90		-	-		70-130	-		20
Dibromochloromethane	ND	4	3.0	75		-	-		70-130	-		20
1,2-Dibromoethane	ND	4	3.1	78		-	-		70-130	-		20
Chlorobenzene	ND	4	3.4	85		-	-		70-130	-		20
1,1,1,2-Tetrachloroethane	ND	4	3.1	78		-	-		70-130	-		20
Ethylbenzene	ND	4	3.2	80		-	-		70-130	-		20
p/m-Xylene	ND	8	6.5	81		-	-		70-130	-		20
o-Xylene	ND	4	3.0	75		-	-		70-130	-		20
Styrene	ND	4	3.0	75		-	-		70-130	-		20
Isopropylbenzene	ND	4	3.0	75		-	-		70-130	-		20
Bromoform	ND	4	2.9	72		-	-		70-130	-		20
1,1,1,2,2-Tetrachloroethane	ND	4	3.4	85		-	-		70-130	-		20
1,2,3-Trichloropropane	ND	4	3.5	88		-	-		70-130	-		20
n-Propylbenzene	ND	4	3.2	80		-	-		70-130	-		20
Bromobenzene	ND	4	3.2	80		-	-		70-130	-		20
1,3,5-Trimethylbenzene	ND	4	2.9	72		-	-		70-130	-		20
o-Chlorotoluene	ND	4	3.2	80		-	-		70-130	-		20
p-Chlorotoluene	ND	4	3.1	78		-	-		70-130	-		20
tert-Butylbenzene	ND	4	2.9	72		-	-		70-130	-		20

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01,03    QC Batch ID: WG1348152-6    QC Sample: L2009486-01    Client ID: MS Sample												
1,2,4-Trimethylbenzene	ND	4	2.7	68	Q	-	-		70-130	-		20
sec-Butylbenzene	ND	4	3.1	78		-	-		70-130	-		20
p-Isopropyltoluene	ND	4	2.8	70		-	-		70-130	-		20
1,3-Dichlorobenzene	ND	4	3.3	82		-	-		70-130	-		20
1,4-Dichlorobenzene	ND	4	3.2	80		-	-		70-130	-		20
n-Butylbenzene	ND	4	2.5	62	Q	-	-		70-130	-		20
1,2-Dichlorobenzene	ND	4	3.2	80		-	-		70-130	-		20
1,2-Dibromo-3-chloropropane	ND	4	2.8	70		-	-		70-130	-		20
1,2,4-Trichlorobenzene	ND	4	2.4	60	Q	-	-		70-130	-		20
Hexachlorobutadiene	ND	4	3.3	82		-	-		70-130	-		20
Naphthalene	ND	4	2.1	52	Q	-	-		70-130	-		20
1,2,3-Trichlorobenzene	ND	4	2.3	58	Q	-	-		70-130	-		20

<i>Surrogate</i>	<i>MS % Recovery</i>	<i>MS Qualifier</i>	<i>MSD % Recovery</i>	<i>MSD Qualifier</i>	<i>Acceptance Criteria</i>
1,2-Dichlorobenzene-d4	100				80-120
4-Bromofluorobenzene	101				80-120

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2009663

Report Date: 03/31/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG1348152-5 QC Sample: L2010059-01 Client ID: DUP Sample						
Dichlorodifluoromethane	ND	ND	ug/l	NC		20
Chloromethane	ND	ND	ug/l	NC		20
Vinyl chloride	ND	ND	ug/l	NC		20
Bromomethane	ND	ND	ug/l	NC		20
Chloroethane	ND	ND	ug/l	NC		20
Trichlorofluoromethane	ND	ND	ug/l	NC		20
1,1-Dichloroethene	ND	ND	ug/l	NC		20
Methylene chloride	ND	ND	ug/l	NC		20
Methyl tert butyl ether	ND	ND	ug/l	NC		20
trans-1,2-Dichloroethene	ND	ND	ug/l	NC		20
1,1-Dichloroethane	ND	ND	ug/l	NC		20
2,2-Dichloropropane	ND	ND	ug/l	NC		20
cis-1,2-Dichloroethene	ND	ND	ug/l	NC		20
Chloroform	3.8	3.6	ug/l	5		20
Bromochloromethane	ND	ND	ug/l	NC		20
1,1,1-Trichloroethane	ND	ND	ug/l	NC		20
1,1-Dichloropropene	ND	ND	ug/l	NC		20
Carbon tetrachloride	ND	ND	ug/l	NC		20
1,2-Dichloroethane	ND	ND	ug/l	NC		20
Benzene	ND	ND	ug/l	NC		20
Trichloroethene	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2009663

Report Date: 03/31/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG1348152-5 QC Sample: L2010059-01 Client ID: DUP Sample						
1,2-Dichloropropane	ND	ND	ug/l	NC		20
Bromodichloromethane	1.7	1.5	ug/l	13		20
Dibromomethane	ND	ND	ug/l	NC		20
cis-1,3-Dichloropropene	ND	ND	ug/l	NC		20
Toluene	ND	ND	ug/l	NC		20
trans-1,3-Dichloropropene	ND	ND	ug/l	NC		20
1,1,2-Trichloroethane	ND	ND	ug/l	NC		20
1,3-Dichloropropane	ND	ND	ug/l	NC		20
Tetrachloroethene	ND	ND	ug/l	NC		20
Dibromochloromethane	0.61	0.63	ug/l	3		20
1,2-Dibromoethane	ND	ND	ug/l	NC		20
Chlorobenzene	ND	ND	ug/l	NC		20
1,1,1,2-Tetrachloroethane	ND	ND	ug/l	NC		20
Ethylbenzene	ND	ND	ug/l	NC		20
p/m-Xylene	ND	ND	ug/l	NC		20
o-Xylene	ND	ND	ug/l	NC		20
Styrene	ND	ND	ug/l	NC		20
Isopropylbenzene	ND	ND	ug/l	NC		20
Bromoform	ND	ND	ug/l	NC		20
1,1,1,2-Tetrachloroethane	ND	ND	ug/l	NC		20
1,2,3-Trichloropropane	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2009663

Report Date: 03/31/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG1348152-5 QC Sample: L2010059-01 Client ID: DUP Sample						
Xylene (Total) <sup>1</sup>	ND	ND	ug/l	NC		20
n-Propylbenzene	ND	ND	ug/l	NC		20
Bromobenzene	ND	ND	ug/l	NC		20
Trihalomethanes, Total	6.1	5.7	ug/l	6		20
1,3,5-Trimethylbenzene	ND	ND	ug/l	NC		20
o-Chlorotoluene	ND	ND	ug/l	NC		20
p-Chlorotoluene	ND	ND	ug/l	NC		20
tert-Butylbenzene	ND	ND	ug/l	NC		20
1,2,4-Trimethylbenzene	ND	ND	ug/l	NC		20
sec-Butylbenzene	ND	ND	ug/l	NC		20
p-Isopropyltoluene	ND	ND	ug/l	NC		20
1,3-Dichlorobenzene	ND	ND	ug/l	NC		20
1,4-Dichlorobenzene	ND	ND	ug/l	NC		20
n-Butylbenzene	ND	ND	ug/l	NC		20
1,2-Dichlorobenzene	ND	ND	ug/l	NC		20
1,2-Dibromo-3-chloropropane	ND	ND	ug/l	NC		20
1,2,4-Trichlorobenzene	ND	ND	ug/l	NC		20
Hexachlorobutadiene	ND	ND	ug/l	NC		20
Naphthalene	ND	ND	ug/l	NC		20
1,2,3-Trichlorobenzene	ND	ND	ug/l	NC		20

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Duplicate Analysis**  
**Batch Quality Control**

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG1348152-5 QC Sample: L2010059-01 Client ID: DUP Sample						

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	103		106		80-120
4-Bromofluorobenzene	95		93		80-120

# SEMIVOLATILES



**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2009663**Project Number:** 2170766**Report Date:** 03/31/20**SAMPLE RESULTS**

Lab ID: L2009663-01  
 Client ID: TW-2B-20  
 Sample Location: BARNSTABLE

Date Collected: 03/03/20 16:00  
 Date Received: 03/04/20  
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw  
 Analytical Method: 120,522  
 Analytical Date: 03/09/20 08:31  
 Analyst: PS

Extraction Method: EPA 522  
 Extraction Date: 03/06/20 07:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.150	--	1
Surrogate			% Recovery	Qualifier	Acceptance Criteria	
1,4-Dioxane-d8			81		70-130	

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

**SAMPLE RESULTS**

Lab ID: L2009663-01  
 Client ID: TW-2B-20  
 Sample Location: BARNSTABLE

Date Collected: 03/03/20 16:00  
 Date Received: 03/04/20  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Dw  
 Analytical Method: 133,537.1  
 Analytical Date: 03/11/20 10:13  
 Analyst: RS

Extraction Method: EPA 537  
 Extraction Date: 03/05/20 12:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab</b>						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.77	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.77	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	3.53	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.77	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.77	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.77	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.77	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.77	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.77	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.77	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.77	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.77	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.77	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	1.86		ng/l	1.77	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.77	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.77	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.77	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.77	--	1
PFOA/PFOS, Total	ND		ng/l	1.77	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	96		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	88		70-130

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

**SAMPLE RESULTS**

Lab ID: L2009663-02 R  
 Client ID: FIELD BLANK  
 Sample Location: BARNSTABLE

Date Collected: 03/03/20 16:00  
 Date Received: 03/04/20  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Dw  
 Analytical Method: 133,537.1  
 Analytical Date: 03/11/20 19:05  
 Analyst: RS

Extraction Method: EPA 537  
 Extraction Date: 03/05/20 12:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab</b>						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.97	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.97	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	3.94	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.97	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.97	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.97	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.97	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.97	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.97	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.97	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.97	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.97	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.97	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.97	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.97	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.97	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.97	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.97	--	1
PFOA/PFOS, Total	ND		ng/l	1.97	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	105		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	94		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	107		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	88		70-130

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 133,537.1  
Analytical Date: 03/11/20 05:24  
Analyst: RS

Extraction Method: EPA 537  
Extraction Date: 03/05/20 12:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01-02 Batch: WG1347551-1					
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	4.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--
11-Chloroeicosfluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--
PFOA/PFOS, Total	ND		ng/l	2.00	--

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 133,537.1  
Analytical Date: 03/11/20 05:24  
Analyst: RS

Extraction Method: EPA 537  
Extraction Date: 03/05/20 12:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01-02 Batch: WG1347551-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	104		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	98		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	106		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		70-130

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 120,522  
Analytical Date: 03/06/20 08:12  
Analyst: PS

Extraction Method: EPA 522  
Extraction Date: 03/06/20 07:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01 Batch: WG1348081-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	82		70-130

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 Batch: WG1347551-2 WG1347551-3								
Perfluorobutanesulfonic Acid (PFBS)	101		96		70-130	5		30
Perfluorohexanoic Acid (PFHxA)	104		97		70-130	7		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	145	Q	100		70-130	37	Q	30
Perfluoroheptanoic Acid (PFHpA)	104		98		70-130	6		30
Perfluorohexanesulfonic Acid (PFHxS)	102		98		70-130	4		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	106		99		70-130	7		30
Perfluorooctanoic Acid (PFOA)	106		100		70-130	6		30
Perfluorononanoic Acid (PFNA)	105		95		70-130	10		30
Perfluorooctanesulfonic Acid (PFOS)	100		97		70-130	3		30
Perfluorodecanoic Acid (PFDA)	106		98		70-130	8		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	93		89		70-130	4		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	92		87		70-130	6		30
Perfluoroundecanoic Acid (PFUnA)	107		102		70-130	5		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	87		79		70-130	10		30
Perfluorododecanoic Acid (PFDoA)	112		104		70-130	7		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	94		92		70-130	2		30
Perfluorotridecanoic Acid (PFTTrDA)	117		111		70-130	5		30
Perfluorotetradecanoic Acid (PFTA)	116		108		70-130	7		30

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 Batch: WG1347551-2 WG1347551-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	106		103		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	109		98		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	105		99		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85		83		70-130



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01 Batch: WG1348081-2 WG1348081-3								
1,4-Dioxane	77		82		70-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	83		77		70-130

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

<b>Parameter</b>	<b>Native Sample</b>	<b>MS Added</b>	<b>MS Found</b>	<b>MS %Recovery</b>	<b>Qual</b>	<b>MSD Found</b>	<b>MSD %Recovery</b>	<b>Qual</b>	<b>Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1348081-5 QC Sample: L2009663-01 Client ID: TW-2B-20												
1,4-Dioxane	ND	0.144	ND	70		-	-		70-130	-		30

<b>Surrogate</b>	<b>MS % Recovery</b>	<b>Qualifier</b>	<b>MSD % Recovery</b>	<b>Qualifier</b>	<b>Acceptance Criteria</b>
1,4-Dioxane-d8	82				70-130

## METALS

**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2009663**Project Number:** 2170766**Report Date:** 03/31/20**SAMPLE RESULTS**

Lab ID: L2009663-01  
 Client ID: TW-2B-20  
 Sample Location: BARNSTABLE

Date Collected: 03/03/20 16:00  
 Date Received: 03/04/20  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	ND		mg/l	0.100	--	1	03/06/20 13:45	03/10/20 21:12	EPA 3005A	19,200.7	LC
Antimony, Total	ND		mg/l	0.0040	--	1	03/06/20 13:45	03/06/20 23:18	EPA 3005A	3,200.8	MG
Arsenic, Total	ND		mg/l	0.0010	--	1	03/06/20 13:45	03/06/20 23:18	EPA 3005A	3,200.8	MG
Barium, Total	0.0011		mg/l	0.0010	--	1	03/06/20 13:45	03/06/20 23:18	EPA 3005A	3,200.8	MG
Beryllium, Total	ND		mg/l	0.0010	--	1	03/06/20 13:45	03/06/20 23:18	EPA 3005A	3,200.8	MG
Cadmium, Total	ND		mg/l	0.0002	--	1	03/06/20 13:45	03/06/20 23:18	EPA 3005A	3,200.8	MG
Calcium, Total	2.33		mg/l	0.100	--	1	03/06/20 13:45	03/10/20 21:12	EPA 3005A	19,200.7	LC
Chromium, Total	ND		mg/l	0.0010	--	1	03/06/20 13:45	03/06/20 23:18	EPA 3005A	3,200.8	MG
Copper, Total	ND		mg/l	0.010	--	1	03/06/20 13:45	03/10/20 21:12	EPA 3005A	19,200.7	LC
Iron, Total	0.078		mg/l	0.050	--	1	03/06/20 13:45	03/10/20 21:12	EPA 3005A	19,200.7	LC
Lead, Total	ND		mg/l	0.0010	--	1	03/06/20 13:45	03/06/20 23:18	EPA 3005A	3,200.8	MG
Magnesium, Total	1.45		mg/l	0.100	--	1	03/06/20 13:45	03/10/20 21:12	EPA 3005A	19,200.7	LC
Manganese, Total	ND		mg/l	0.010	--	1	03/06/20 13:45	03/10/20 21:12	EPA 3005A	19,200.7	LC
Mercury, Total	ND		mg/l	0.0002	--	1	03/06/20 14:00	03/07/20 12:35	EPA 245.1	3,245.1	AL
Nickel, Total	ND		mg/l	0.0020	--	1	03/06/20 13:45	03/06/20 23:18	EPA 3005A	3,200.8	MG
Potassium, Total	ND		mg/l	2.50	--	1	03/06/20 13:45	03/10/20 21:12	EPA 3005A	19,200.7	LC
Selenium, Total	ND		mg/l	0.0050	--	1	03/06/20 13:45	03/06/20 23:18	EPA 3005A	3,200.8	MG
Silver, Total	ND		mg/l	0.007	--	1	03/06/20 13:45	03/10/20 21:12	EPA 3005A	19,200.7	LC
Sodium, Total	8.98		mg/l	2.00	--	1	03/06/20 13:45	03/10/20 21:12	EPA 3005A	19,200.7	LC
Thallium, Total	ND		mg/l	0.0010	--	1	03/06/20 13:45	03/06/20 23:18	EPA 3005A	3,200.8	MG
Zinc, Total	ND		mg/l	0.050	--	1	03/06/20 13:45	03/10/20 21:12	EPA 3005A	19,200.7	LC
<b>Total Hardness by SM 2340B - Mansfield Lab</b>											
Hardness	11.8		mg/l	0.660	NA	1	03/06/20 13:45	03/10/20 21:12	EPA 3005A	19,200.7	LC



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1347993-1</b>									
Aluminum, Total	ND	mg/l	0.100	--	1	03/06/20 13:45	03/09/20 11:02	19,200.7	LC
Calcium, Total	ND	mg/l	0.100	--	1	03/06/20 13:45	03/09/20 11:02	19,200.7	LC
Copper, Total	ND	mg/l	0.010	--	1	03/06/20 13:45	03/09/20 11:02	19,200.7	LC
Iron, Total	ND	mg/l	0.050	--	1	03/06/20 13:45	03/09/20 11:02	19,200.7	LC
Magnesium, Total	ND	mg/l	0.100	--	1	03/06/20 13:45	03/09/20 11:02	19,200.7	LC
Manganese, Total	ND	mg/l	0.010	--	1	03/06/20 13:45	03/09/20 11:02	19,200.7	LC
Potassium, Total	ND	mg/l	2.50	--	1	03/06/20 13:45	03/09/20 11:02	19,200.7	LC
Silver, Total	ND	mg/l	0.007	--	1	03/06/20 13:45	03/09/20 11:02	19,200.7	LC
Sodium, Total	ND	mg/l	2.00	--	1	03/06/20 13:45	03/09/20 11:02	19,200.7	LC
Zinc, Total	ND	mg/l	0.050	--	1	03/06/20 13:45	03/09/20 11:02	19,200.7	LC

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1347993-1</b>									
Hardness	ND	mg/l	0.660	NA	1	03/06/20 13:45	03/09/20 11:02	19,200.7	LC

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1347998-1</b>									
Antimony, Total	ND	mg/l	0.0040	--	1	03/06/20 13:45	03/06/20 23:01	3,200.8	MG
Arsenic, Total	ND	mg/l	0.0010	--	1	03/06/20 13:45	03/06/20 23:01	3,200.8	MG
Barium, Total	ND	mg/l	0.0010	--	1	03/06/20 13:45	03/06/20 23:01	3,200.8	MG
Beryllium, Total	ND	mg/l	0.0010	--	1	03/06/20 13:45	03/06/20 23:01	3,200.8	MG
Cadmium, Total	ND	mg/l	0.0002	--	1	03/06/20 13:45	03/06/20 23:01	3,200.8	MG
Chromium, Total	ND	mg/l	0.0010	--	1	03/06/20 13:45	03/06/20 23:01	3,200.8	MG



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

### Method Blank Analysis Batch Quality Control

Lead, Total	ND	mg/l	0.0010	--	1	03/06/20 13:45	03/06/20 23:01	3,200.8	MG
Nickel, Total	ND	mg/l	0.0020	--	1	03/06/20 13:45	03/06/20 23:01	3,200.8	MG
Selenium, Total	ND	mg/l	0.0050	--	1	03/06/20 13:45	03/06/20 23:01	3,200.8	MG
Thallium, Total	ND	mg/l	0.0010	--	1	03/06/20 13:45	03/06/20 23:01	3,200.8	MG

#### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1347999-1									
Mercury, Total	ND	mg/l	0.0002	--	1	03/06/20 14:00	03/07/20 12:27	3,245.1	AL

#### Prep Information

Digestion Method: EPA 245.1

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1347993-2								
Aluminum, Total	98		-		85-115	-		
Calcium, Total	100		-		85-115	-		
Copper, Total	99		-		85-115	-		
Iron, Total	104		-		85-115	-		
Magnesium, Total	104		-		85-115	-		
Manganese, Total	94		-		85-115	-		
Potassium, Total	105		-		85-115	-		
Silver, Total	104		-		85-115	-		
Sodium, Total	108		-		85-115	-		
Zinc, Total	110		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1347993-2								
Hardness	102		-		85-115	-		

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1347998-2					
Antimony, Total	85	-	85-115	-	
Arsenic, Total	105	-	85-115	-	
Barium, Total	101	-	85-115	-	
Beryllium, Total	100	-	85-115	-	
Cadmium, Total	105	-	85-115	-	
Chromium, Total	100	-	85-115	-	
Lead, Total	105	-	85-115	-	
Nickel, Total	104	-	85-115	-	
Selenium, Total	114	-	85-115	-	
Thallium, Total	105	-	85-115	-	
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1347999-2					
Mercury, Total	94	-	85-115	-	



**Matrix Spike Analysis**  
Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1347993-3    QC Sample: L2009568-01    Client ID: MS Sample												
Aluminum, Total	ND	2	2.01	100	-	-	-	-	75-125	-	-	20
Calcium, Total	1.83	10	12.0	102	-	-	-	-	75-125	-	-	20
Copper, Total	ND	0.25	0.251	100	-	-	-	-	75-125	-	-	20
Iron, Total	ND	1	1.08	108	-	-	-	-	75-125	-	-	20
Magnesium, Total	2.01	10	12.7	107	-	-	-	-	75-125	-	-	20
Manganese, Total	ND	0.5	0.476	95	-	-	-	-	75-125	-	-	20
Potassium, Total	ND	10	11.7	117	-	-	-	-	75-125	-	-	20
Silver, Total	ND	0.05	0.054	108	-	-	-	-	75-125	-	-	20
Sodium, Total	14.4	10	24.7	103	-	-	-	-	75-125	-	-	20
Zinc, Total	ND	0.5	0.570	114	-	-	-	-	75-125	-	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1347993-3    QC Sample: L2009568-01    Client ID: MS Sample												
Hardness	12.8	66.2	82.4	105	-	-	-	-	75-125	-	-	20

**Matrix Spike Analysis**  
Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1347993-7    QC Sample: L2009663-01    Client ID: TW-2B-20									
Aluminum, Total	ND	2	2.10	105	-	-	75-125	-	20
Calcium, Total	2.33	10	12.3	100	-	-	75-125	-	20
Copper, Total	ND	0.25	0.246	98	-	-	75-125	-	20
Iron, Total	0.078	1	1.14	106	-	-	75-125	-	20
Magnesium, Total	1.45	10	12.2	108	-	-	75-125	-	20
Manganese, Total	ND	0.5	0.510	102	-	-	75-125	-	20
Potassium, Total	ND	10	11.1	111	-	-	75-125	-	20
Silver, Total	ND	0.05	0.051	102	-	-	75-125	-	20
Sodium, Total	8.98	10	19.4	104	-	-	75-125	-	20
Zinc, Total	ND	0.5	0.550	110	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1347993-7    QC Sample: L2009663-01    Client ID: TW-2B-20									
Hardness	11.8	66.2	80.9	104	-	-	75-125	-	20

**Matrix Spike Analysis**  
Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1347998-3    QC Sample: L2009663-01    Client ID: TW-2B-20									
Antimony, Total	ND	0.5	0.4350	87	-	-	70-130	-	20
Arsenic, Total	ND	0.12	0.1200	100	-	-	70-130	-	20
Barium, Total	0.0011	2	2.020	101	-	-	70-130	-	20
Beryllium, Total	ND	0.05	0.0513	102	-	-	70-130	-	20
Cadmium, Total	ND	0.051	0.0556	109	-	-	70-130	-	20
Chromium, Total	ND	0.2	0.2015	101	-	-	70-130	-	20
Lead, Total	ND	0.51	0.5362	105	-	-	70-130	-	20
Nickel, Total	ND	0.5	0.5138	103	-	-	70-130	-	20
Selenium, Total	ND	0.12	0.1381	115	-	-	70-130	-	20
Thallium, Total	ND	0.12	0.1270	106	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1347999-3    QC Sample: L2009235-33    Client ID: MS Sample									
Mercury, Total	ND	0.005	0.0048	97	-	-	70-130	-	20

## Lab Duplicate Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1347993-4 QC Sample: L2009568-01 Client ID: DUP Sample</b>						
Aluminum, Total	ND	ND	mg/l	NC		20
Iron, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1347993-8 QC Sample: L2009663-01 Client ID: TW-2B-20</b>						
Aluminum, Total	ND	ND	mg/l	NC		20
Calcium, Total	2.33	2.28	mg/l	2		20
Copper, Total	ND	ND	mg/l	NC		20
Iron, Total	0.078	0.070	mg/l	12		20
Magnesium, Total	1.45	1.45	mg/l	0		20
Manganese, Total	ND	ND	mg/l	NC		20
Potassium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Sodium, Total	8.98	8.86	mg/l	1		20
Zinc, Total	ND	ND	mg/l	NC		20
<b>Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1347993-8 QC Sample: L2009663-01 Client ID: TW-2B-20</b>						
Hardness	11.8	11.6	mg/l	2		20

## Lab Duplicate Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1347998-4 QC Sample: L2009663-01 Client ID: TW-2B-20					
Antimony, Total	ND	ND	mg/l	NC	20
Arsenic, Total	ND	ND	mg/l	NC	20
Barium, Total	0.0011	0.0011	mg/l	2	20
Beryllium, Total	ND	ND	mg/l	NC	20
Cadmium, Total	ND	ND	mg/l	NC	20
Chromium, Total	ND	ND	mg/l	NC	20
Lead, Total	ND	ND	mg/l	NC	20
Nickel, Total	ND	ND	mg/l	NC	20
Selenium, Total	ND	ND	mg/l	NC	20
Thallium, Total	ND	ND	mg/l	NC	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1347999-4 QC Sample: L2009235-33 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/l	NC	20

# **INORGANICS & MISCELLANEOUS**

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

**SAMPLE RESULTS**

**Lab ID:** L2009663-01  
**Client ID:** TW-2B-20  
**Sample Location:** BARNSTABLE

**Date Collected:** 03/03/20 16:00  
**Date Received:** 03/04/20  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Perchlorate by IC-MS-MS - Westborough Lab</b>										
Perchlorate	0.088		ug/l	0.050	--	1	-	03/06/20 12:09	71,332.0	AM
<b>General Chemistry - Westborough Lab</b>										
Turbidity	ND		NTU	0.20	--	1	-	03/04/20 23:40	44,180.1	CW
Odor @ 60 C	NO ODOR		TON	1	--	1	-	03/04/20 21:55	121,2150B	CW
Color, Apparent	ND		A.P.C.U.	5.0	--	1	-	03/05/20 00:15	121,2120B	CW
Alkalinity, Total	6.90		mg CaCO3/L	2.00	NA	1	-	03/05/20 09:43	121,2320B	BR
Solids, Total Dissolved	34.		mg/l	10	--	1	-	03/05/20 12:25	121,2540C	DW
Cyanide, Total	ND		mg/l	0.005	--	1	03/05/20 13:10	03/05/20 15:57	121,4500CN-CE	LH
Fluoride	ND		mg/l	0.20	--	1	-	03/06/20 02:35	121,4500F-C	CW
pH (H)	6.0		SU	-	NA	1	-	03/05/20 02:59	121,4500H+-B	CB
Nitrogen, Nitrite	ND		mg/l	0.050	--	1	-	03/05/20 06:31	44,353.2	MR
Nitrogen, Nitrate	ND		mg/l	0.10	--	1	-	03/05/20 06:31	44,353.2	MR
<b>Bacteria in Water - Westborough Lab</b>										
Coliform, Total	Negative		col/100ml	-	NA	1	-	03/04/20 20:19	121,9223B	CM
Escherichia Coli	Negative		col/100ml	-	NA	1	-	03/04/20 20:19	121,9223B	CM
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	14.5		mg/l	0.500	--	1	-	03/05/20 01:46	44,300.0	AT
Sulfate	3.44		mg/l	1.00	--	1	-	03/05/20 01:46	44,300.0	AT



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

**Method Blank Analysis  
Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Bacteria in Water - Westborough Lab for sample(s): 01 Batch: WG1347314-1</b>									
Coliform, Total	Negative	col/100ml	-	NA	1	-	03/04/20 20:19	121,9223B	CM
Escherichia Coli	Negative	col/100ml	-	NA	1	-	03/04/20 20:19	121,9223B	CM
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1347321-1</b>									
Odor	NO ODOR	TON	1	--	1	-	03/04/20 21:55	121,2150B	CW
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1347334-1</b>									
Turbidity	ND	NTU	0.20	--	1	-	03/04/20 23:40	44,180.1	CW
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1347373-1</b>									
Nitrogen, Nitrate	ND	mg/l	0.10	--	1	-	03/05/20 06:22	44,353.2	MR
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1347374-1</b>									
Nitrogen, Nitrite	ND	mg/l	0.050	--	1	-	03/05/20 06:28	44,353.2	MR
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1347400-1</b>									
Solids, Total Dissolved	ND	mg/l	10	--	1	-	03/05/20 12:25	121,2540C	DW
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1347498-1</b>									
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	03/05/20 09:43	121,2320B	BR
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1347617-1</b>									
Cyanide, Total	ND	mg/l	0.005	--	1	03/05/20 13:10	03/05/20 15:33	121,4500CN-CE	LH
<b>Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1347765-1</b>									
Chloride	ND	mg/l	0.500	--	1	-	03/04/20 17:12	44,300.0	AT
Sulfate	ND	mg/l	1.00	--	1	-	03/04/20 17:12	44,300.0	AT
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1347858-1</b>									
Fluoride	ND	mg/l	0.20	--	1	-	03/06/20 02:35	121,4500F-C	CW
<b>Perchlorate by IC-MS-MS - Westborough Lab for sample(s): 01 Batch: WG1348073-1</b>									
Perchlorate	ND	ug/l	0.050	--	1	-	03/06/20 11:17	71,332.0	AM



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1347334-2								
Turbidity	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1347337-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1347373-2								
Nitrogen, Nitrate	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1347374-2								
Nitrogen, Nitrite	98		-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1347400-2								
Solids, Total Dissolved	87		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1347498-2								
Alkalinity, Total	104		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1347617-2								
Cyanide, Total	96		-		90-110	-		

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1347765-2					
Chloride	104	-	90-110	-	
Sulfate	103	-	90-110	-	
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1347858-2					
Fluoride	96	-	78-115	-	
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 Batch: WG1348073-2					
Perchlorate	106	-	80-120	-	20

**Matrix Spike Analysis**  
Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347373-4 QC Sample: L2009663-01 Client ID: TW-2B-20												
Nitrogen, Nitrate	ND	4	3.8	95	-	-	-	-	83-113	-	-	6
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347374-4 QC Sample: L2009663-01 Client ID: TW-2B-20												
Nitrogen, Nitrite	ND	4	3.4	85	-	-	-	-	80-120	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347498-4 QC Sample: L2009800-04 Client ID: MS Sample												
Alkalinity, Total	274	100	367	93	-	-	-	-	86-116	-	-	10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347617-4 QC Sample: L2009385-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.202	101	-	-	-	-	90-110	-	-	30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347765-3 QC Sample: L2009675-02 Client ID: MS Sample												
Chloride	ND	4	4.39	110	-	-	-	-	90-110	-	-	18
Sulfate	ND	8	8.65	108	-	-	-	-	90-110	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347858-4 QC Sample: L2009663-01 Client ID: TW-2B-20												
Fluoride	ND	2	1.9	93	-	-	-	-	69-124	-	-	13
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1348073-3 QC Sample: L2009663-01 Client ID: TW-2B-20												
Perchlorate	0.088	1	1.19	110	-	-	-	-	80-120	-	-	20

## Lab Duplicate Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347321-2 QC Sample: L2009663-01 Client ID: TW-2B-20						
Odor	NO ODOR	NO ODOR	TON	NC		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347334-3 QC Sample: L2009663-01 Client ID: TW-2B-20						
Turbidity	ND	ND	NTU	NC		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347337-2 QC Sample: L2009381-01 Client ID: DUP Sample						
pH	6.6	6.6	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347340-1 QC Sample: L2009513-01 Client ID: DUP Sample						
Color, Apparent	12	12	A.P.C.U.	0		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347373-3 QC Sample: L2009663-01 Client ID: TW-2B-20						
Nitrogen, Nitrate	ND	ND	mg/l	NC		6
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347374-3 QC Sample: L2009663-01 Client ID: TW-2B-20						
Nitrogen, Nitrite	ND	ND	mg/l	NC		20
- Associated sample(s): 01 QC Batch ID: WG1347400-3 QC Sample: L2009512-01 Client ID: DUP Sample						
Solids, Total Dissolved	4600	4400	mg/l	4		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347498-3 QC Sample: L2009800-04 Client ID: DUP Sample						
Alkalinity, Total	274	275	mg CaCO3/L	0		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1347617-3 QC Sample: L2009385-02 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30

## Lab Duplicate Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Anions by Ion Chromatography - Westborough Lab</b> Associated sample(s): 01 QC Batch ID: WG1347765-4 QC Sample: L2009675-02 Client ID: DUP Sample					
Chloride	ND	ND	mg/l	NC	18
Sulfate	ND	ND	mg/l	NC	20
<b>General Chemistry - Westborough Lab</b> Associated sample(s): 01 QC Batch ID: WG1347858-3 QC Sample: L2009663-01 Client ID: TW-2B-20					
Fluoride	ND	ND	mg/l	NC	13
<b>Perchlorate by IC-MS-MS - Westborough Lab</b> Associated sample(s): 01 QC Batch ID: WG1348073-4 QC Sample: L2009663-01 Client ID: TW-2B-20					
Perchlorate	0.088	0.106	ug/l	18	20

**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2009663**Project Number:** 2170766**Report Date:** 03/31/20**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

<b>Cooler</b>	<b>Custody Seal</b>
A	Absent
B	Absent

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2009663-01A	Vial HCl preserved	A	NA		2.5	Y	Absent		524.2(14)
L2009663-01A1	Vial HCl preserved	A	NA		2.5	Y	Absent		524.2(14)
L2009663-01B	Vial unpreserved	B	NA		3.3	Y	Absent		SUB-RADON(4)
L2009663-01B1	Vial unpreserved	B	NA		3.3	Y	Absent		SUB-RADON(4)
L2009663-01C	Vial MCAA/Na2S2O3 preserved	B	NA		3.3	Y	Absent		SUB-531.1(28)
L2009663-01D	Vial Na2S2O3 preserved	B	NA		3.3	Y	Absent		SUB-515.3(14)
L2009663-01D1	Vial Na2S2O3 preserved	B	NA		3.3	Y	Absent		SUB-515.3(14)
L2009663-01D2	Vial Na2S2O3 preserved	B	NA		3.3	Y	Absent		SUB-515.3(14)
L2009663-01E	Vial Na2S2O3 preserved	B	NA		3.3	Y	Absent		SUB-505(14),SUB-504.1(14)
L2009663-01E1	Vial Na2S2O3 preserved	B	NA		3.3	Y	Absent		SUB-505(14),SUB-504.1(14)
L2009663-01E2	Vial Na2S2O3 preserved	B	NA		3.3	Y	Absent		SUB-505(14),SUB-504.1(14)
L2009663-01E3	Vial Na2S2O3 preserved	B	NA		3.3	Y	Absent		SUB-505(14),SUB-504.1(14)
L2009663-01F	Plastic 250ml Trizma preserved	A	NA		2.5	Y	Absent		A2-537.1(14)
L2009663-01F1	Plastic 250ml Trizma preserved	A	NA		2.5	Y	Absent		A2-537.1(14)
L2009663-01G	Bacteria Cup Na2S2O3 preserved	A	NA		2.5	Y	Absent		T-COLI-C(1.25)
L2009663-01G1	Bacteria Cup Na2S2O3 preserved	A	NA		2.5	Y	Absent		T-COLI-C(1.25)
L2009663-01H	Bacteria Cup unpreserved	A	NA		2.5	Y	Absent		PERC-332(28)
L2009663-01H1	Plastic 250ml unpreserved	A	NA		2.5	Y	Absent		PERC-332(28)
L2009663-01I	Plastic 250ml unpreserved/No Headspace	A	NA		2.5	Y	Absent		ALK-T-2320(14)
L2009663-01J	Plastic 250ml NaOH preserved	A	>12	>12	2.5	Y	Absent		TCN-4500(14)

Project Name: BARNSTABLE NEW SOURCE

Lab Number: L2009663

Project Number: 2170766

Report Date: 03/31/20

**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2009663-01K	Plastic 250ml HNO3 preserved	A	<2	<2	2.5	Y	Absent		CD-2008T(180),AG-UI(180),ZN-UI(180),CA-UI(180),NI-2008T(180),BE-2008T(180),K-UI(180),FE-UI(180),HARDU(180),MG-UI(180),AS-2008T(180),SE-2008T(180),HG-U(28),AL-UI(180),BA-2008T(180),NA-UI(180),MN-UI(180),CR-2008T(180),SB-2008T(180),CU-UI(180),PB-2008T(180),TL-2008T(180)
L2009663-01K1	Plastic 950ml HNO3 preserved	A	<2	<2	2.5	Y	Absent		CD-2008T(180),AG-UI(180),ZN-UI(180),CA-UI(180),NI-2008T(180),BE-2008T(180),K-UI(180),FE-UI(180),HARDU(180),MG-UI(180),SE-2008T(180),AS-2008T(180),HG-U(28),AL-UI(180),NA-UI(180),MN-UI(180),BA-2008T(180),CR-2008T(180),SB-2008T(180),CU-UI(180),PB-2008T(180),TL-2008T(180)
L2009663-01L	Amber 250ml unpreserved	A	NA		2.5	Y	Absent		COLOR-A-2120(2)
L2009663-01L1	Amber 250ml unpreserved	A	NA		2.5	Y	Absent		COLOR-A-2120(2)
L2009663-01M	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	2.5	Y	Absent		A2-14DIOXANE-522(28)
L2009663-01M1	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	2.5	N	Absent		A2-14DIOXANE-522(28)
L2009663-01N	Plastic 950ml unpreserved	A	NA		2.5	Y	Absent		F-4500(28),SO4-300(28),CL-300(28),TURB-180(2),NO2-353(2),TDS-2540(7),NO3-353(2),PH-4500(.01)
L2009663-01O	Amber 950ml unpreserved	A	NA		2.5	Y	Absent		ODOR-2150(1)
L2009663-01P	Plastic 500ml HNO3 preserved	B	<2	<2	3.3	Y	Absent		SUB-URANIUM(180)
L2009663-01Q	Amber 1000ml NaSulfite/HCL preserved	B	<2	<2	3.3	Y	Absent		SUB-525.2(14)
L2009663-01Q1	Amber 1000ml NaSulfite/HCL preserved	B	<2	<2	3.3	Y	Absent		SUB-525.2(14)
L2009663-01R	Plastic 950ml HNO3 preserved	B	<2	<2	3.3	Y	Absent		SUB-ALPHA/BETA(180)
L2009663-01R1	Plastic 950ml HNO3 preserved	B	<2	<2	3.3	Y	Absent		SUB-ALPHA/BETA(180)
L2009663-01R2	Plastic 950ml HNO3 preserved	B	<2	<2	3.3	Y	Absent		SUB-ALPHA/BETA(180)
L2009663-01R3	Plastic 950ml HNO3 preserved	B	<2	<2	3.3	Y	Absent		SUB-ALPHA/BETA(180)
L2009663-01R4	Plastic 950ml HNO3 preserved	B	<2	<2	3.3	Y	Absent		SUB-ALPHA/BETA(180)
L2009663-01S	Plastic 950ml HNO3 preserved	B	<2	<2	3.3	Y	Absent		SUB-RA228(180),SUB-RA226(180)
L2009663-01S1	Plastic 950ml HNO3 preserved	B	<2	<2	3.3	Y	Absent		SUB-RA228(180),SUB-RA226(180)
L2009663-01S2	Plastic 950ml HNO3 preserved	B	<2	<2	3.3	Y	Absent		SUB-RA228(180),SUB-RA226(180)
L2009663-01S3	Plastic 950ml HNO3 preserved	B	<2	<2	3.3	Y	Absent		SUB-RA228(180),SUB-RA226(180)

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Serial\_No:**03312016:21  
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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2009663-01S4	Plastic 950ml HNO3 preserved	B	<2	<2	3.3	Y	Absent		SUB-RA228(180),SUB-RA226(180)
L2009663-01S5	Plastic 950ml HNO3 preserved	B	<2	<2	3.3	Y	Absent		SUB-RA228(180),SUB-RA226(180)
L2009663-02A	Plastic 250ml Trizma preserved	A	NA		2.5	Y	Absent		A2-537.1(14)
L2009663-03A	Vial HCl preserved	A	NA		2.5	Y	Absent		524.2(14)
L2009663-03B	Vial HCl preserved	A	NA		2.5	Y	Absent		524.2(14)
L2009663-03C	Vial HCl preserved	A	NA		2.5	Y	Absent		524.2(14)
L2009663-03D	Vial HCl preserved	A	NA		2.5	Y	Absent		524.2(14)

\*Values in parentheses indicate holding time in days





**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

Serial\_No:03312016:21  
**Lab Number:** L2009663  
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### PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
<b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
<b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
<b>FLUOROTELOMERS</b>		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
<b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
<b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
<b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
<b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>		
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1

**Project Name:** BARNSTABLE NEW SOURCE  
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## GLOSSARY

### Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)  Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### Footnotes

Report Format: Data Usability Report



**Project Name:** BARNSTABLE NEW SOURCE  
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**Report Date:** 03/31/20

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Difference:** With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**PAH Total:** With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

**PFAS Total:** With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

**Data Qualifiers**

than 5x the RL. (Metals only.)

- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2009663  
**Report Date:** 03/31/20

## REFERENCES

- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 16 Methods for the Determination of Organic Compounds in Drinking Water - Supplement II. EPA/600/R-92/129, August 1992.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 71 Determination of Perchlorate in Drinking Water by Ion Chromatography with Suppressed Conductivity and Electrospray Ionization Mass Spectrometry. EPA Method 332.0, EPA/600/R-05/049. Revision 1.0, March 2005.
- 120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- 133 Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537.1, EPA/600/R-18/352. Version 1.0, November 2018.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624/624.1:** m/p-xylene, o-xylene

**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### Mansfield Facility

**SM 2540D:** TSS

**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**EPA TO-12** Non-methane organics

**EPA 3C** Fixed gases

**Biological Tissue Matrix:** EPA 3050B

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The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

**EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**

**EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.

**EPA 624.1:** Volatile Halocarbons & Aromatics,

**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.

**EPA 522.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

**EPA 245.1** Hg.

**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.











# CHAIN OF CUSTODY

PAGE 3 OF 3

Date Rec'd in Lab: 3/7/20

ALPHA Job #: L2009663

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Project Information

Project Name: Barnstable N.S.  
Project Location: Barnstable  
Project #: 2170766  
Project Manager: Kevin Mackinnon  
ALPHA Quote #:

Report Information - Data Deliverables  
 ADEX  EMAIL

Billing Information  
 Same as Client info PO #:

## Client Information

Client: Weston & Sampson  
Address: 55 Walkers Brook Dr.  
Reading, MA  
Phone: 978 532-1900  
Email:

## Turn-Around Time

Standard  RUSH (only confirmed if pre-approved)  
Date Due:

## Regulatory Requirements & Project Information Requirements

Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

Additional Project Information:

ANALYSIS		SAMPLE INFO	TOTAL # BOTTLES
VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2	SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH		
METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15	METALS: <input type="checkbox"/> RCRAS <input type="checkbox"/> RCRAS	Filtration	
EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	<input type="checkbox"/> Field	
VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	<input type="checkbox"/> Lab to do	
TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint	TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint	Preservation	
<u>PFAS (EPA 537)</u>		<input type="checkbox"/> Lab to do	
Sample Comments			

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
<u>09663-c1</u>	<u>Tw-2B-20</u>	<u>3/3/20</u>	<u>4:00</u>	<u>DW</u>	<u>WSB</u>
<u>-02</u>	<u>Field Blank</u>	<u>2/3/20</u>	<u>4:00</u>	<u>↓</u>	<u>↓</u>

**Container Type**  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

**Preservative**  
A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

Container Type									
Preservative									

Relinquished By:	Date/Time	Received By:	Date/Time
<u>W. Jesse Schwelbaum</u>	<u>3/4/20</u>	<u>TRAAAL</u>	<u>3-7-20 1345</u>
<u>TRAAAL</u>	<u>3-4-20 1815</u>	<u>[Signature]</u>	<u>3-7-20 1815</u>

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
FORM NO: 01-01 (rev. 12-Mar-2012)



# GRANITE STATE

## ANALYTICAL SERVICES, LLC.

22 Manchester Road, Unit 2, Derry, NH 03038

Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 03/30/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581

**SAMPLE ID#:** 2003-00510-001  
**SAMPLED BY:** Alpha Analytical-Westborough

**SAMPLE ADDRESS:** L2009663  
 TW-2B-20  
 MA

**MORE LOC INFO:**

**DATE AND TIME COLLECTED:** 03/03/2020 4:00PM  
**DATE AND TIME RECEIVED:** 03/05/2020 10:45AM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE 7.7° CELSIUS

**CLIENT JOB #**

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
1,2-Dibromo-3-chloropropane (DBCP)*	<0.02	ug/L	✓		0.02	0.2 ug/L	EPA 504.1	TA-NH	03/12/20 7:43PM
Date Extracted	-					No Limit	EPA 504.1	EM-NH	03/12/20 1:30PM
Ethylene Dibromide (EDB)*	<0.02	ug/L	✓		0.02	0.05 ug/L	EPA 504.1	TA-NH	03/12/20 7:43PM
Aroclor 1016 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	03/13/20 1:20PM
Aroclor 1221 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	03/13/20 1:20PM
Aroclor 1232 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	03/13/20 1:20PM
Aroclor 1242 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	03/13/20 1:20PM
Aroclor 1248 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	03/13/20 1:20PM
Aroclor 1254 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	03/13/20 1:20PM
Aroclor 1260 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	03/13/20 1:20PM
Chlordane*	<0.2	ug/L	✓		0.2	2 ug/L	EPA 505	KV-NH	03/13/20 1:20PM
Date Extracted	-					No Limit	EPA 505	EM-NH	03/12/20 1:30PM
Toxaphene*	<1.0	ug/L	✓		1.0	3 ug/L	EPA 505	KV-NH	03/13/20 1:20PM
2,4,5-TP (Silvex)*	<0.25	ug/L	✓		0.25	50 ug/L	EPA 515.3	KV-NH	03/13/20 10:26PM
2,4-D*	<1	ug/L	✓		1	70 ug/L	EPA 515.3	KV-NH	03/13/20 10:26PM
Dalapon*	<1	ug/L	✓		1	200 ug/L	EPA 515.3	KV-NH	03/13/20 10:26PM
Date Extracted	-					No Limit	EPA 515.3	EM-NH	03/13/20 9:10AM
Dicamba*	<0.18	ug/L			0.18	No Limit	EPA 515.3	KV-NH	03/13/20 10:26PM
Dinoseb*	<0.5	ug/L	✓		0.5	7 ug/L	EPA 515.3	KV-NH	03/13/20 10:26PM
Pentachlorophenol*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 515.3	KV-NH	03/13/20 10:26PM
Picloram*	<1.3	ug/L	✓		1.3	500 ug/L	EPA 515.3	KV-NH	03/13/20 10:26PM
2,4-Dichlorophenylacetic acid	99	%	✓			70-130%	EPA 515.3 - SS	KV-NH	03/13/20 10:26PM
Alachlor*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
Aldrin*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/10/20 11:51PM
Atrazine*	<0.1	ug/L	✓		0.1	3 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
Benzo(a)pyrene*	<0.1	ug/L	✓	S	0.1	0.2 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
Butachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/10/20 11:51PM
Date Extracted	-					No Limit	EPA 525.2	GQ-NH	03/10/20 9:45AM
Di(2-ethylhexyl)adipate*	<0.6	ug/L	✓		0.6	400 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
Di(2-ethylhexyl)phthalate*	<3	ug/L	✓		3	6 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
Dieldrin*	<0.04	ug/L			0.04	No Limit	EPA 525.2	DD-NH	03/10/20 11:51PM



# GRANITE STATE

## ANALYTICAL SERVICES, LLC.

22 Manchester Road, Unit 2, Derry, NH 03038

Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 03/30/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581

**SAMPLE ID#:** 2003-00510-001  
**SAMPLED BY:** Alpha Analytical-Westborough

**SAMPLE ADDRESS:** L2009663  
 TW-2B-20  
 MA

**MORE LOC INFO:**

**DATE AND TIME COLLECTED:** 03/03/2020 4:00PM  
**DATE AND TIME RECEIVED:** 03/05/2020 10:45AM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE 7.7° CELSIUS

**CLIENT JOB #**

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Endrin*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
Heptachlor Epoxide*	<0.06	ug/L	✓		0.06	0.2 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
Heptachlor*	<0.04	ug/L	✓		0.04	0.4 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
Hexachlorobenzene*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
Hexachlorocyclopentadiene*	<0.1	ug/L	✓		0.1	50 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
Lindane*	<0.07	ug/L	✓		0.07	0.2 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
Methoxychlor*	<0.1	ug/L	✓		0.1	40 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
Metolachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/10/20 11:51PM
Metribuzin*	<0.1	ug/L	✓		0.1	70 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
Propachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/10/20 11:51PM
Simazine*	<0.1	ug/L	✓		0.1	4 ug/L	EPA 525.2	DD-NH	03/10/20 11:51PM
1,3-Dimethyl-2-nitrobenzene	102	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/10/20 11:51PM
Perylene-d12	80	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/10/20 11:51PM
Pyrene-d10	86	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/10/20 11:51PM
Triphenylphosphate	114	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/10/20 11:51PM
3-Hydroxycarbofuran*	<1	ug/L			1	No Limit	EPA 531.1	GQ-NH	03/12/20 3:13AM
Aldicarb Sulfone*	<1	ug/L			1	No Limit	EPA 531.1	GQ-NH	03/12/20 3:13AM
Aldicarb Sulfoxide*	<1	ug/L			1	No Limit	EPA 531.1	GQ-NH	03/12/20 3:13AM
Aldicarb*	<1	ug/L			1	No Limit	EPA 531.1	GQ-NH	03/12/20 3:13AM
Carbaryl*	<1	ug/L			1	No Limit	EPA 531.1	GQ-NH	03/12/20 3:13AM
Carbofuran*	<0.9	ug/L	✓		0.9	40 ug/L	EPA 531.1	GQ-NH	03/12/20 3:13AM
Date Extracted	-					No Limit	EPA 531.1	GQ-NH	03/11/20 4:10PM
Methiocarb*	<1	ug/L			1	No Limit	EPA 531.1	GQ-NH	03/12/20 3:13AM
Methomyl*	<1	ug/L			1	No Limit	EPA 531.1	GQ-NH	03/12/20 3:13AM
Oxamyl (Vydate)*	<1	ug/L	✓		1	200 ug/L	EPA 531.1	GQ-NH	03/12/20 3:13AM
Propoxur (Baygon)*	<1	ug/L			1	No Limit	EPA 531.1	GQ-NH	03/12/20 3:13AM



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**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2003-00510-001  
**SAMPLED BY:** Alpha Analytical-Westborough

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

**SAMPLE ADDRESS:** L2009663  
 TW-2B-20  
 MA

**DATE AND TIME COLLECTED:** 03/03/2020 4:00PM  
**DATE AND TIME RECEIVED:** 03/05/2020 10:45AM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE 7.7° CELSIUS  
**CLIENT JOB #**

**MORE LOC INFO:**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
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The results presented in this report relate to the samples listed above in the condition in which they were received.

RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: S = Sample spike recovery outside control limits.

Note: Analyst 2976 = Pace Analytical Services - Pittsburgh.

**\* MA Certified Analysis**

The Commonwealth of Massachusetts has set an Advisory Limit of 10,000 pCi/L for Radon in Water

---

Donald A. D'Anjou, Ph. D.  
 Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.  
 State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |  
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### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 03/30/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2003-00510-002  
**SAMPLED BY:** Alpha Analytical-Westborough  
**SAMPLE ADDRESS:** L2009663  
 TW-2B-20  
 MA

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

**MORE LOC INFO:**

**DATE AND TIME COLLECTED:** 03/03/2020 4:00PM  
**DATE AND TIME RECEIVED:** 03/05/2020 10:45AM  
**ANALYSIS PACKAGE:** Gross Alpha-Non Complia  
**RECEIPT TEMPERATURE:** ON ICE 7.7° CELSIUS  
**CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Uranium*	<1	ug/L			1	30 ug/L	EPA 200.8	CW-NH	03/06/20 1:18PM
Uranium	<0.67	pCi/L			0.67	20 pCi/L	EPA 200.8 Calc.	CW-NH	03/06/20 1:18PM
Analytical Gross Alpha*	<3	pCi/L			3	No Limit	EPA 900	2976	03/20/20 8:12AM
Gross Beta*	<3	pCi/L			3.0		EPA 900.0	2976	03/20/20 8:12AM
Compliance Gross Alpha*	<3	pCi/L			3	15 pCi/L	N/A Calculation	ES-NH	03/20/20 8:12AM

The results presented in this report relate to the samples listed above in the condition in which they were received.

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Data Qualifier (DQ) Flags: S = Sample spike recovery outside control limits.

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**DATE PRINTED:** 03/30/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581

**SAMPLE ID#:** 2003-00510-003  
**SAMPLED BY:** Alpha Analytical-Westborough

**SAMPLE ADDRESS:** L2009663  
 TW-2B-20  
 MA

**MORE LOC INFO:**

**DATE AND TIME COLLECTED:** 03/03/2020 4:00PM  
**DATE AND TIME RECEIVED:** 03/05/2020 10:45AM  
**ANALYSIS PACKAGE:** Rad 226 & 228  
**RECEIPT TEMPERATURE:** ON ICE 7.7° CELSIUS  
**CLIENT JOB #**

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	⚠
Fails State Guideline	✕
Attention	⚠

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Radium 226*	<1	pCi/L			1	No Limit	EPA 903.0	2976	03/27/20 1:00PM
Radium 228*	<1	pCi/L			1	No Limit	EPA 904.0	2976	03/30/20 2:40PM
Combined Radium	<1	pCi/L	✓		1	5 pCi/L	N/A Calculation	2976	03/30/20 2:40PM

The results presented in this report relate to the samples listed above in the condition in which they were received.  
 RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: S = Sample spike recovery outside control limits.

Note: Analyst 2976 = Pace Analytical Services - Pittsburgh.

**\* MA Certified Analysis**

The Commonwealth of Massachusetts has set an Advisory Limit of 10,000 pCi/L for Radon in Water

  
 Donald A. D'Anjou, Ph. D.  
 Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.  
 State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |  
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**DATE PRINTED:** 03/30/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581

**SAMPLE ID#:** 2003-00510-004  
**SAMPLED BY:** Alpha Analytical-Westborough

**SAMPLE ADDRESS:** L2009663  
 TW-2B-20  
 MA

**MORE LOC INFO:**

**DATE AND TIME COLLECTED:** 03/03/2020 4:00PM  
**DATE AND TIME RECEIVED:** 03/05/2020 10:45AM  
**ANALYSIS PACKAGE:** Radon Water-Mass  
**RECEIPT TEMPERATURE:** ON ICE 7.7° CELSIUS  
**CLIENT JOB #**

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Radon	236	pCi/L			100	10000 pCi/L (MA Limit)	SM 7500 Rn B	TT-ME	03/06/20 9:27PM

The results presented in this report relate to the samples listed above in the condition in which they were received.

RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: S = Sample spike recovery outside control limits.

Note: Analyst 2976 = Pace Analytical Services - Pittsburgh.

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## ANALYTICAL REPORT

Lab Number:	L2020789
Client:	Weston & Sampson 55 Walkers Brook Drive Suite 100 Reading, MA 01867
ATTN:	Kevin MacKinnon
Phone:	(978) 532-1900
Project Name:	BARNSTABLE, MA
Project Number:	2170766
Report Date:	06/19/20

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

---

Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)





**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L2020789-01	TW-1C-20	DW	BARNSTABLE, MA	05/19/20 17:30	05/20/20
L2020789-02	FIELD BLANK	DW	BARNSTABLE, MA	05/19/20 17:30	05/20/20
L2020789-03	TRIP BLANK	DW	BARNSTABLE, MA	05/19/20 00:00	05/20/20

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

**HOLD POLICY** - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

---

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

### Case Narrative (continued)

#### Report Submission

June 19, 2020: This final report includes the results of all requested analyses.

June 05, 2020: This is a preliminary report.

The SOC and Radiological analyses were subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

#### Sample Receipt

L2020789-03: A sample identified as "TRIP BLANK" was received, but not listed on the Chain of Custody, and was not analyzed.

#### Perfluorinated Alkyl Acids

WG1374191-2/-3: The LCS/LCSD recoveries, associated with L2020789-01 and -02, are within the 50-150% acceptance criteria for low level Perfluorinated Alkyl Acids.

The WG1374191-3 LCSD recoveries, associated with L2020789-01 and -02, are above the acceptance criteria for n-methyl perfluorooctanesulfonamidoacetic acid (nmefosaa) (170%) and n-ethyl perfluorooctanesulfonamidoacetic acid (nefosaa) (178%); however, the associated samples are non-detect to the RL for these target analytes. The results of the original analysis are reported. The LCS/LCSD RPDs are above the acceptance criteria for n-methyl perfluorooctanesulfonamidoacetic acid (nmefosaa) (52%) and n-ethyl perfluorooctanesulfonamidoacetic acid (nefosaa) (56%).

#### Odor @ 60 C

L2020789-01 was analyzed with the method required holding time exceeded.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Tiffani Morrissey

Title: Technical Director/Representative

Date: 06/19/20

# ORGANICS

# VOLATILES

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

**SAMPLE RESULTS**

Lab ID: L2020789-01  
 Client ID: TW-1C-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 05/19/20 17:30  
 Date Received: 05/20/20  
 Field Prep: None

Sample Depth:

Matrix: Dw  
 Analytical Method: 16,524.2  
 Analytical Date: 05/21/20 18:06  
 Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
Dichlorodifluoromethane	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	0.50	--	1
Bromomethane	ND		ug/l	0.50	--	1
Chloroethane	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	0.50	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
Methylene chloride	ND		ug/l	0.50	--	1
Methyl tert butyl ether	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.50	--	1
1,1-Dichloroethane	ND		ug/l	0.50	--	1
2,2-Dichloropropane	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Chloroform	0.77		ug/l	0.50	--	1
Bromochloromethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	0.50	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE, MA**Lab Number:** L2020789**Project Number:** 2170766**Report Date:** 06/19/20**SAMPLE RESULTS**

Lab ID: L2020789-01  
 Client ID: TW-1C-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 05/19/20 17:30  
 Date Received: 05/20/20  
 Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
1,3-Dichloropropane	ND		ug/l	0.50	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,2-Dibromoethane	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
p/m-Xylene	ND		ug/l	0.50	--	1
o-Xylene	ND		ug/l	0.50	--	1
Styrene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
Bromoform	ND		ug/l	0.50	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
1,2,3-Trichloropropane	ND		ug/l	0.50	--	1
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	0.50	--	1
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--	1
o-Chlorotoluene	ND		ug/l	0.50	--	1
p-Chlorotoluene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	0.50	--	1
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
1,3-Dichlorobenzene	ND		ug/l	0.50	--	1
1,4-Dichlorobenzene	ND		ug/l	0.50	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	0.50	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--	1
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE, MA**Lab Number:** L2020789**Project Number:** 2170766**Report Date:** 06/19/20**SAMPLE RESULTS**

Lab ID: L2020789-01

Date Collected: 05/19/20 17:30

Client ID: TW-1C-20

Date Received: 05/20/20

Sample Location: BARNSTABLE, MA

Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## Volatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	103		80-120
4-Bromofluorobenzene	96		80-120



**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 05/21/20 16:47  
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1373679-4					
Dichlorodifluoromethane	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	0.50	--
Bromomethane	ND		ug/l	0.50	--
Chloroethane	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	0.50	--
1,1-Dichloroethene	ND		ug/l	0.50	--
Methylene chloride	ND		ug/l	0.50	--
Methyl tert butyl ether	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.50	--
1,1-Dichloroethane	ND		ug/l	0.50	--
2,2-Dichloropropane	ND		ug/l	0.50	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Chloroform	ND		ug/l	0.50	--
Bromochloromethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	0.50	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.50	--
1,3-Dichloropropane	ND		ug/l	0.50	--

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 05/21/20 16:47  
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1373679-4					
Tetrachloroethene	ND		ug/l	0.50	--
Dibromochloromethane	ND		ug/l	0.50	--
1,2-Dibromoethane	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Ethylbenzene	ND		ug/l	0.50	--
p/m-Xylene	ND		ug/l	0.50	--
o-Xylene	ND		ug/l	0.50	--
Styrene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
Bromoform	ND		ug/l	0.50	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
1,2,3-Trichloropropane	ND		ug/l	0.50	--
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--
n-Propylbenzene	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	0.50	--
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--
o-Chlorotoluene	ND		ug/l	0.50	--
p-Chlorotoluene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	0.50	--
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
1,3-Dichlorobenzene	ND		ug/l	0.50	--
1,4-Dichlorobenzene	ND		ug/l	0.50	--
n-Butylbenzene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	0.50	--
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 05/21/20 16:47  
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1373679-4					
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	106		80-120
4-Bromofluorobenzene	95		80-120

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE, MA

Lab Number: L2020789

Project Number: 2170766

Report Date: 06/19/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1373679-3								
Dichlorodifluoromethane	95		-		70-130	-		20
Chloromethane	115		-		70-130	-		20
Vinyl chloride	105		-		70-130	-		20
Bromomethane	85		-		70-130	-		20
Chloroethane	110		-		70-130	-		20
Trichlorofluoromethane	108		-		70-130	-		20
1,1-Dichloroethene	108		-		70-130	-		20
Methylene chloride	105		-		70-130	-		20
Methyl tert butyl ether	112		-		70-130	-		20
trans-1,2-Dichloroethene	108		-		70-130	-		20
1,1-Dichloroethane	108		-		70-130	-		20
2,2-Dichloropropane	110		-		70-130	-		20
cis-1,2-Dichloroethene	115		-		70-130	-		20
Chloroform	110		-		70-130	-		20
Bromochloromethane	110		-		70-130	-		20
1,1,1-Trichloroethane	110		-		70-130	-		20
1,1-Dichloropropene	112		-		70-130	-		20
Carbon tetrachloride	110		-		70-130	-		20
1,2-Dichloroethane	112		-		70-130	-		20
Benzene	105		-		70-130	-		20
Trichloroethene	110		-		70-130	-		20
1,2-Dichloropropane	110		-		70-130	-		20
Bromodichloromethane	112		-		70-130	-		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE, MA

Lab Number: L2020789

Project Number: 2170766

Report Date: 06/19/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1373679-3								
Dibromomethane	118		-		70-130	-		20
cis-1,3-Dichloropropene	110		-		70-130	-		20
Toluene	108		-		70-130	-		20
trans-1,3-Dichloropropene	108		-		70-130	-		20
1,1,2-Trichloroethane	118		-		70-130	-		20
1,3-Dichloropropane	110		-		70-130	-		20
Tetrachloroethene	112		-		70-130	-		20
Dibromochloromethane	118		-		70-130	-		20
1,2-Dibromoethane	118		-		70-130	-		20
Chlorobenzene	110		-		70-130	-		20
1,1,1,2-Tetrachloroethane	110		-		70-130	-		20
Ethylbenzene	110		-		70-130	-		20
p/m-Xylene	112		-		70-130	-		20
o-Xylene	108		-		70-130	-		20
Styrene	100		-		70-130	-		20
Isopropylbenzene	112		-		70-130	-		20
Bromoform	118		-		70-130	-		20
1,1,2,2-Tetrachloroethane	120		-		70-130	-		20
1,2,3-Trichloropropane	120		-		70-130	-		20
n-Propylbenzene	110		-		70-130	-		20
Bromobenzene	112		-		70-130	-		20
1,3,5-Trimethylbenzene	112		-		70-130	-		20
o-Chlorotoluene	115		-		70-130	-		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: 2170766

Lab Number: L2020789

Report Date: 06/19/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1373679-3								
p-Chlorotoluene	118		-		70-130	-		20
tert-Butylbenzene	115		-		70-130	-		20
1,2,4-Trimethylbenzene	115		-		70-130	-		20
sec-Butylbenzene	115		-		70-130	-		20
p-Isopropyltoluene	115		-		70-130	-		20
1,3-Dichlorobenzene	115		-		70-130	-		20
1,4-Dichlorobenzene	112		-		70-130	-		20
n-Butylbenzene	112		-		70-130	-		20
1,2-Dichlorobenzene	110		-		70-130	-		20
1,2-Dibromo-3-chloropropane	112		-		70-130	-		20
1,2,4-Trichlorobenzene	108		-		70-130	-		20
Hexachlorobutadiene	110		-		70-130	-		20
Naphthalene	108		-		70-130	-		20
1,2,3-Trichlorobenzene	118		-		70-130	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichlorobenzene-d4	100				80-120
4-Bromofluorobenzene	103				80-120

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE, MA

**Lab Number:** L2020789

**Project Number:** 2170766

**Report Date:** 06/19/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01    QC Batch ID: WG1373679-6    QC Sample: L2020796-02    Client ID: MS Sample												
Dichlorodifluoromethane	ND	4	5.3	133	Q	-	-		70-130	-		20
Chloromethane	ND	4	5.0	125		-	-		70-130	-		20
Vinyl chloride	ND	4	5.1	128		-	-		70-130	-		20
Bromomethane	ND	4	3.8	95		-	-		70-130	-		20
Chloroethane	ND	4	5.0	125		-	-		70-130	-		20
Trichlorofluoromethane	ND	4	4.9	123		-	-		70-130	-		20
1,1-Dichloroethene	ND	4	4.9	123		-	-		70-130	-		20
Methylene chloride	ND	4	4.5	113		-	-		70-130	-		20
Methyl tert butyl ether	ND	4	4.5	113		-	-		70-130	-		20
trans-1,2-Dichloroethene	ND	4	4.6	115		-	-		70-130	-		20
1,1-Dichloroethane	ND	4	4.6	115		-	-		70-130	-		20
2,2-Dichloropropane	ND	4	4.2	105		-	-		70-130	-		20
cis-1,2-Dichloroethene	ND	4	4.9	123		-	-		70-130	-		20
Chloroform	ND	4	4.6	115		-	-		70-130	-		20
Bromochloromethane	ND	4	4.5	113		-	-		70-130	-		20
1,1,1-Trichloroethane	ND	4	4.5	113		-	-		70-130	-		20
1,1-Dichloropropene	ND	4	4.8	120		-	-		70-130	-		20
Carbon tetrachloride	ND	4	4.6	115		-	-		70-130	-		20
1,2-Dichloroethane	ND	4	4.7	118		-	-		70-130	-		20
Benzene	ND	4	4.5	113		-	-		70-130	-		20
Trichloroethene	ND	4	4.8	120		-	-		70-130	-		20
1,2-Dichloropropane	ND	4	4.6	115		-	-		70-130	-		20
Bromodichloromethane	ND	4	4.3	108		-	-		70-130	-		20
Dibromomethane	ND	4	4.9	123		-	-		70-130	-		20

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE, MA

**Lab Number:** L2020789

**Project Number:** 2170766

**Report Date:** 06/19/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01    QC Batch ID: WG1373679-6    QC Sample: L2020796-02    Client ID: MS Sample												
cis-1,3-Dichloropropene	ND	4	4.1	103		-	-		70-130	-		20
Toluene	ND	4	4.5	113		-	-		70-130	-		20
trans-1,3-Dichloropropene	ND	4	3.9	98		-	-		70-130	-		20
1,1,2-Trichloroethane	ND	4	4.6	115		-	-		70-130	-		20
1,3-Dichloropropane	ND	4	4.5	113		-	-		70-130	-		20
Tetrachloroethene	ND	4	4.7	118		-	-		70-130	-		20
Dibromochloromethane	ND	4	4.0	100		-	-		70-130	-		20
1,2-Dibromoethane	ND	4	4.4	110		-	-		70-130	-		20
Chlorobenzene	ND	4	4.6	115		-	-		70-130	-		20
1,1,1,2-Tetrachloroethane	ND	4	4.3	108		-	-		70-130	-		20
Ethylbenzene	ND	4	4.5	113		-	-		70-130	-		20
p/m-Xylene	ND	8	9.4	118		-	-		70-130	-		20
o-Xylene	ND	4	4.5	113		-	-		70-130	-		20
Styrene	ND	4	4.6	115		-	-		70-130	-		20
Isopropylbenzene	ND	4	4.6	115		-	-		70-130	-		20
Bromoform	ND	4	3.4	85		-	-		70-130	-		20
1,1,1,2,2-Tetrachloroethane	ND	4	4.7	118		-	-		70-130	-		20
1,2,3-Trichloropropane	ND	4	4.9	123		-	-		70-130	-		20
n-Propylbenzene	ND	4	4.6	115		-	-		70-130	-		20
Bromobenzene	ND	4	4.7	118		-	-		70-130	-		20
1,3,5-Trimethylbenzene	ND	4	4.6	115		-	-		70-130	-		20
o-Chlorotoluene	ND	4	4.8	120		-	-		70-130	-		20
p-Chlorotoluene	ND	4	4.7	118		-	-		70-130	-		20
tert-Butylbenzene	ND	4	4.6	115		-	-		70-130	-		20



## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE, MA

**Lab Number:** L2020789

**Project Number:** 2170766

**Report Date:** 06/19/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01    QC Batch ID: WG1373679-6    QC Sample: L2020796-02    Client ID: MS Sample												
1,2,4-Trimethylbenzene	ND	4	4.7	118		-	-		70-130	-		20
sec-Butylbenzene	ND	4	4.8	120		-	-		70-130	-		20
p-Isopropyltoluene	ND	4	4.7	118		-	-		70-130	-		20
1,3-Dichlorobenzene	ND	4	4.8	120		-	-		70-130	-		20
1,4-Dichlorobenzene	ND	4	4.6	115		-	-		70-130	-		20
n-Butylbenzene	ND	4	4.5	113		-	-		70-130	-		20
1,2-Dichlorobenzene	ND	4	4.6	115		-	-		70-130	-		20
1,2-Dibromo-3-chloropropane	ND	4	4.4	110		-	-		70-130	-		20
1,2,4-Trichlorobenzene	ND	4	4.4	110		-	-		70-130	-		20
Hexachlorobutadiene	ND	4	4.4	110		-	-		70-130	-		20
Naphthalene	ND	4	4.2	105		-	-		70-130	-		20
1,2,3-Trichlorobenzene	ND	4	4.6	115		-	-		70-130	-		20

<i>Surrogate</i>	<i>MS % Recovery</i>	<i>MS Qualifier</i>	<i>MSD % Recovery</i>	<i>MSD Qualifier</i>	<i>Acceptance Criteria</i>
1,2-Dichlorobenzene-d4	100				80-120
4-Bromofluorobenzene	101				80-120

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: 2170766

Lab Number: L2020789

Report Date: 06/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1373679-5 QC Sample: L2020795-01 Client ID: DUP Sample						
Dichlorodifluoromethane	ND	ND	ug/l	NC		20
Chloromethane	ND	ND	ug/l	NC		20
Vinyl chloride	ND	ND	ug/l	NC		20
Bromomethane	ND	ND	ug/l	NC		20
Chloroethane	ND	ND	ug/l	NC		20
Trichlorofluoromethane	ND	ND	ug/l	NC		20
1,1-Dichloroethene	ND	ND	ug/l	NC		20
Methylene chloride	ND	ND	ug/l	NC		20
Methyl tert butyl ether	ND	ND	ug/l	NC		20
trans-1,2-Dichloroethene	ND	ND	ug/l	NC		20
1,1-Dichloroethane	ND	ND	ug/l	NC		20
2,2-Dichloropropane	ND	ND	ug/l	NC		20
cis-1,2-Dichloroethene	ND	ND	ug/l	NC		20
Chloroform	ND	ND	ug/l	NC		20
Bromochloromethane	ND	ND	ug/l	NC		20
1,1,1-Trichloroethane	ND	ND	ug/l	NC		20
1,1-Dichloropropene	ND	ND	ug/l	NC		20
Carbon tetrachloride	ND	ND	ug/l	NC		20
1,2-Dichloroethane	ND	ND	ug/l	NC		20
Benzene	ND	ND	ug/l	NC		20
Trichloroethene	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: 2170766

Lab Number: L2020789

Report Date: 06/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1373679-5 QC Sample: L2020795-01 Client ID: DUP Sample						
1,2-Dichloropropane	ND	ND	ug/l	NC		20
Bromodichloromethane	ND	ND	ug/l	NC		20
Dibromomethane	ND	ND	ug/l	NC		20
cis-1,3-Dichloropropene	ND	ND	ug/l	NC		20
Toluene	ND	ND	ug/l	NC		20
trans-1,3-Dichloropropene	ND	ND	ug/l	NC		20
1,1,2-Trichloroethane	ND	ND	ug/l	NC		20
1,3-Dichloropropane	ND	ND	ug/l	NC		20
Tetrachloroethene	ND	ND	ug/l	NC		20
Dibromochloromethane	ND	ND	ug/l	NC		20
1,2-Dibromoethane	ND	ND	ug/l	NC		20
Chlorobenzene	ND	ND	ug/l	NC		20
1,1,1,2-Tetrachloroethane	ND	ND	ug/l	NC		20
Ethylbenzene	ND	ND	ug/l	NC		20
p/m-Xylene	ND	ND	ug/l	NC		20
o-Xylene	ND	ND	ug/l	NC		20
Styrene	ND	ND	ug/l	NC		20
Isopropylbenzene	ND	ND	ug/l	NC		20
Bromoform	ND	ND	ug/l	NC		20
1,1,2,2-Tetrachloroethane	ND	ND	ug/l	NC		20
1,2,3-Trichloropropane	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: 2170766

Lab Number: L2020789

Report Date: 06/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1373679-5 QC Sample: L2020795-01 Client ID: DUP Sample						
n-Propylbenzene	ND	ND	ug/l	NC		20
Xylene (Total) <sup>1</sup>	ND	ND	ug/l	NC		20
Bromobenzene	ND	ND	ug/l	NC		20
Trihalomethanes, Total	ND	ND	ug/l	NC		20
1,3,5-Trimethylbenzene	ND	ND	ug/l	NC		20
o-Chlorotoluene	ND	ND	ug/l	NC		20
p-Chlorotoluene	ND	ND	ug/l	NC		20
tert-Butylbenzene	ND	ND	ug/l	NC		20
1,2,4-Trimethylbenzene	ND	ND	ug/l	NC		20
sec-Butylbenzene	ND	ND	ug/l	NC		20
p-Isopropyltoluene	ND	ND	ug/l	NC		20
1,3-Dichlorobenzene	ND	ND	ug/l	NC		20
1,4-Dichlorobenzene	ND	ND	ug/l	NC		20
n-Butylbenzene	ND	ND	ug/l	NC		20
1,2-Dichlorobenzene	ND	ND	ug/l	NC		20
1,2-Dibromo-3-chloropropane	ND	ND	ug/l	NC		20
1,2,4-Trichlorobenzene	ND	ND	ug/l	NC		20
Hexachlorobutadiene	ND	ND	ug/l	NC		20
Naphthalene	ND	ND	ug/l	NC		20
1,2,3-Trichlorobenzene	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: 2170766

Lab Number: L2020789

Report Date: 06/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1373679-5 QC Sample: L2020795-01 Client ID: DUP Sample						

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	104		105		80-120
4-Bromofluorobenzene	97		96		80-120

# SEMIVOLATILES

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

**SAMPLE RESULTS**

Lab ID: L2020789-01  
 Client ID: TW-1C-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 05/19/20 17:30  
 Date Received: 05/20/20  
 Field Prep: None

## Sample Depth:

Matrix: Dw  
 Analytical Method: 120,522  
 Analytical Date: 06/05/20 08:41  
 Analyst: PS

Extraction Method: EPA 522  
 Extraction Date: 06/03/20 06:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.132	--	1
Surrogate			% Recovery	Qualifier	Acceptance Criteria	
1,4-Dioxane-d8			80		70-130	

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

**SAMPLE RESULTS**

Lab ID: L2020789-01  
 Client ID: TW-1C-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 05/19/20 17:30  
 Date Received: 05/20/20  
 Field Prep: None

## Sample Depth:

Matrix: Dw  
 Analytical Method: 133,537.1  
 Analytical Date: 05/27/20 20:18  
 Analyst: SH

Extraction Method: EPA 537  
 Extraction Date: 05/26/20 07:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab</b>						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.78	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.78	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	3.56	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.78	--	1
Perfluorohexanesulfonic Acid (PFHxS)	2.24		ng/l	1.78	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.78	--	1
Perfluorooctanoic Acid (PFOA)	2.21		ng/l	1.78	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	9.11		ng/l	1.78	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.78	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	--	1
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.78	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	--	1
PFOA/PFOS, Total	11.3		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	103		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	88		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	106		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		70-130



**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

**SAMPLE RESULTS**

Lab ID: L2020789-02  
 Client ID: FIELD BLANK  
 Sample Location: BARNSTABLE, MA

Date Collected: 05/19/20 17:30  
 Date Received: 05/20/20  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Dw  
 Analytical Method: 133,537.1  
 Analytical Date: 05/27/20 20:27  
 Analyst: SH

Extraction Method: EPA 537  
 Extraction Date: 05/26/20 07:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab</b>						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.98	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.98	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	3.95	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.98	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.98	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.98	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.98	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.98	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.98	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.98	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.98	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.98	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.98	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.98	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.98	--	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.98	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.98	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.98	--	1
PFOA/PFOS, Total	ND		ng/l	1.98	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	88		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	89		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	84		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	87		70-130

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 133,537.1  
Analytical Date: 05/27/20 19:43  
Analyst: SH

Extraction Method: EPA 537  
Extraction Date: 05/26/20 07:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01-02 Batch: WG1374191-1					
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	4.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--
Perfluorotetradecanoic Acid (PFTTA)	ND		ng/l	2.00	--
PFOA/PFOS, Total	ND		ng/l	2.00	--

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 133,537.1  
Analytical Date: 05/27/20 19:43  
Analyst: SH

Extraction Method: EPA 537  
Extraction Date: 05/26/20 07:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01-02 Batch: WG1374191-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	100		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	94		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	99		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	84		70-130

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 120,522  
Analytical Date: 06/05/20 07:20  
Analyst: PS

Extraction Method: EPA 522  
Extraction Date: 06/03/20 06:30

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01 Batch: WG1377521-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	95		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE, MA

Lab Number: L2020789

Project Number: 2170766

Report Date: 06/19/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 Batch: WG1374191-2 WG1374191-3								
Perfluorobutanesulfonic Acid (PFBS)	90		88		70-130	2		30
Perfluorohexanoic Acid (PFHxA)	120		118		70-130	2		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	104		96		70-130	8		30
Perfluoroheptanoic Acid (PFHpA)	124		126		70-130	2		30
Perfluorohexanesulfonic Acid (PFHxS)	84		94		70-130	11		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	132		128		70-130	3		30
Perfluorooctanoic Acid (PFOA)	130		128		70-130	2		30
Perfluorononanoic Acid (PFNA)	138		146		70-130	6		30
Perfluorooctanesulfonic Acid (PFOS)	90		96		70-130	6		30
Perfluorodecanoic Acid (PFDA)	146		126		70-130	15		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	102		90		70-130	13		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	100		170	Q	70-130	52	Q	30
Perfluoroundecanoic Acid (PFUnA)	122		136		70-130	11		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	100		178	Q	70-130	56	Q	30
Perfluorododecanoic Acid (PFDoA)	118		124		70-130	5		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	92		88		70-130	4		30
Perfluorotridecanoic Acid (PFTTrDA)	132		142		70-130	7		30
Perfluorotetradecanoic Acid (PFTA)	132		128		70-130	3		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: 2170766

Lab Number: L2020789

Report Date: 06/19/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 Batch: WG1374191-2 WG1374191-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	102		92		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	97		85		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	106		90		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	87		103		70-130

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01 Batch: WG1377521-2 WG1377521-3								
1,4-Dioxane	99		93		70-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	93		92		70-130

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** BARNSTABLE, MA

**Project Number:** 2170766

**Lab Number:** L2020789

**Report Date:** 06/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1377521-4 QC Sample: L2020789-01 Client ID: TW-1C-20						
1,4-Dioxane	ND	ND	ug/l	NC		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	80		74		70-130



## METALS

Project Name: BARNSTABLE, MA

Lab Number: L2020789

Project Number: 2170766

Report Date: 06/19/20

## SAMPLE RESULTS

Lab ID: L2020789-01

Date Collected: 05/19/20 17:30

Client ID: TW-1C-20

Date Received: 05/20/20

Sample Location: BARNSTABLE, MA

Field Prep: None

Sample Depth:

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	ND		mg/l	0.100	--	1	05/27/20 11:26	05/29/20 20:32	EPA 3005A	19,200.7	BV
Antimony, Total	ND		mg/l	0.0040	--	1	05/27/20 11:22	05/27/20 17:46	EPA 3005A	3,200.8	CD
Arsenic, Total	ND		mg/l	0.0010	--	1	05/27/20 11:22	05/27/20 17:46	EPA 3005A	3,200.8	CD
Barium, Total	0.0104		mg/l	0.0010	--	1	05/27/20 11:22	05/27/20 17:46	EPA 3005A	3,200.8	CD
Beryllium, Total	ND		mg/l	0.0010	--	1	05/27/20 11:22	05/27/20 17:46	EPA 3005A	3,200.8	CD
Cadmium, Total	ND		mg/l	0.0002	--	1	05/27/20 11:22	05/27/20 17:46	EPA 3005A	3,200.8	CD
Calcium, Total	18.6		mg/l	0.100	--	1	05/27/20 11:26	05/29/20 22:10	EPA 3005A	19,200.7	BV
Chromium, Total	ND		mg/l	0.0010	--	1	05/27/20 11:22	05/27/20 17:46	EPA 3005A	3,200.8	CD
Copper, Total	ND		mg/l	0.010	--	1	05/27/20 11:26	05/29/20 22:10	EPA 3005A	19,200.7	BV
Iron, Total	0.131		mg/l	0.050	--	1	05/27/20 11:26	05/29/20 22:10	EPA 3005A	19,200.7	BV
Lead, Total	ND		mg/l	0.0010	--	1	05/27/20 11:22	05/27/20 17:46	EPA 3005A	3,200.8	CD
Magnesium, Total	8.60		mg/l	0.100	--	1	05/27/20 11:26	05/29/20 22:10	EPA 3005A	19,200.7	BV
Manganese, Total	ND		mg/l	0.010	--	1	05/27/20 11:26	05/29/20 22:10	EPA 3005A	19,200.7	BV
Mercury, Total	ND		mg/l	0.0002	--	1	05/27/20 12:15	05/28/20 11:27	EPA 245.1	3,245.1	GD
Nickel, Total	ND		mg/l	0.0020	--	1	05/27/20 11:22	05/27/20 17:46	EPA 3005A	3,200.8	CD
Potassium, Total	ND		mg/l	2.50	--	1	05/27/20 11:26	05/29/20 22:10	EPA 3005A	19,200.7	BV
Selenium, Total	ND		mg/l	0.0050	--	1	05/27/20 11:22	05/27/20 17:46	EPA 3005A	3,200.8	CD
Silver, Total	ND		mg/l	0.007	--	1	05/27/20 11:26	05/29/20 22:10	EPA 3005A	19,200.7	BV
Sodium, Total	74.6		mg/l	2.00	--	1	05/27/20 11:26	05/29/20 22:10	EPA 3005A	19,200.7	BV
Thallium, Total	ND		mg/l	0.0010	--	1	05/27/20 11:22	05/27/20 17:46	EPA 3005A	3,200.8	CD
Zinc, Total	ND		mg/l	0.050	--	1	05/27/20 11:26	05/29/20 22:10	EPA 3005A	19,200.7	BV
<b>Total Hardness by SM 2340B - Mansfield Lab</b>											
Hardness	81.8		mg/l	0.660	NA	1	05/27/20 11:26	05/29/20 22:10	EPA 3005A	19,200.7	BV



**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1374752-1</b>									
Aluminum, Total	ND	mg/l	0.100	--	1	05/27/20 11:26	05/29/20 20:23	19,200.7	BV
Calcium, Total	ND	mg/l	0.100	--	1	05/27/20 11:26	05/28/20 18:07	19,200.7	BV
Copper, Total	ND	mg/l	0.010	--	1	05/27/20 11:26	05/28/20 18:07	19,200.7	BV
Iron, Total	ND	mg/l	0.050	--	1	05/27/20 11:26	05/28/20 18:07	19,200.7	BV
Magnesium, Total	ND	mg/l	0.100	--	1	05/27/20 11:26	05/28/20 18:07	19,200.7	BV
Manganese, Total	ND	mg/l	0.010	--	1	05/27/20 11:26	05/29/20 21:04	19,200.7	BV
Potassium, Total	ND	mg/l	2.50	--	1	05/27/20 11:26	05/28/20 18:07	19,200.7	BV
Silver, Total	ND	mg/l	0.007	--	1	05/27/20 11:26	05/28/20 18:07	19,200.7	BV
Sodium, Total	ND	mg/l	2.00	--	1	05/27/20 11:26	05/28/20 18:07	19,200.7	BV
Zinc, Total	ND	mg/l	0.050	--	1	05/27/20 11:26	05/28/20 18:07	19,200.7	BV

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1374752-1</b>									
Hardness	ND	mg/l	0.660	NA	1	05/27/20 11:26	05/28/20 18:07	19,200.7	BV

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1374757-1</b>									
Antimony, Total	ND	mg/l	0.0040	--	1	05/27/20 11:22	05/27/20 16:52	3,200.8	CD
Arsenic, Total	ND	mg/l	0.0010	--	1	05/27/20 11:22	05/27/20 16:52	3,200.8	CD
Barium, Total	ND	mg/l	0.0010	--	1	05/27/20 11:22	05/27/20 16:52	3,200.8	CD
Beryllium, Total	ND	mg/l	0.0010	--	1	05/27/20 11:22	05/27/20 16:52	3,200.8	CD
Cadmium, Total	ND	mg/l	0.0002	--	1	05/27/20 11:22	05/27/20 16:52	3,200.8	CD
Chromium, Total	ND	mg/l	0.0010	--	1	05/27/20 11:22	05/27/20 16:52	3,200.8	CD



**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

### Method Blank Analysis Batch Quality Control

Lead, Total	ND	mg/l	0.0010	--	1	05/27/20 11:22	05/27/20 16:52	3,200.8	CD
Nickel, Total	ND	mg/l	0.0020	--	1	05/27/20 11:22	05/27/20 16:52	3,200.8	CD
Selenium, Total	ND	mg/l	0.0050	--	1	05/27/20 11:22	05/27/20 16:52	3,200.8	CD
Thallium, Total	ND	mg/l	0.0010	--	1	05/27/20 11:22	05/27/20 16:52	3,200.8	CD

#### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1374759-1									
Mercury, Total	ND	mg/l	0.0002	--	1	05/27/20 12:15	05/28/20 11:18	3,245.1	GD

#### Prep Information

Digestion Method: EPA 245.1

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1374752-2								
Aluminum, Total	106		-		85-115	-		
Calcium, Total	100		-		85-115	-		
Copper, Total	97		-		85-115	-		
Iron, Total	104		-		85-115	-		
Magnesium, Total	109		-		85-115	-		
Manganese, Total	101		-		85-115	-		
Potassium, Total	108		-		85-115	-		
Silver, Total	102		-		85-115	-		
Sodium, Total	107		-		85-115	-		
Zinc, Total	108		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1374752-2								
Hardness	106		-		85-115	-		

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE, MA

**Project Number:** 2170766

**Lab Number:** L2020789

**Report Date:** 06/19/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1374757-2					
Antimony, Total	99	-	85-115	-	
Arsenic, Total	101	-	85-115	-	
Barium, Total	105	-	85-115	-	
Beryllium, Total	106	-	85-115	-	
Cadmium, Total	104	-	85-115	-	
Chromium, Total	102	-	85-115	-	
Lead, Total	104	-	85-115	-	
Nickel, Total	102	-	85-115	-	
Selenium, Total	102	-	85-115	-	
Thallium, Total	107	-	85-115	-	
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1374759-2					
Mercury, Total	112	-	85-115	-	

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1374752-3    QC Sample: L2021331-01    Client ID: MS Sample												
Aluminum, Total	ND	2	2.15	108	-	-	-	-	75-125	-	-	20
Calcium, Total	22.9	10	32.3	94	-	-	-	-	75-125	-	-	20
Copper, Total	ND	0.25	0.244	98	-	-	-	-	75-125	-	-	20
Iron, Total	0.811	1	1.81	100	-	-	-	-	75-125	-	-	20
Magnesium, Total	3.08	10	13.6	105	-	-	-	-	75-125	-	-	20
Manganese, Total	0.626	0.5	1.05	85	-	-	-	-	75-125	-	-	20
Potassium, Total	3.70	10	14.4	107	-	-	-	-	75-125	-	-	20
Silver, Total	ND	0.05	0.053	105	-	-	-	-	75-125	-	-	20
Sodium, Total	21.3	10	31.6	103	-	-	-	-	75-125	-	-	20
Zinc, Total	ND	0.5	0.552	110	-	-	-	-	75-125	-	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1374752-3    QC Sample: L2021331-01    Client ID: MS Sample												
Hardness	69.9	66.2	137	101	-	-	-	-	75-125	-	-	20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1374752-7    QC Sample: L2021331-02    Client ID: MS Sample									
Aluminum, Total	ND	2	2.15	108	-	-	75-125	-	20
Calcium, Total	23.8	10	34.0	102	-	-	75-125	-	20
Copper, Total	ND	0.25	0.248	99	-	-	75-125	-	20
Iron, Total	ND	1	1.11	111	-	-	75-125	-	20
Magnesium, Total	2.95	10	13.4	104	-	-	75-125	-	20
Manganese, Total	ND	0.5	0.487	97	-	-	75-125	-	20
Potassium, Total	16.2	10	26.8	106	-	-	75-125	-	20
Silver, Total	ND	0.05	0.052	105	-	-	75-125	-	20
Sodium, Total	23.4	10	34.1	107	-	-	75-125	-	20
Zinc, Total	ND	0.5	0.557	111	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1374752-7    QC Sample: L2021331-02    Client ID: MS Sample									
Hardness	71.5	66.2	140	104	-	-	75-125	-	20



### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1374757-3    QC Sample: L2021331-01    Client ID: MS Sample									
Antimony, Total	ND	0.5	0.5406	108	-	-	70-130	-	20
Arsenic, Total	0.0145	0.12	0.1502	113	-	-	70-130	-	20
Barium, Total	0.0160	2	2.150	107	-	-	70-130	-	20
Beryllium, Total	ND	0.05	0.0584	117	-	-	70-130	-	20
Cadmium, Total	ND	0.051	0.0589	115	-	-	70-130	-	20
Chromium, Total	ND	0.2	0.2138	107	-	-	70-130	-	20
Lead, Total	ND	0.51	0.5882	115	-	-	70-130	-	20
Nickel, Total	ND	0.5	0.5448	109	-	-	70-130	-	20
Selenium, Total	ND	0.12	0.1315	110	-	-	70-130	-	20
Thallium, Total	ND	0.12	0.1370	114	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1374757-5    QC Sample: L2021331-02    Client ID: MS Sample									
Antimony, Total	ND	0.5	0.5351	107	-	-	70-130	-	20
Arsenic, Total	ND	0.12	0.1272	106	-	-	70-130	-	20
Barium, Total	0.0129	2	2.146	107	-	-	70-130	-	20
Beryllium, Total	ND	0.05	0.0550	110	-	-	70-130	-	20
Cadmium, Total	ND	0.051	0.0561	110	-	-	70-130	-	20
Chromium, Total	ND	0.2	0.2086	104	-	-	70-130	-	20
Lead, Total	ND	0.51	0.5618	110	-	-	70-130	-	20
Nickel, Total	ND	0.5	0.5135	103	-	-	70-130	-	20
Selenium, Total	ND	0.12	0.1310	109	-	-	70-130	-	20
Thallium, Total	ND	0.12	0.1356	113	-	-	70-130	-	20

**Matrix Spike Analysis**  
Batch Quality Control

**Project Name:** BARNSTABLE, MA

**Lab Number:** L2020789

**Project Number:** 2170766

**Report Date:** 06/19/20

<b>Parameter</b>	<b>Native Sample</b>	<b>MS Added</b>	<b>MS Found</b>	<b>MS %Recovery</b>	<b>MSD Found</b>	<b>MSD %Recovery</b>	<b>Recovery Limits</b>	<b>RPD</b>	<b>RPD Limits</b>
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1374759-3    QC Sample: L2020789-01    Client ID: TW-1C-20									
Mercury, Total	ND	0.005	0.0056	112	-	-	70-130	-	20

## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: BARNSTABLE, MA

Project Number: 2170766

Lab Number: L2020789

Report Date: 06/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1374752-4 QC Sample: L2021331-01 Client ID: DUP Sample</b>						
Iron, Total	0.811	0.801	mg/l	1		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1374752-8 QC Sample: L2021331-02 Client ID: DUP Sample</b>						
Iron, Total	ND	ND	mg/l	NC		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1374759-4 QC Sample: L2020789-01 Client ID: TW-1C-20</b>						
Mercury, Total	ND	ND	mg/l	NC		20

# **INORGANICS & MISCELLANEOUS**

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

**SAMPLE RESULTS**

**Lab ID:** L2020789-01  
**Client ID:** TW-1C-20  
**Sample Location:** BARNSTABLE, MA

**Date Collected:** 05/19/20 17:30  
**Date Received:** 05/20/20  
**Field Prep:** None

**Sample Depth:**  
**Matrix:** Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Perchlorate by IC-MS-MS - Westborough Lab</b>										
Perchlorate	0.082		ug/l	0.050	--	1	-	05/22/20 13:24	71,332.0	AM
<b>General Chemistry - Westborough Lab</b>										
Turbidity	ND		NTU	0.20	--	1	-	05/20/20 22:17	44,180.1	AS
Odor @ 60 C	NO ODOR		TON	1	--	1	-	05/20/20 21:15	121,2150B	AS
Color, Apparent	8.0		A.P.C.U.	5.0	--	1	-	05/20/20 21:19	121,2120B	AS
Alkalinity, Total	26.3		mg CaCO3/L	2.00	NA	1	-	05/21/20 02:48	121,2320B	MA
Solids, Total Dissolved	320		mg/l	10	--	1	-	05/26/20 13:05	121,2540C	EM
Cyanide, Total	ND		mg/l	0.005	--	1	05/21/20 02:15	05/21/20 11:28	121,4500CN-CE	LH
Fluoride	ND		mg/l	0.20	--	1	-	05/22/20 04:00	121,4500F-C	CW
pH (H)	5.8		SU	-	NA	1	-	05/20/20 21:32	121,4500H+-B	AS
Nitrogen, Nitrite	ND		mg/l	0.050	--	1	-	05/21/20 05:40	44,353.2	MR
Nitrogen, Nitrate	1.4		mg/l	0.10	--	1	-	05/21/20 05:40	44,353.2	MR
<b>Bacteria in Water - Westborough Lab</b>										
Coliform, Total	Negative		col/100ml	-	NA	1	-	05/20/20 22:36	121,9223B	CM
Escherichia Coli	Negative		col/100ml	-	NA	1	-	05/20/20 22:36	121,9223B	CM
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	167.		mg/l	5.00	--	10	-	05/27/20 21:46	44,300.0	AT
Sulfate	5.76		mg/l	1.00	--	1	-	05/27/20 21:35	44,300.0	AT



**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1372940-1									
Odor	NO ODOR	TON	1	--	1	-	05/20/20 21:15	121,2150B	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1372948-1									
Turbidity	ND	NTU	0.20	--	1	-	05/20/20 22:17	44,180.1	AS
Bacteria in Water - Westborough Lab for sample(s): 01 Batch: WG1372953-1									
Coliform, Total	Negative	col/100ml	-	NA	1	-	05/20/20 22:36	121,9223B	CM
Escherichia Coli	Negative	col/100ml	-	NA	1	-	05/20/20 22:36	121,9223B	CM
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1372984-1									
Cyanide, Total	ND	mg/l	0.005	--	1	05/21/20 02:15	05/21/20 11:13	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1372993-1									
Nitrogen, Nitrate	ND	mg/l	0.10	--	1	-	05/21/20 05:20	44,353.2	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1372994-1									
Nitrogen, Nitrite	ND	mg/l	0.050	--	1	-	05/21/20 05:22	44,353.2	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1373052-1									
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	05/21/20 02:48	121,2320B	MA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1373507-1									
Fluoride	ND	mg/l	0.20	--	1	-	05/22/20 04:00	121,4500F-C	CW
Perchlorate by IC-MS-MS - Westborough Lab for sample(s): 01 Batch: WG1373615-1									
Perchlorate	ND	ug/l	0.050	--	1	-	05/22/20 11:43	71,332.0	AM
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1374182-1									
Solids, Total Dissolved	ND	mg/l	10	--	1	-	05/26/20 13:05	121,2540C	EM
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1374992-1									
Sulfate	ND	mg/l	1.00	--	1	-	05/27/20 14:07	44,300.0	AT
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1374992-1									
Chloride	ND	mg/l	0.500	--	1	-	05/27/20 14:07	44,300.0	AT

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1372941-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1372948-2								
Turbidity	106		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1372984-2								
Cyanide, Total	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1372993-2								
Nitrogen, Nitrate	102		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1372994-2								
Nitrogen, Nitrite	100		-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1373052-2								
Alkalinity, Total	103		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1373507-2								
Fluoride	98		-		78-115	-		



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE, MA

**Project Number:** 2170766

**Lab Number:** L2020789

**Report Date:** 06/19/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 Batch: WG1373615-2					
Perchlorate	108	-	80-120	-	20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1374182-2					
Solids, Total Dissolved	88	-	80-120	-	
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1374992-2					
Chloride	100	-	90-110	-	
Sulfate	99	-	90-110	-	



### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1372984-4 QC Sample: L2020948-06 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.164	82	Q	-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1372993-4 QC Sample: L2020758-01 Client ID: MS Sample												
Nitrogen, Nitrate	ND	4	4.1	101		-	-		83-113	-		6
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1372994-4 QC Sample: L2020758-01 Client ID: MS Sample												
Nitrogen, Nitrite	ND	4	4.2	105		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1373052-4 QC Sample: L2020936-04 Client ID: MS Sample												
Alkalinity, Total	327	100	422	95		-	-		86-116	-		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1373507-4 QC Sample: L2020789-01 Client ID: TW-1C-20												
Fluoride	ND	2	2.0	102		-	-		69-124	-		13
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1373615-3 QC Sample: L2020789-01 Client ID: TW-1C-20												
Perchlorate	0.082	1	1.20	112		-	-		80-120	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1374992-3 QC Sample: L2021195-02 Client ID: MS Sample												
Chloride	43.4	4	45.8	60	Q	-	-		90-110	-		18
Sulfate	8.71	8	16.4	96		-	-		90-110	-		20

## Lab Duplicate Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE, MA  
**Project Number:** 2170766

**Lab Number:** L2020789  
**Report Date:** 06/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1372940-2 QC Sample: L2020789-01 Client ID: TW-1C-20						
Odor	NO ODOR	NO ODOR	TON	NC		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1372941-2 QC Sample: L2020789-01 Client ID: TW-1C-20						
pH (H)	5.8	5.8	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1372942-1 QC Sample: L2020789-01 Client ID: TW-1C-20						
Color, Apparent	8.0	8.0	A.P.C.U.	0		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1372948-3 QC Sample: L2020789-01 Client ID: TW-1C-20						
Turbidity	ND	ND	NTU	NC		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1372984-3 QC Sample: L2020948-05 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1372993-3 QC Sample: L2020758-01 Client ID: DUP Sample						
Nitrogen, Nitrate	ND	ND	mg/l	NC		6
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1372994-3 QC Sample: L2020758-01 Client ID: DUP Sample						
Nitrogen, Nitrite	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1373052-3 QC Sample: L2020936-04 Client ID: DUP Sample						
Alkalinity, Total	327	323	mg CaCO3/L	1		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1373507-3 QC Sample: L2020789-01 Client ID: TW-1C-20						
Fluoride	ND	ND	mg/l	NC		13

## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: BARNSTABLE, MA

Project Number: 2170766

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Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1373615-4 QC Sample: L2020789-01 Client ID: TW-1C-20					
Perchlorate	0.082	0.083	ug/l	1	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1374182-3 QC Sample: L2021146-11 Client ID: DUP Sample					
Solids, Total Dissolved	3400	3400	mg/l	0	10
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1374992-4 QC Sample: L2021195-02 Client ID: DUP Sample					
Chloride	43.4	43.6	mg/l	0	18
Sulfate	8.71	9.04	mg/l	4	20

**Project Name:** BARNSTABLE, MA**Lab Number:** L2020789**Project Number:** 2170766**Report Date:** 06/19/20**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

<b>Cooler</b>	<b>Custody Seal</b>
A	Absent
B	Absent

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2020789-01A	Vial HCl preserved	A	NA		3.0	Y	Absent		524.2(14)
L2020789-01B	Vial HCl preserved	A	NA		3.0	Y	Absent		524.2(14)
L2020789-01C	Vial unpreserved	A	NA		3.0	Y	Absent		SUB-RADON(4)
L2020789-01D	Vial unpreserved	A	NA		3.0	Y	Absent		SUB-RADON(4)
L2020789-01E	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-504.1(14)
L2020789-01E1	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-504.1(14)
L2020789-01E2	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-504.1(14)
L2020789-01E3	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-504.1(14)
L2020789-01E4	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-504.1(14)
L2020789-01F	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-505(14)
L2020789-01F1	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-505(14)
L2020789-01F2	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-505(14)
L2020789-01F3	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-505(14)
L2020789-01F4	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-505(14)
L2020789-01G	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-515.3(14)
L2020789-01G1	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-515.3(14)
L2020789-01G2	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-515.3(14)
L2020789-01G3	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-515.3(14)
L2020789-01G4	Vial Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-515.3(14)
L2020789-01H	Vial MCAA/Na2S2O3 preserved	A	NA		3.0	Y	Absent		SUB-531.1(28)
L2020789-01I	Amber 1000ml NaSulfite/HCL preserved	A	<2	<2	3.0	Y	Absent		SUB-525.2(14)
L2020789-01I1	Amber 1000ml NaSulfite/HCL preserved	A	<2	<2	3.0	Y	Absent		SUB-525.2(14)

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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2020789-01J	Plastic 250ml Trizma preserved	B	NA		5.4	Y	Absent		A2-537.1(14)
L2020789-01K	Plastic 250ml Trizma preserved	B	NA		5.4	Y	Absent		A2-537.1(14)
L2020789-01L	Plastic 250ml unpreserved/No Headspace	A	NA		3.0	Y	Absent		ALK-T-2320(14)
L2020789-01M	Plastic 250ml unpreserved	A	7	7	3.0	Y	Absent		SO4-300(28),F-4500(28),CL-300(28),TURB-180(2),NO2-353(2),NO3-353(2),TDS-2540(7),PH-4500(.01)
L2020789-01N	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		T-COLI-C(1.25)
L2020789-01O	Bacteria Cup Na2S2O3 preserved	A	NA		3.0	Y	Absent		T-COLI-C(1.25)
L2020789-01P	Bacteria Cup unpreserved	A	NA		3.0	Y	Absent		PERC-332(28)
L2020789-01Q	Plastic 250ml NaOH preserved	A	>12	>12	3.0	Y	Absent		TCN-4500(14)
L2020789-01R	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	3.0	Y	Absent		A2-14DIOXANE-522(28)
L2020789-01S	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	3.0	Y	Absent		A2-14DIOXANE-522(28)
L2020789-01T	Plastic 950ml unpreserved	A	7	7	3.0	Y	Absent		SO4-300(28),F-4500(28),CL-300(28),TURB-180(2),NO2-353(2),NO3-353(2),TDS-2540(7),PH-4500(.01)
L2020789-01U	Amber 1000ml unpreserved	A	7	7	3.0	Y	Absent		COLOR-A-2120(2),ODOR-2150(1)
L2020789-01V	Plastic 500ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		SUB-URANIUM(180)
L2020789-01W	Plastic 950ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		SUB-ALPHA/BETA(180)
L2020789-01W1	Plastic 950ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		SUB-ALPHA/BETA(180)
L2020789-01W2	Plastic 950ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		SUB-ALPHA/BETA(180)
L2020789-01W3	Plastic 950ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		SUB-ALPHA/BETA(180)
L2020789-01X	Plastic 950ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		SUB-RA226(180)
L2020789-01X1	Plastic 950ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		SUB-RA226(180)
L2020789-01X2	Plastic 950ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		SUB-RA226(180)
L2020789-01X3	Plastic 950ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		SUB-RA226(180)
L2020789-01Y	Plastic 950ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		SUB-RA228(180)
L2020789-01Y1	Plastic 950ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		SUB-RA228(180)
L2020789-01Y2	Plastic 950ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		SUB-RA228(180)

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**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2020789-01Z	Plastic 250ml HNO3 preserved	A	<2	<2	3.0	Y	Absent		CD-2008T(180),NI-2008T(180),CA-UI(180),ZN-UI(180),AG-UI(180),K-UI(180),BE-2008T(180),FE-UI(180),MG-UI(180),HARDU(180),AS-2008T(180),HG-U(28),SE-2008T(180),BA-2008T(180),AL-UI(180),NA-UI(180),MN-UI(180),CR-2008T(180),SB-2008T(180),PB-2008T(180),TL-2008T(180),CU-UI(180)
L2020789-02A	Plastic 250ml unpreserved	B	NA		5.4	Y	Absent		A2-537.1(14)
L2020789-03A	Vial HCl preserved	A	NA		3.0	Y	Absent		ARCHIVE()
L2020789-03B	Vial HCl preserved	A	NA		3.0	Y	Absent		ARCHIVE()

\*Values in parentheses indicate holding time in days



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## PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
<b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
<b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
<b>FLUOROTELOMERS</b>		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
<b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
<b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
<b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
<b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>		
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1

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## GLOSSARY

### Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)  Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### Footnotes

Report Format: Data Usability Report





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- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Difference:** With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**PAH Total:** With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

**PFAS Total:** With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

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**Data Qualifiers**

than 5x the RL. (Metals only.)

- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

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## REFERENCES

- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 16 Methods for the Determination of Organic Compounds in Drinking Water - Supplement II. EPA/600/R-92/129, August 1992.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 71 Determination of Perchlorate in Drinking Water by Ion Chromatography with Suppressed Conductivity and Electrospray Ionization Mass Spectrometry. EPA Method 332.0, EPA/600/R-05/049. Revision 1.0, March 2005.
- 120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- 133 Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537.1, EPA/600/R-18/352. Version 1.0, November 2018.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624/624.1:** m/p-xylene, o-xylene, Naphthalene

**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### Mansfield Facility

**SM 2540D:** TSS

**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**EPA TO-12** Non-methane organics

**EPA 3C** Fixed gases

**Biological Tissue Matrix:** EPA 3050B

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The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**

**EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.

**EPA 624.1:** Volatile Halocarbons & Aromatics,

**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.

**EPA 522.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

**EPA 245.1** Hg.

**SM2340B**

---

For a complete listing of analytes and methods, please contact your Alpha Project Manager.









# CHAIN OF CUSTODY

PAGE 3 OF 3

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

Date Rec'd in Lab: 5/20/20

ALPHA Job #: L2020789

**Client Information**

Client: Weston & Sampson  
Address: 55 Walkers Brook Dr  
Reading MA 01867  
Phone: 978-532-1900  
Email: mackinnke@wseinc.com  
parker@wseinc.com  
Additional Project Information:  
please send invoice to:  
invoice@wseinc.com

**Project Information**

Project Name: Barnstable TIA  
Project Location: Barnstable MA  
Project #: 2170766  
Project Manager: Kam Mackinnon  
ALPHA Quote #:

**Report Information - Data Deliverables**

ADEX  EMAIL

**Billing Information**

Same as Client info PO #:

**Regulatory Requirements & Project Information Requirements**

Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

**Turn-Around Time**

Standard  RUSH (only confirmed if pre-approved)  
Date Due:

ANALYSIS	Voc: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2	SAMPLE INFO
	SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH	
METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15	Filtration <input type="checkbox"/> Field <input type="checkbox"/> Lab to do	
METALS: <input type="checkbox"/> RCRA5 <input type="checkbox"/> RCRA8 <input type="checkbox"/> PPT3		
EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	Preservation <input type="checkbox"/> Lab to do	
VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only		
<input type="checkbox"/> PCB <input type="checkbox"/> PEST	TOTAL # BOTTLES	
TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint		
<b>PFAS (EPA 537)</b>		
Sample Comments		

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		

20789-01	TW-1C-20	5/19	17:30	drinking H2O	NP
02	Field Blank	5/19	17:30	drinking H2O	xP

→ Rob Maestro 5/20/20 19:35 Alan Rusin AM 5/20/20 19:35

- Container Type**  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle
- Preservative**  
A= None  
B= HCl  
C= HNO3  
D= H2SO4  
E= NaOH  
F= MeOH  
G= NaHSO4  
H= Na2S2O3  
I= Ascorbic Acid  
J= NH4Cl  
K= Zn Acetate  
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
------------------	-----------	--------------	-----------

<i>[Signature]</i>	5/19 22:35	Sample secured storage	5/19 22:35
<i>[Signature]</i>	5/20/20 7:00	<i>[Signature]</i>	5/20/20 7:00

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
FORM NO: 01-01 (rev. 12-Mar-2012)





# GRANITE STATE

## ANALYTICAL SERVICES, LLC.

22 Manchester Road, Unit 2, Derry, NH 03038

Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 05/29/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2005-02369-001  
**SAMPLED BY:** Alpha Analytical-Westborough  
**SAMPLE ADDRESS:** L2020789  
 TW-1C-20  
 MA

**DATE AND TIME COLLECTED:** 05/19/2020 5:30PM  
**DATE AND TIME RECEIVED:** 05/21/2020 10:50AM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE .7° CELSIUS

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	▽
Fails State Guideline	✗
Attention	! (triangle)

**MORE LOC INFO:**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
1,2-Dibromo-3-chloropropane (DBCP)*	<0.02	ug/L	✓		0.02	0.2 ug/L	EPA 504.1	KV-NH	05/28/20 9:41PM
Date Extracted	-					No Limit	EPA 504.1	TA-NH	05/28/20 1:45PM
Ethylene Dibromide (EDB)*	<0.02	ug/L	✓		0.02	0.05 ug/L	EPA 504.1	KV-NH	05/28/20 9:41PM
Aroclor 1016 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	05/28/20 11:41PM
Aroclor 1221 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	05/28/20 11:41PM
Aroclor 1232 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	05/28/20 11:41PM
Aroclor 1242 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	05/28/20 11:41PM
Aroclor 1248 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	05/28/20 11:41PM
Aroclor 1254 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	05/28/20 11:41PM
Aroclor 1260 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	05/28/20 11:41PM
Chlordane*	<0.2	ug/L	✓		0.2	2 ug/L	EPA 505	KV-NH	05/28/20 11:41PM
Date Extracted	-					No Limit	EPA 505	TA-NH	05/28/20 1:45PM
Toxaphene*	<1.0	ug/L	✓		1.0	3 ug/L	EPA 505	KV-NH	05/28/20 11:41PM
2,4,5-TP (Silvex)*	<0.25	ug/L	✓		0.25	50 ug/L	EPA 515.3	KV-NH	05/28/20 12:19AM
2,4-D*	<1	ug/L	✓		1	70 ug/L	EPA 515.3	KV-NH	05/28/20 12:19AM
Dalapon*	<1	ug/L	✓		1	200 ug/L	EPA 515.3	KV-NH	05/28/20 12:19AM
Date Extracted	-					No Limit	EPA 515.3	TA-NH	05/27/20 8:50AM
Dicamba*	<0.18	ug/L			0.18	No Limit	EPA 515.3	KV-NH	05/28/20 12:19AM
Dinoseb*	<0.5	ug/L	✓		0.5	7 ug/L	EPA 515.3	KV-NH	05/28/20 12:19AM
Pentachlorophenol*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 515.3	KV-NH	05/28/20 12:19AM
Picloram*	<1.3	ug/L	✓		1.3	500 ug/L	EPA 515.3	KV-NH	05/28/20 12:19AM
2,4-Dichlorophenylacetic acid	108	%	✓			70-130%	EPA 515.3 - SS	KV-NH	05/28/20 12:19AM
Alachlor*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
Aldrin*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	05/26/20 11:35PM
Atrazine*	<0.1	ug/L	✓		0.1	3 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
Benzo(a)pyrene*	<0.1	ug/L	✓		0.1	0.2 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
Butachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	05/26/20 11:35PM
Date Extracted	-					No Limit	EPA 525.2	GQ-NH	05/26/20 9:50AM
Di(2-ethylhexyl)adipate*	<0.6	ug/L	✓		0.6	400 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
Di(2-ethylhexyl)phthalate*	<3	ug/L	✓		3	6 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
Dieldrin*	<0.04	ug/L			0.04	No Limit	EPA 525.2	DD-NH	05/26/20 11:35PM





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website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

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**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2005-02369-001  
**SAMPLED BY:** Alpha Analytical-Westborough  
**SAMPLE ADDRESS:** L2020789  
 TW-1C-20  
 MA

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	▽
Fails State Guideline	✕
Attention	! (in triangle)

**DATE AND TIME COLLECTED:** 05/19/2020 5:30PM  
**DATE AND TIME RECEIVED:** 05/21/2020 10:50AM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE .7° CELSIUS  
**CLIENT JOB #**

**MORE LOC INFO:**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Endrin*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
Heptachlor Epoxide*	<0.06	ug/L	✓		0.06	0.2 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
Heptachlor*	<0.04	ug/L	✓		0.04	0.4 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
Hexachlorobenzene*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
Hexachlorocyclopentadiene*	<0.1	ug/L	✓		0.1	50 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
Lindane*	<0.07	ug/L	✓		0.07	0.2 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
Methoxychlor*	<0.1	ug/L	✓		0.1	40 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
Metolachlor*	<0.1	ug/L	✓		0.1	No Limit	EPA 525.2	DD-NH	05/26/20 11:35PM
Metribuzin*	<0.1	ug/L	✓		0.1	70 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
Propachlor*	<0.1	ug/L	✓		0.1	No Limit	EPA 525.2	DD-NH	05/26/20 11:35PM
Simazine*	<0.1	ug/L	✓		0.1	4 ug/L	EPA 525.2	DD-NH	05/26/20 11:35PM
1,3-Dimethyl-2-nitrobenzene	112	%	✓			70-130%	EPA 525.2 - SS	DD-NH	05/26/20 11:35PM
Perylene-d12	81	%	✓			70-130%	EPA 525.2 - SS	DD-NH	05/26/20 11:35PM
Pyrene-d10	101	%	✓			70-130%	EPA 525.2 - SS	DD-NH	05/26/20 11:35PM
Triphenylphosphate	101	%	✓			70-130%	EPA 525.2 - SS	DD-NH	05/26/20 11:35PM
3-Hydroxycarbofuran*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	05/28/20 10:05AM
Aldicarb Sulfone*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	05/28/20 10:05AM
Aldicarb Sulfoxide*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	05/28/20 10:05AM
Aldicarb*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	05/28/20 10:05AM
Carbaryl*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	05/28/20 10:05AM
Carbofuran*	<0.9	ug/L	✓		0.9	40 ug/L	EPA 531.1	KV-NH	05/28/20 10:05AM
Date Extracted	-					No Limit	EPA 531.1	KV-NH	05/27/20 2:00PM
Methiocarb*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	05/28/20 10:05AM
Methomyl*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	05/28/20 10:05AM
Oxamyl (Vydate)*	<1	ug/L	✓		1	200 ug/L	EPA 531.1	KV-NH	05/28/20 10:05AM
Propoxur (Baygon)*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	05/28/20 10:05AM



# GRANITE STATE

## ANALYTICAL SERVICES, LLC.

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Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 05/29/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2005-02369-001  
**SAMPLED BY:** Alpha Analytical-Westborough

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	▽
Fails State Guideline	✕
Attention	⚠

**SAMPLE ADDRESS:** L2020789  
 TW-1C-20  
 MA  
**MORE LOC INFO:**

**DATE AND TIME COLLECTED:** 05/19/2020 5:30PM  
**DATE AND TIME RECEIVED:** 05/21/2020 10:50AM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE .7° CELSIUS  
**CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
------------------	---------	------------	------------	---------	----	-------	--------	---------	--------------------

The results presented in this report relate to the samples listed above in the condition in which they were received.  
 RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.  
 Data Qualifier (DQ) Flags: None

\* MA Certified Analysis

  
 \_\_\_\_\_  
 Donald A. D'Anjou, Ph. D.  
 Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.  
 State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |  
 This certificate shall not be reproduced, except in full, without the written approval of Granite State Analytical Services, LLC



# GRANITE STATE

## ANALYTICAL SERVICES, LLC.

22 Manchester Road, Unit 2, Derry, NH 03038

Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 06/18/2020  
**CLIENT NAME:** Alpha Analytical  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2005-02370-001  
**SAMPLED BY:** Alpha Analytical  
**SAMPLE ADDRESS:** L2020789  
 TW-1C-20  
 MA  
**MORE LOC INFO:**

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	▽
Fails State Guideline	✗
Attention	!

**DATE AND TIME COLLECTED:** 05/19/2020 5:30PM  
**DATE AND TIME RECEIVED:** 05/21/2020 10:50AM  
**ANALYSIS PACKAGE:** Rads Full+Beta-MA  
**RECEIPT TEMPERATURE:** ON ICE .7° CELSIUS  
**CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Uranium*	<1	ug/L	✓		1	30 ug/L	EPA 200.8	JLR-NH	05/26/20 1:08PM
Uranium	<0.67	pCi/L	✓		0.67	20 pCi/L	EPA 200.8 Calc.	JLR-NH	05/26/20 1:08PM
Analytical Gross Alpha*	<3	pCi/L			3	No Limit	EPA 900	M-PA1457	06/08/20 7:59AM
Gross Beta*	3.54±1.22	pCi/L			3.0		EPA 900.0	M-PA1457	06/08/20 7:59AM
Radium 226*	<1	pCi/L				No Limit	EPA 903.1	M-PA1457	06/17/20 2:33PM
Radium 228*	<1	pCi/L			1	No Limit	EPA 904.0	M-PA1457	06/16/20 12:41PM
Combined Radium	<1	pCi/L	✓		1	5 pCi/L	N/A Calculation	M-PA1457	06/18/20 1:00PM
Compliance Gross Alpha*	<3	pCi/L	✓		3	15 pCi/L	N/A Calculation	ES-NH	06/08/20 7:59AM
Radon	376	pCi/L	✓		100	10000 pCi/L (MA Limit)	SM 7500 Rn B	JR-ME	05/22/20 11:43PM

The results presented in this report relate to the samples listed above in the condition in which they were received.

RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

Note: Analyst 2976 = Pace Analytical Services - Pittsburgh.

**\* MA Certified Analysis**

The Commonwealth of Massachusetts has set an Advisory Limit of 10,000 pCi/L for Radon in Water

  
 Donald A. D'Anjou, Ph. D.  
 Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.

State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |

This certificate shall not be reproduced, except in full, without the written approval of Granite State Analytical Services, LLC



## ANALYTICAL REPORT

Lab Number:	L2007537
Client:	Weston & Sampson 55 Walkers Brook Drive Suite 100 Reading, MA 01867
ATTN:	Kevin MacKinnon
Phone:	(978) 532-1900
Project Name:	BARNSTABLE NEW SOURCE
Project Number:	2170766
Report Date:	03/20/20

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

---

Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L2007537-01	TW-2D-20	DW	BARNSTABLE, MA	02/19/20 16:15	02/20/20
L2007537-02	TB-01	DW	BARNSTABLE, MA	02/19/20 16:15	02/20/20
L2007537-03	FIELD BLANK	DW	BARNSTABLE, MA	02/19/20 16:15	02/20/20

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

**HOLD POLICY** - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

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**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

### Case Narrative (continued)

#### Report Revision

March 20, 2020: The Client ID has been corrected on L2007537-01 and a revised copy of the subcontract laboratory report is included.

#### Report Submission

March 18, 2020: This final report includes the results of all requested analyses.

March 13, 2020: This is a preliminary report.

The analyses of 504.1, 505, 515.3, 525.2, 531.1 Alpha/Beta, RA226, RA228, Radon and Uranium were subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

#### Sample Receipt


L2007537-01: The sample was received above the appropriate pH for the 1,4 Dioxane via EPA 522 analysis.

#### Anions by Ion Chromatography

The WG1343455-3 MS recovery, performed on L2007537-01, is outside the acceptance criteria for chloride (76%); however, the associated LCS recovery is within criteria. No further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 03/20/20

# ORGANICS



# VOLATILES

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**SAMPLE RESULTS**

Lab ID: L2007537-01  
 Client ID: TW-2D-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/19/20 16:15  
 Date Received: 02/20/20  
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw  
 Analytical Method: 16,524.2  
 Analytical Date: 02/21/20 16:21  
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
Dichlorodifluoromethane	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	0.50	--	1
Bromomethane	ND		ug/l	0.50	--	1
Chloroethane	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	0.50	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
Methylene chloride	ND		ug/l	0.50	--	1
Methyl tert butyl ether	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.50	--	1
1,1-Dichloroethane	ND		ug/l	0.50	--	1
2,2-Dichloropropane	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Chloroform	1.6		ug/l	0.50	--	1
Bromochloromethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	0.50	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2007537**Project Number:** 2170766**Report Date:** 03/20/20**SAMPLE RESULTS**

Lab ID: L2007537-01  
 Client ID: TW-2D-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/19/20 16:15  
 Date Received: 02/20/20  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
1,3-Dichloropropane	ND		ug/l	0.50	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,2-Dibromoethane	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
p/m-Xylene	ND		ug/l	0.50	--	1
o-Xylene	ND		ug/l	0.50	--	1
Styrene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
Bromoform	ND		ug/l	0.50	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
1,2,3-Trichloropropane	ND		ug/l	0.50	--	1
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	0.50	--	1
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--	1
o-Chlorotoluene	ND		ug/l	0.50	--	1
p-Chlorotoluene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	0.50	--	1
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
1,3-Dichlorobenzene	ND		ug/l	0.50	--	1
1,4-Dichlorobenzene	ND		ug/l	0.50	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	0.50	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--	1
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2007537**Project Number:** 2170766**Report Date:** 03/20/20**SAMPLE RESULTS**

Lab ID: L2007537-01

Date Collected: 02/19/20 16:15

Client ID: TW-2D-20

Date Received: 02/20/20

Sample Location: BARNSTABLE, MA

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## Volatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	107		80-120
4-Bromofluorobenzene	96		80-120

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**SAMPLE RESULTS**

Lab ID: L2007537-02  
 Client ID: TB-01  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/19/20 16:15  
 Date Received: 02/20/20  
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw  
 Analytical Method: 16,524.2  
 Analytical Date: 02/21/20 16:50  
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
Dichlorodifluoromethane	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	0.50	--	1
Bromomethane	ND		ug/l	0.50	--	1
Chloroethane	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	0.50	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
Methylene chloride	ND		ug/l	0.50	--	1
Methyl tert butyl ether	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.50	--	1
1,1-Dichloroethane	ND		ug/l	0.50	--	1
2,2-Dichloropropane	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Chloroform	ND		ug/l	0.50	--	1
Bromochloromethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	0.50	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2007537**Project Number:** 2170766**Report Date:** 03/20/20**SAMPLE RESULTS**

Lab ID: L2007537-02  
 Client ID: TB-01  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/19/20 16:15  
 Date Received: 02/20/20  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
1,3-Dichloropropane	ND		ug/l	0.50	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,2-Dibromoethane	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
p/m-Xylene	ND		ug/l	0.50	--	1
o-Xylene	ND		ug/l	0.50	--	1
Styrene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
Bromoform	ND		ug/l	0.50	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
1,2,3-Trichloropropane	ND		ug/l	0.50	--	1
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	0.50	--	1
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--	1
o-Chlorotoluene	ND		ug/l	0.50	--	1
p-Chlorotoluene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	0.50	--	1
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
1,3-Dichlorobenzene	ND		ug/l	0.50	--	1
1,4-Dichlorobenzene	ND		ug/l	0.50	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	0.50	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--	1
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**SAMPLE RESULTS**

Lab ID: L2007537-02  
 Client ID: TB-01  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/19/20 16:15  
 Date Received: 02/20/20  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Volatile Organics by GC/MS - Westborough Lab						
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	108		80-120
4-Bromofluorobenzene	97		80-120

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 02/21/20 10:34  
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1343853-4					
Dichlorodifluoromethane	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	0.50	--
Bromomethane	ND		ug/l	0.50	--
Chloroethane	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	0.50	--
1,1-Dichloroethene	ND		ug/l	0.50	--
Methylene chloride	ND		ug/l	0.50	--
Methyl tert butyl ether	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.50	--
1,1-Dichloroethane	ND		ug/l	0.50	--
2,2-Dichloropropane	ND		ug/l	0.50	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Chloroform	ND		ug/l	0.50	--
Bromochloromethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	0.50	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.50	--
1,3-Dichloropropane	ND		ug/l	0.50	--



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 02/21/20 10:34  
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1343853-4					
Tetrachloroethene	ND		ug/l	0.50	--
Dibromochloromethane	ND		ug/l	0.50	--
1,2-Dibromoethane	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Ethylbenzene	ND		ug/l	0.50	--
p/m-Xylene	ND		ug/l	0.50	--
o-Xylene	ND		ug/l	0.50	--
Styrene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
Bromoform	ND		ug/l	0.50	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
1,2,3-Trichloropropane	ND		ug/l	0.50	--
n-Propylbenzene	ND		ug/l	0.50	--
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	0.50	--
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--
o-Chlorotoluene	ND		ug/l	0.50	--
p-Chlorotoluene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	0.50	--
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
1,3-Dichlorobenzene	ND		ug/l	0.50	--
1,4-Dichlorobenzene	ND		ug/l	0.50	--
n-Butylbenzene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	0.50	--
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 02/21/20 10:34  
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1343853-4					
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	107		80-120
4-Bromofluorobenzene	95		80-120

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE

**Lab Number:** L2007537

**Project Number:** 2170766

**Report Date:** 03/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1343853-3								
Dichlorodifluoromethane	78		-		70-130	-		20
Chloromethane	105		-		70-130	-		20
Vinyl chloride	90		-		70-130	-		20
Bromomethane	95		-		70-130	-		20
Chloroethane	92		-		70-130	-		20
Trichlorofluoromethane	102		-		70-130	-		20
1,1-Dichloroethene	102		-		70-130	-		20
Methylene chloride	102		-		70-130	-		20
Methyl tert butyl ether	102		-		70-130	-		20
trans-1,2-Dichloroethene	105		-		70-130	-		20
1,1-Dichloroethane	108		-		70-130	-		20
2,2-Dichloropropane	110		-		70-130	-		20
cis-1,2-Dichloroethene	110		-		70-130	-		20
Chloroform	110		-		70-130	-		20
Bromochloromethane	115		-		70-130	-		20
1,1,1-Trichloroethane	105		-		70-130	-		20
1,1-Dichloropropene	100		-		70-130	-		20
Carbon tetrachloride	100		-		70-130	-		20
1,2-Dichloroethane	108		-		70-130	-		20
Benzene	108		-		70-130	-		20
Trichloroethene	102		-		70-130	-		20
1,2-Dichloropropane	108		-		70-130	-		20
Bromodichloromethane	102		-		70-130	-		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE

**Project Number:** 2170766

**Lab Number:** L2007537

**Report Date:** 03/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1343853-3								
Dibromomethane	110		-		70-130	-		20
cis-1,3-Dichloropropene	108		-		70-130	-		20
Toluene	105		-		70-130	-		20
trans-1,3-Dichloropropene	102		-		70-130	-		20
1,1,2-Trichloroethane	110		-		70-130	-		20
1,3-Dichloropropane	108		-		70-130	-		20
Tetrachloroethene	102		-		70-130	-		20
Dibromochloromethane	98		-		70-130	-		20
1,2-Dibromoethane	108		-		70-130	-		20
Chlorobenzene	105		-		70-130	-		20
1,1,1,2-Tetrachloroethane	100		-		70-130	-		20
Ethylbenzene	100		-		70-130	-		20
p/m-Xylene	102		-		70-130	-		20
o-Xylene	102		-		70-130	-		20
Styrene	105		-		70-130	-		20
Isopropylbenzene	95		-		70-130	-		20
Bromoform	98		-		70-130	-		20
1,1,2,2-Tetrachloroethane	102		-		70-130	-		20
1,2,3-Trichloropropane	102		-		70-130	-		20
n-Propylbenzene	98		-		70-130	-		20
Bromobenzene	102		-		70-130	-		20
1,3,5-Trimethylbenzene	95		-		70-130	-		20
o-Chlorotoluene	105		-		70-130	-		20

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1343853-3								
p-Chlorotoluene	100		-		70-130	-		20
tert-Butylbenzene	92		-		70-130	-		20
1,2,4-Trimethylbenzene	92		-		70-130	-		20
sec-Butylbenzene	92		-		70-130	-		20
p-Isopropyltoluene	90		-		70-130	-		20
1,3-Dichlorobenzene	105		-		70-130	-		20
1,4-Dichlorobenzene	100		-		70-130	-		20
n-Butylbenzene	85		-		70-130	-		20
1,2-Dichlorobenzene	102		-		70-130	-		20
1,2-Dibromo-3-chloropropane	90		-		70-130	-		20
1,2,4-Trichlorobenzene	88		-		70-130	-		20
Hexachlorobutadiene	98		-		70-130	-		20
Naphthalene	78		-		70-130	-		20
1,2,3-Trichlorobenzene	90		-		70-130	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichlorobenzene-d4	101				80-120
4-Bromofluorobenzene	101				80-120



## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE

**Lab Number:** L2007537

**Project Number:** 2170766

**Report Date:** 03/20/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01-02    QC Batch ID: WG1343853-6    QC Sample: L2007611-01    Client ID: MS Sample												
Dichlorodifluoromethane	ND	4	2.5	62	Q	-	-		70-130	-		20
Chloromethane	ND	4	3.1	78		-	-		70-130	-		20
Vinyl chloride	ND	4	ND	0	Q	-	-		70-130	-		20
Bromomethane	ND	4	3.4	85		-	-		70-130	-		20
Chloroethane	ND	4	3.4	85		-	-		70-130	-		20
Trichlorofluoromethane	ND	4	3.7	92		-	-		70-130	-		20
1,1-Dichloroethene	ND	4	2.6	65	Q	-	-		70-130	-		20
Methylene chloride	ND	4	3.4	85		-	-		70-130	-		20
Methyl tert butyl ether	ND	4	3.2	80		-	-		70-130	-		20
trans-1,2-Dichloroethene	ND	4	3.5	88		-	-		70-130	-		20
1,1-Dichloroethane	ND	4	3.5	88		-	-		70-130	-		20
2,2-Dichloropropane	ND	4	3.3	82		-	-		70-130	-		20
cis-1,2-Dichloroethene	ND	4	3.6	90		-	-		70-130	-		20
Chloroform	18	4	16	0	Q	-	-		70-130	-		20
Bromochloromethane	ND	4	3.5	88		-	-		70-130	-		20
1,1,1-Trichloroethane	ND	4	3.8	95		-	-		70-130	-		20
1,1-Dichloropropene	ND	4	1.3	32	Q	-	-		70-130	-		20
Carbon tetrachloride	ND	4	3.7	92		-	-		70-130	-		20
1,2-Dichloroethane	ND	4	3.4	85		-	-		70-130	-		20
Benzene	ND	4	3.5	88		-	-		70-130	-		20
Trichloroethene	1.6	4	5.0	85		-	-		70-130	-		20
1,2-Dichloropropane	ND	4	3.4	85		-	-		70-130	-		20
Bromodichloromethane	1.3	4	4.4	78		-	-		70-130	-		20
Dibromomethane	ND	4	3.4	85		-	-		70-130	-		20

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE

**Lab Number:** L2007537

**Project Number:** 2170766

**Report Date:** 03/20/20

<b>Parameter</b>	<b>Native Sample</b>	<b>MS Added</b>	<b>MS Found</b>	<b>MS %Recovery</b>	<b>Qual</b>	<b>MSD Found</b>	<b>MSD %Recovery</b>	<b>Qual</b>	<b>Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01-02    QC Batch ID: WG1343853-6    QC Sample: L2007611-01    Client ID: MS Sample												
cis-1,3-Dichloropropene	ND	4	1.9	48	Q	-	-		70-130	-		20
Toluene	ND	4	1.1	28	Q	-	-		70-130	-		20
trans-1,3-Dichloropropene	ND	4	1.9	48	Q	-	-		70-130	-		20
1,1,2-Trichloroethane	ND	4	3.6	90		-	-		70-130	-		20
1,3-Dichloropropane	ND	4	3.2	80		-	-		70-130	-		20
Tetrachloroethene	ND	4	3.4	85		-	-		70-130	-		20
Dibromochloromethane	0.59	4	3.7	78		-	-		70-130	-		20
1,2-Dibromoethane	ND	4	3.3	82		-	-		70-130	-		20
Chlorobenzene	ND	4	3.4	85		-	-		70-130	-		20
1,1,1,2-Tetrachloroethane	ND	4	3.2	80		-	-		70-130	-		20
Ethylbenzene	ND	4	1.2	30	Q	-	-		70-130	-		20
p/m-Xylene	ND	8	1.6	20	Q	-	-		70-130	-		20
o-Xylene	ND	4	ND	0	Q	-	-		70-130	-		20
Styrene	ND	4	ND	0	Q	-	-		70-130	-		20
Isopropylbenzene	ND	4	1.4	35	Q	-	-		70-130	-		20
Bromoform	ND	4	3.4	85		-	-		70-130	-		20
1,1,2,2-Tetrachloroethane	ND	4	3.4	85		-	-		70-130	-		20
1,2,3-Trichloropropane	ND	4	3.3	82		-	-		70-130	-		20
n-Propylbenzene	ND	4	1.2	30	Q	-	-		70-130	-		20
Bromobenzene	ND	4	3.1	78		-	-		70-130	-		20
1,3,5-Trimethylbenzene	ND	4	ND	0	Q	-	-		70-130	-		20
o-Chlorotoluene	ND	4	3.6	90		-	-		70-130	-		20
p-Chlorotoluene	ND	4	3.3	82		-	-		70-130	-		20
tert-Butylbenzene	ND	4	2.1	52	Q	-	-		70-130	-		20

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE

**Project Number:** 2170766

**Lab Number:** L2007537

**Report Date:** 03/20/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01-02    QC Batch ID: WG1343853-6    QC Sample: L2007611-01    Client ID: MS Sample												
1,2,4-Trimethylbenzene	ND	4	ND	0	Q	-	-		70-130	-		20
sec-Butylbenzene	ND	4	1.4	35	Q	-	-		70-130	-		20
p-Isopropyltoluene	ND	4	ND	0	Q	-	-		70-130	-		20
1,3-Dichlorobenzene	ND	4	3.0	75		-	-		70-130	-		20
1,4-Dichlorobenzene	ND	4	3.1	78		-	-		70-130	-		20
n-Butylbenzene	ND	4	0.94	24	Q	-	-		70-130	-		20
1,2-Dichlorobenzene	ND	4	3.1	78		-	-		70-130	-		20
1,2-Dibromo-3-chloropropane	ND	4	3.2	80		-	-		70-130	-		20
1,2,4-Trichlorobenzene	ND	4	2.7	68	Q	-	-		70-130	-		20
Hexachlorobutadiene	ND	4	3.6	90		-	-		70-130	-		20
Naphthalene	ND	4	ND	0	Q	-	-		70-130	-		20
1,2,3-Trichlorobenzene	ND	4	2.7	68	Q	-	-		70-130	-		20

<i>Surrogate</i>	<i>MS % Recovery</i>	<i>Qualifier</i>	<i>MSD % Recovery</i>	<i>Qualifier</i>	<i>Acceptance Criteria</i>
1,2-Dichlorobenzene-d4	103				80-120
4-Bromofluorobenzene	97				80-120



## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2007537

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1343853-5 QC Sample: L2007612-01 Client ID: DUP Sample						
Dichlorodifluoromethane	ND	ND	ug/l	NC		20
Chloromethane	ND	ND	ug/l	NC		20
Vinyl chloride	ND	ND	ug/l	NC		20
Bromomethane	ND	ND	ug/l	NC		20
Chloroethane	ND	ND	ug/l	NC		20
Trichlorofluoromethane	ND	ND	ug/l	NC		20
1,1-Dichloroethene	ND	ND	ug/l	NC		20
Methylene chloride	ND	ND	ug/l	NC		20
Methyl tert butyl ether	ND	ND	ug/l	NC		20
trans-1,2-Dichloroethene	ND	ND	ug/l	NC		20
1,1-Dichloroethane	ND	ND	ug/l	NC		20
2,2-Dichloropropane	ND	ND	ug/l	NC		20
cis-1,2-Dichloroethene	ND	ND	ug/l	NC		20
Chloroform	ND	ND	ug/l	NC		20
Bromochloromethane	ND	ND	ug/l	NC		20
1,1,1-Trichloroethane	ND	ND	ug/l	NC		20
1,1-Dichloropropene	ND	ND	ug/l	NC		20
Carbon tetrachloride	ND	ND	ug/l	NC		20
1,2-Dichloroethane	ND	ND	ug/l	NC		20
Benzene	ND	ND	ug/l	NC		20
Trichloroethene	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2007537

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1343853-5 QC Sample: L2007612-01 Client ID: DUP Sample						
1,2-Dichloropropane	ND	ND	ug/l	NC		20
Bromodichloromethane	ND	ND	ug/l	NC		20
Dibromomethane	ND	ND	ug/l	NC		20
cis-1,3-Dichloropropene	ND	ND	ug/l	NC		20
Toluene	ND	ND	ug/l	NC		20
trans-1,3-Dichloropropene	ND	ND	ug/l	NC		20
1,1,2-Trichloroethane	ND	ND	ug/l	NC		20
1,3-Dichloropropane	ND	ND	ug/l	NC		20
Tetrachloroethene	ND	ND	ug/l	NC		20
Dibromochloromethane	ND	ND	ug/l	NC		20
1,2-Dibromoethane	ND	ND	ug/l	NC		20
Chlorobenzene	ND	ND	ug/l	NC		20
1,1,1,2-Tetrachloroethane	ND	ND	ug/l	NC		20
Ethylbenzene	ND	ND	ug/l	NC		20
p/m-Xylene	ND	ND	ug/l	NC		20
o-Xylene	ND	ND	ug/l	NC		20
Styrene	ND	ND	ug/l	NC		20
Isopropylbenzene	ND	ND	ug/l	NC		20
Bromoform	ND	ND	ug/l	NC		20
1,1,2,2-Tetrachloroethane	ND	ND	ug/l	NC		20
1,2,3-Trichloropropane	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2007537

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1343853-5 QC Sample: L2007612-01 Client ID: DUP Sample						
Xylene (Total) <sup>1</sup>	ND	ND	ug/l	NC		20
n-Propylbenzene	ND	ND	ug/l	NC		20
Bromobenzene	ND	ND	ug/l	NC		20
1,3,5-Trimethylbenzene	ND	ND	ug/l	NC		20
Trihalomethanes, Total	ND	ND	ug/l	NC		20
o-Chlorotoluene	ND	ND	ug/l	NC		20
p-Chlorotoluene	ND	ND	ug/l	NC		20
tert-Butylbenzene	ND	ND	ug/l	NC		20
1,2,4-Trimethylbenzene	ND	ND	ug/l	NC		20
sec-Butylbenzene	ND	ND	ug/l	NC		20
p-Isopropyltoluene	ND	ND	ug/l	NC		20
1,3-Dichlorobenzene	ND	ND	ug/l	NC		20
1,4-Dichlorobenzene	ND	ND	ug/l	NC		20
n-Butylbenzene	ND	ND	ug/l	NC		20
1,2-Dichlorobenzene	ND	ND	ug/l	NC		20
1,2-Dibromo-3-chloropropane	ND	ND	ug/l	NC		20
1,2,4-Trichlorobenzene	ND	ND	ug/l	NC		20
Hexachlorobutadiene	ND	ND	ug/l	NC		20
Naphthalene	ND	ND	ug/l	NC		20
1,2,3-Trichlorobenzene	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2007537

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1343853-5 QC Sample: L2007612-01 Client ID: DUP Sample						

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	104		106		80-120
4-Bromofluorobenzene	95		96		80-120

# SEMIVOLATILES

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**SAMPLE RESULTS**

Lab ID: L2007537-01  
 Client ID: TW-2D-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/19/20 16:15  
 Date Received: 02/20/20  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Dw  
 Analytical Method: 120,522  
 Analytical Date: 02/25/20 10:54  
 Analyst: PS

Extraction Method: EPA 522  
 Extraction Date: 02/24/20 05:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147	--	1
Surrogate			% Recovery	Qualifier	Acceptance Criteria	
1,4-Dioxane-d8			93		70-130	

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**SAMPLE RESULTS**

Lab ID: L2007537-01  
 Client ID: TW-2D-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/19/20 16:15  
 Date Received: 02/20/20  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Dw  
 Analytical Method: 133,537.1  
 Analytical Date: 02/24/20 11:02  
 Analyst: SH

Extraction Method: EPA 537  
 Extraction Date: 02/21/20 06:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab</b>						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.76	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.76	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	3.52	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.76	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.76	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.76	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.76	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.76	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.76	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.76	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.76	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.76	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.76	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.76	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.76	--	1
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.76	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.76	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.76	--	1
PFOA/PFOS, Total	ND		ng/l	1.76	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	98		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	101		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	98		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85		70-130

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**SAMPLE RESULTS**

Lab ID: L2007537-03  
 Client ID: FIELD BLANK  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/19/20 16:15  
 Date Received: 02/20/20  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Dw  
 Analytical Method: 133,537.1  
 Analytical Date: 02/24/20 11:11  
 Analyst: SH

Extraction Method: EPA 537  
 Extraction Date: 02/21/20 06:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab</b>						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.98	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.98	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	3.97	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.98	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.98	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.98	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.98	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.98	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.98	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.98	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.98	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.98	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.98	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.98	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.98	--	1
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.98	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.98	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.98	--	1
PFOA/PFOS, Total	ND		ng/l	1.98	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	96		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	101		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	91		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		70-130



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 133,537.1  
Analytical Date: 02/24/20 10:19  
Analyst: SH

Extraction Method: EPA 537  
Extraction Date: 02/21/20 06:38

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01,03 Batch: WG1343028-1					
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	4.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--
PFOA/PFOS, Total	ND		ng/l	2.00	--

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 133,537.1  
Analytical Date: 02/24/20 10:19  
Analyst: SH

Extraction Method: EPA 537  
Extraction Date: 02/21/20 06:38

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01,03 Batch: WG1343028-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	85		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	87		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	98		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	81		70-130

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 120,522  
Analytical Date: 02/25/20 09:08  
Analyst: PS

Extraction Method: EPA 522  
Extraction Date: 02/24/20 05:30

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01 Batch: WG1343730-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	88		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Lab Number: L2007537

Project Number: 2170766

Report Date: 03/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01,03 Batch: WG1343028-2 WG1343028-3								
Perfluorobutanesulfonic Acid (PFBS)	86		86		70-130	0		30
Perfluorohexanoic Acid (PFHxA)	82		83		70-130	1		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	88		89		70-130	1		30
Perfluoroheptanoic Acid (PFHpA)	85		86		70-130	1		30
Perfluorohexanesulfonic Acid (PFHxS)	84		85		70-130	1		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	83		88		70-130	6		30
Perfluorooctanoic Acid (PFOA)	87		90		70-130	3		30
Perfluorononanoic Acid (PFNA)	84		88		70-130	5		30
Perfluorooctanesulfonic Acid (PFOS)	79		80		70-130	1		30
Perfluorodecanoic Acid (PFDA)	83		82		70-130	1		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	78		78		70-130	0		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	81		81		70-130	0		30
Perfluoroundecanoic Acid (PFUnA)	85		89		70-130	5		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	72		84		70-130	15		30
Perfluorododecanoic Acid (PFDoA)	86		87		70-130	1		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	70		75		70-130	7		30
Perfluorotridecanoic Acid (PFTTrDA)	87		85		70-130	2		30
Perfluorotetradecanoic Acid (PFTA)	82		86		70-130	5		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Lab Number: L2007537

Project Number: 2170766

Report Date: 03/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01,03 Batch: WG1343028-2 WG1343028-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	95		97		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	97		99		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	96		95		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	77		89		70-130

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01 Batch: WG1343730-2 WG1343730-3								
1,4-Dioxane	95		100		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	87		95		70-130

## METALS

Project Name: BARNSTABLE NEW SOURCE

Lab Number: L2007537

Project Number: 2170766

Report Date: 03/20/20

## SAMPLE RESULTS

Lab ID: L2007537-01

Date Collected: 02/19/20 16:15

Client ID: TW-2D-20

Date Received: 02/20/20

Sample Location: BARNSTABLE, MA

Field Prep: Not Specified

Sample Depth:

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	ND		mg/l	0.100	--	1	02/25/20 21:17	02/26/20 19:26	EPA 3005A	19,200.7	LC
Antimony, Total	ND		mg/l	0.0040	--	1	02/25/20 21:17	02/26/20 09:16	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.0010	--	1	02/25/20 21:17	02/26/20 09:16	EPA 3005A	3,200.8	AM
Barium, Total	ND		mg/l	0.0010	--	1	02/25/20 21:17	02/26/20 09:16	EPA 3005A	3,200.8	AM
Beryllium, Total	ND		mg/l	0.0010	--	1	02/25/20 21:17	02/26/20 09:16	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.0002	--	1	02/25/20 21:17	02/26/20 09:16	EPA 3005A	3,200.8	AM
Calcium, Total	3.83		mg/l	0.100	--	1	02/25/20 21:17	02/26/20 16:43	EPA 3005A	19,200.7	LC
Chromium, Total	ND		mg/l	0.0010	--	1	02/25/20 21:17	02/26/20 09:16	EPA 3005A	3,200.8	AM
Copper, Total	0.021		mg/l	0.010	--	1	02/25/20 21:17	02/26/20 16:43	EPA 3005A	19,200.7	LC
Iron, Total	0.054		mg/l	0.050	--	1	02/25/20 21:17	02/26/20 16:43	EPA 3005A	19,200.7	LC
Lead, Total	0.0078		mg/l	0.0010	--	1	02/25/20 21:17	02/26/20 09:16	EPA 3005A	3,200.8	AM
Magnesium, Total	1.55		mg/l	0.100	--	1	02/25/20 21:17	02/26/20 16:43	EPA 3005A	19,200.7	LC
Manganese, Total	0.041		mg/l	0.010	--	1	02/25/20 21:17	02/26/20 16:43	EPA 3005A	19,200.7	LC
Mercury, Total	ND		mg/l	0.0002	--	1	02/26/20 12:36	02/26/20 15:11	EPA 245.1	3,245.1	AL
Nickel, Total	ND		mg/l	0.0020	--	1	02/25/20 21:17	02/26/20 09:16	EPA 3005A	3,200.8	AM
Potassium, Total	ND		mg/l	2.50	--	1	02/25/20 21:17	02/26/20 16:43	EPA 3005A	19,200.7	LC
Selenium, Total	ND		mg/l	0.0050	--	1	02/25/20 21:17	02/26/20 09:16	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.007	--	1	02/25/20 21:17	02/26/20 16:43	EPA 3005A	19,200.7	LC
Sodium, Total	9.88		mg/l	2.00	--	1	02/25/20 21:17	02/26/20 16:43	EPA 3005A	19,200.7	LC
Thallium, Total	ND		mg/l	0.0010	--	1	02/25/20 21:17	02/26/20 09:16	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.050	--	1	02/25/20 21:17	02/26/20 16:43	EPA 3005A	19,200.7	LC
<b>Total Hardness by SM 2340B - Mansfield Lab</b>											
Hardness	15.9		mg/l	0.660	NA	1	02/25/20 21:17	02/26/20 16:43	EPA 3005A	19,200.7	LC





**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

### Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1344322-1									
Aluminum, Total	ND	mg/l	0.100	--	1	02/25/20 21:17	02/26/20 15:30	19,200.7	LC
Calcium, Total	ND	mg/l	0.100	--	1	02/25/20 21:17	02/26/20 15:30	19,200.7	LC
Copper, Total	ND	mg/l	0.010	--	1	02/25/20 21:17	02/26/20 15:30	19,200.7	LC
Iron, Total	ND	mg/l	0.050	--	1	02/25/20 21:17	02/26/20 15:30	19,200.7	LC
Magnesium, Total	ND	mg/l	0.100	--	1	02/25/20 21:17	02/26/20 15:30	19,200.7	LC
Manganese, Total	ND	mg/l	0.010	--	1	02/25/20 21:17	02/26/20 15:30	19,200.7	LC
Potassium, Total	ND	mg/l	2.50	--	1	02/25/20 21:17	02/26/20 15:30	19,200.7	LC
Silver, Total	ND	mg/l	0.007	--	1	02/25/20 21:17	02/26/20 15:30	19,200.7	LC
Sodium, Total	ND	mg/l	2.00	--	1	02/25/20 21:17	02/26/20 15:30	19,200.7	LC
Zinc, Total	ND	mg/l	0.050	--	1	02/25/20 21:17	02/26/20 15:30	19,200.7	LC

#### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1344322-1									
Hardness	ND	mg/l	0.660	NA	1	02/25/20 21:17	02/26/20 15:30	19,200.7	LC

#### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1344324-1									
Antimony, Total	ND	mg/l	0.0040	--	1	02/25/20 21:17	02/26/20 08:38	3,200.8	AM
Arsenic, Total	ND	mg/l	0.0010	--	1	02/25/20 21:17	02/26/20 08:38	3,200.8	AM
Barium, Total	ND	mg/l	0.0010	--	1	02/25/20 21:17	02/26/20 08:38	3,200.8	AM
Beryllium, Total	ND	mg/l	0.0010	--	1	02/25/20 21:17	02/26/20 08:38	3,200.8	AM
Cadmium, Total	ND	mg/l	0.0002	--	1	02/25/20 21:17	02/26/20 08:38	3,200.8	AM
Chromium, Total	ND	mg/l	0.0010	--	1	02/25/20 21:17	02/26/20 08:38	3,200.8	AM



Project Name: BARNSTABLE NEW SOURCE

Lab Number: L2007537

Project Number: 2170766

Report Date: 03/20/20

### Method Blank Analysis Batch Quality Control

Lead, Total	ND	mg/l	0.0010	--	1	02/25/20 21:17	02/26/20 08:38	3,200.8	AM
Nickel, Total	ND	mg/l	0.0020	--	1	02/25/20 21:17	02/26/20 08:38	3,200.8	AM
Selenium, Total	ND	mg/l	0.0050	--	1	02/25/20 21:17	02/26/20 08:38	3,200.8	AM
Thallium, Total	ND	mg/l	0.0010	--	1	02/25/20 21:17	02/26/20 08:38	3,200.8	AM

#### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1344593-1									
Mercury, Total	ND	mg/l	0.00020	--	1	02/26/20 12:36	02/26/20 14:55	3,245.1	AL

#### Prep Information

Digestion Method: EPA 245.1

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1344322-2								
Aluminum, Total	104		-		85-115	-		
Calcium, Total	99		-		85-115	-		
Copper, Total	94		-		85-115	-		
Iron, Total	106		-		85-115	-		
Magnesium, Total	100		-		85-115	-		
Manganese, Total	96		-		85-115	-		
Potassium, Total	100		-		85-115	-		
Silver, Total	98		-		85-115	-		
Sodium, Total	101		-		85-115	-		
Zinc, Total	105		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1344322-2								
Hardness	99		-		85-115	-		

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE

**Project Number:** 2170766

**Lab Number:** L2007537

**Report Date:** 03/20/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1344324-2					
Antimony, Total	87	-	85-115	-	
Arsenic, Total	107	-	85-115	-	
Barium, Total	107	-	85-115	-	
Beryllium, Total	105	-	85-115	-	
Cadmium, Total	112	-	85-115	-	
Chromium, Total	104	-	85-115	-	
Lead, Total	108	-	85-115	-	
Nickel, Total	110	-	85-115	-	
Selenium, Total	108	-	85-115	-	
Thallium, Total	108	-	85-115	-	
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1344593-2					
Mercury, Total	112	-	85-115	-	

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1344322-3    QC Sample: L2007393-02    Client ID: MS Sample												
Aluminum, Total	ND	2	2.03	102		-	-		75-125	-		20
Calcium, Total	57.4	10	64.9	75		-	-		75-125	-		20
Copper, Total	0.025	0.25	0.259	94		-	-		75-125	-		20
Iron, Total	ND	1	1.06	106		-	-		75-125	-		20
Magnesium, Total	18.9	10	26.8	79		-	-		75-125	-		20
Manganese, Total	0.076	0.5	0.544	94		-	-		75-125	-		20
Potassium, Total	2.81	10	12.6	98		-	-		75-125	-		20
Silver, Total	ND	0.05	0.049	97		-	-		75-125	-		20
Sodium, Total	81.1	10	87.7	66	Q	-	-		75-125	-		20
Zinc, Total	ND	0.5	0.531	106		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1344322-3    QC Sample: L2007393-02    Client ID: MS Sample												
Hardness	221	66.2	272	77		-	-		75-125	-		20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1344322-7    QC Sample: L2007394-01    Client ID: MS Sample									
Aluminum, Total	ND	2	2.04	102	-	-	75-125	-	20
Calcium, Total	49.8	10	57.8	80	-	-	75-125	-	20
Copper, Total	0.029	0.25	0.264	94	-	-	75-125	-	20
Iron, Total	ND	1	1.08	108	-	-	75-125	-	20
Magnesium, Total	18.7	10	27.6	89	-	-	75-125	-	20
Manganese, Total	0.058	0.5	0.529	94	-	-	75-125	-	20
Potassium, Total	ND	10	11.5	115	-	-	75-125	-	20
Silver, Total	ND	0.05	0.050	100	-	-	75-125	-	20
Sodium, Total	112	10	118	60	Q	-	75-125	-	20
Zinc, Total	ND	0.5	0.555	111	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1344322-7    QC Sample: L2007394-01    Client ID: MS Sample									
Hardness	201	66.2	258	86	-	-	75-125	-	20



### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1344324-3    QC Sample: L2007393-02    Client ID: MS Sample									
Antimony, Total	ND	0.5	0.4303	86	-	-	70-130	-	20
Arsenic, Total	ND	0.12	0.1201	100	-	-	70-130	-	20
Barium, Total	0.0141	2	2.099	104	-	-	70-130	-	20
Beryllium, Total	ND	0.05	0.0523	104	-	-	70-130	-	20
Cadmium, Total	ND	0.051	0.0561	110	-	-	70-130	-	20
Chromium, Total	ND	0.2	0.2000	100	-	-	70-130	-	20
Lead, Total	ND	0.51	0.5334	104	-	-	70-130	-	20
Nickel, Total	ND	0.5	0.5217	104	-	-	70-130	-	20
Selenium, Total	ND	0.12	0.1313	109	-	-	70-130	-	20
Thallium, Total	ND	0.12	0.1273	106	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1344324-5    QC Sample: L2007394-01    Client ID: MS Sample									
Antimony, Total	ND	0.5	0.3900	78	-	-	70-130	-	20
Arsenic, Total	ND	0.12	0.1210	101	-	-	70-130	-	20
Barium, Total	0.0078	2	2.096	104	-	-	70-130	-	20
Beryllium, Total	ND	0.05	0.0525	105	-	-	70-130	-	20
Cadmium, Total	ND	0.051	0.0566	111	-	-	70-130	-	20
Chromium, Total	ND	0.2	0.2076	104	-	-	70-130	-	20
Lead, Total	0.0011	0.51	0.5366	105	-	-	70-130	-	20
Nickel, Total	0.0022	0.5	0.5279	105	-	-	70-130	-	20
Selenium, Total	ND	0.12	0.1247	104	-	-	70-130	-	20
Thallium, Total	ND	0.12	0.1272	106	-	-	70-130	-	20

**Matrix Spike Analysis**  
Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

<b>Parameter</b>	<b>Native Sample</b>	<b>MS Added</b>	<b>MS Found</b>	<b>MS %Recovery</b>	<b>MSD Found</b>	<b>MSD %Recovery</b>	<b>Recovery Limits</b>	<b>RPD</b>	<b>RPD Limits</b>
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1344593-3    QC Sample: L2007750-01    Client ID: MS Sample									
Mercury, Total	ND	0.005	0.00539	108	-	-	70-130	-	20



## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2007537

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1344322-4 QC Sample: L2007393-02 Client ID: DUP Sample</b>						
Iron, Total	ND	ND	mg/l	NC		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1344322-8 QC Sample: L2007394-01 Client ID: DUP Sample</b>						
Iron, Total	ND	ND	mg/l	NC		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1344324-4 QC Sample: L2007393-02 Client ID: DUP Sample</b>						
Arsenic, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1344324-6 QC Sample: L2007394-01 Client ID: DUP Sample</b>						
Arsenic, Total	ND	ND	mg/l	NC		20
Lead, Total	0.0011	0.0011	mg/l	1		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1344593-4 QC Sample: L2007750-01 Client ID: DUP Sample</b>						
Mercury, Total	ND	ND	mg/l	NC		20

# **INORGANICS & MISCELLANEOUS**

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**SAMPLE RESULTS**

**Lab ID:** L2007537-01  
**Client ID:** TW-2D-20  
**Sample Location:** BARNSTABLE, MA

**Date Collected:** 02/19/20 16:15  
**Date Received:** 02/20/20  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Perchlorate by IC-MS-MS - Westborough Lab</b>										
Perchlorate	0.077		ug/l	0.050	--	1	-	02/28/20 13:57	71,332.0	SS
<b>General Chemistry - Westborough Lab</b>										
Turbidity	0.45		NTU	0.20	--	1	-	02/20/20 19:27	44,180.1	AS
Odor @ 60 C	NO ODOR		TON	1	--	1	-	02/20/20 15:00	121,2150B	JO
Color, Apparent	ND		A.P.C.U.	5.0	--	1	-	02/20/20 18:20	121,2120B	AS
Alkalinity, Total	10.8		mg CaCO3/L	2.00	NA	1	-	02/21/20 05:28	121,2320B	MA
Solids, Total Dissolved	66.		mg/l	10	--	1	-	02/21/20 10:10	121,2540C	EM
Cyanide, Total	ND		mg/l	0.005	--	1	02/21/20 14:45	02/21/20 17:21	121,4500CN-CE	LH
Fluoride	ND		mg/l	0.20	--	1	-	02/22/20 03:45	121,4500F-C	CW
pH (H)	6.2		SU	-	NA	1	-	02/20/20 18:26	121,4500H+-B	AS
Nitrogen, Nitrite	ND		mg/l	0.050	--	1	-	02/21/20 06:23	44,353.2	MR
Nitrogen, Nitrate	ND		mg/l	0.10	--	1	-	02/21/20 06:23	44,353.2	MR
<b>Bacteria in Water - Westborough Lab</b>										
Coliform, Total	Negative		col/100ml	-	NA	1	-	02/20/20 17:07	121,9223B	CM
Escherichia Coli	Negative		col/100ml	-	NA	1	-	02/20/20 17:07	121,9223B	CM
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	14.3		mg/l	0.500	--	1	-	02/21/20 22:33	44,300.0	AU
Sulfate	6.52		mg/l	1.00	--	1	-	02/21/20 22:33	44,300.0	AU



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1342847-1										
Odor	NO ODOR		TON	1	--	1	-	02/20/20 15:00	121,2150B	JO
Bacteria in Water - Westborough Lab for sample(s): 01 Batch: WG1342875-1										
Coliform, Total	Negative		col/100ml	-	NA	1	-	02/20/20 17:07	121,9223B	CM
Escherichia Coli	Negative		col/100ml	-	NA	1	-	02/20/20 17:07	121,9223B	CM
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1342911-1										
Turbidity	ND		NTU	0.20	--	1	-	02/20/20 19:27	44,180.1	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1343006-1										
Nitrogen, Nitrate	ND		mg/l	0.10	--	1	-	02/21/20 06:14	44,353.2	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1343007-1										
Nitrogen, Nitrite	ND		mg/l	0.050	--	1	-	02/21/20 06:17	44,353.2	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1343043-1										
Solids, Total Dissolved	ND		mg/l	10	--	1	-	02/21/20 10:10	121,2540C	EM
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1343113-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	02/21/20 05:28	121,2320B	MA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1343211-1										
Cyanide, Total	ND		mg/l	0.005	--	1	02/21/20 14:45	02/21/20 17:07	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1343337-1										
Fluoride	ND		mg/l	0.20	--	1	-	02/22/20 03:45	121,4500F-C	CW
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1343455-1										
Sulfate	ND		mg/l	1.00	--	1	-	02/21/20 19:39	44,300.0	AU
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1343455-1										
Chloride	ND		mg/l	0.500	--	1	-	02/21/20 19:39	44,300.0	AU
Perchlorate by IC-MS-MS - Westborough Lab for sample(s): 01 Batch: WG1346587-1										
Perchlorate	ND		ug/l	0.050	--	1	-	02/28/20 11:01	71,332.0	SS

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE

**Project Number:** 2170766

**Lab Number:** L2007537

**Report Date:** 03/20/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1342891-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1342911-2								
Turbidity	104		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1343006-2								
Nitrogen, Nitrate	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1343007-2								
Nitrogen, Nitrite	96		-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1343043-2								
Solids, Total Dissolved	97		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1343113-2								
Alkalinity, Total	103		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1343211-2								
Cyanide, Total	95		-		90-110	-		

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE

**Project Number:** 2170766

**Lab Number:** L2007537

**Report Date:** 03/20/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1343337-2					
Fluoride	94	-	78-115	-	
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1343455-2					
Chloride	99	-	90-110	-	
Sulfate	101	-	90-110	-	
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 Batch: WG1346587-2					
Perchlorate	102	-	80-120	-	20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1343006-4 QC Sample: L2007537-01 Client ID: TW-2D-20												
Nitrogen, Nitrate	ND	4	3.8	95	-	-	-	-	83-113	-	-	6
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1343007-4 QC Sample: L2007537-01 Client ID: TW-2D-20												
Nitrogen, Nitrite	ND	4	3.8	95	-	-	-	-	80-120	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1343113-4 QC Sample: L2007537-01 Client ID: TW-2D-20												
Alkalinity, Total	10.8	100	119	108	-	-	-	-	86-116	-	-	10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1343211-4 WG1343211-5 QC Sample: L2007354-07 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.199	100	0.206	103	-	-	90-110	3	-	30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1343337-4 QC Sample: L2007537-01 Client ID: TW-2D-20												
Fluoride	ND	2	2.1	103	-	-	-	-	69-124	-	-	13
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1343455-3 QC Sample: L2007537-01 Client ID: TW-2D-20												
Chloride	14.3	4	17.4	76	Q	-	-	-	90-110	-	-	18
Sulfate	6.52	8	14.3	97	-	-	-	-	90-110	-	-	20
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1346587-3 QC Sample: L2007606-01 Client ID: MS Sample												
Perchlorate	2.67	1	3.81	114	-	-	-	-	80-120	-	-	20

## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2007537

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1342847-2 QC Sample: L2007537-01 Client ID: TW-2D-20						
Odor	NO ODOR	NO ODOR	TON	NC		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1342891-2 QC Sample: L2007537-01 Client ID: TW-2D-20						
pH (H)	6.2	6.3	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1342892-1 QC Sample: L2007537-01 Client ID: TW-2D-20						
Color, Apparent	ND	ND	A.P.C.U.	NC		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1342911-3 QC Sample: L2007537-01 Client ID: TW-2D-20						
Turbidity	0.45	0.47	NTU	4		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1343006-3 QC Sample: L2007537-01 Client ID: TW-2D-20						
Nitrogen, Nitrate	ND	ND	mg/l	NC		6
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1343007-3 QC Sample: L2007537-01 Client ID: TW-2D-20						
Nitrogen, Nitrite	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1343043-3 QC Sample: L2007367-01 Client ID: DUP Sample						
Solids, Total Dissolved	280	270	mg/l	4		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1343113-3 QC Sample: L2007537-01 Client ID: TW-2D-20						
Alkalinity, Total	10.8	11.2	mg CaCO3/L	4		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1343211-3 QC Sample: L2007354-07 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30



## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2007537

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1343337-3 QC Sample: L2007537-01 Client ID: TW-2D-20					
Fluoride	ND	ND	mg/l	NC	13
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1343455-4 QC Sample: L2007537-01 Client ID: TW-2D-20					
Chloride	14.3	14.0	mg/l	2	18
Sulfate	6.52	6.20	mg/l	5	20
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1346587-4 QC Sample: L2007606-01 Client ID: DUP Sample					
Perchlorate	2.67	2.50	ug/l	7	20

**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2007537**Project Number:** 2170766**Report Date:** 03/20/20**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

Cooler	Custody Seal
A	Absent

**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2007537-01A	Vial HCl preserved	A	NA		2.8	Y	Absent		524.2(14)
L2007537-01B	Vial HCl preserved	A	NA		2.8	Y	Absent		524.2(14)
L2007537-01C	Bacteria Cup Na2S2O3 preserved	A	NA		2.8	Y	Absent		T-COLI-C(1.25)
L2007537-01D	Bacteria Cup Na2S2O3 preserved	A	NA		2.8	Y	Absent		T-COLI-C(1.25)
L2007537-01E	Amber 1000ml unpreserved	A	7	7	2.8	Y	Absent		COLOR-A-2120(2),ODOR-2150(1)
L2007537-01F	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		CD-2008T(180),AG-UI(180),ZN-UI(180),CA-UI(180),NI-2008T(180),BE-2008T(180),K-UI(180),FE-UI(180),HARDU(180),MG-UI(180),AS-2008T(180),SE-2008T(180),HG-U(28),AL-UI(180),BA-2008T(180),NA-UI(180),MN-UI(180),CR-2008T(180),CU-UI(180),PB-2008T(180),SB-2008T(180),TL-2008T(180)
L2007537-01F1	Plastic 950ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		CD-2008T(180),AG-UI(180),CA-UI(180),NI-2008T(180),ZN-UI(180),BE-2008T(180),K-UI(180),FE-UI(180),HARDU(180),MG-UI(180),AS-2008T(180),HG-U(28),SE-2008T(180),AL-UI(180),BA-2008T(180),MN-UI(180),NA-UI(180),CR-2008T(180),CU-UI(180),PB-2008T(180),SB-2008T(180),TL-2008T(180)
L2007537-01F2	Plastic 950ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		CD-2008T(180),AG-UI(180),CA-UI(180),NI-2008T(180),ZN-UI(180),BE-2008T(180),K-UI(180),FE-UI(180),HARDU(180),MG-UI(180),AS-2008T(180),HG-U(28),SE-2008T(180),AL-UI(180),BA-2008T(180),MN-UI(180),NA-UI(180),CR-2008T(180),CU-UI(180),PB-2008T(180),SB-2008T(180),TL-2008T(180)
L2007537-01G	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	2.8	N	Absent		A2-14DIOXANE-522(28)
L2007537-01H	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	2.8	N	Absent		A2-14DIOXANE-522(28)
L2007537-01I	Plastic 250ml Trizma preserved	A	NA		2.8	Y	Absent		A2-537.1(14)
L2007537-01J	Plastic 250ml Trizma preserved	A	NA		2.8	Y	Absent		A2-537.1(14)
L2007537-01K	Plastic 250ml unpreserved/No Headspace	A	NA		2.8	Y	Absent		ALK-T-2320(14)

Project Name: BARNSTABLE NEW SOURCE

Lab Number: L2007537

Project Number: 2170766

Report Date: 03/20/20

**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2007537-01L	Plastic 950ml unpreserved	A	7	7	2.8	Y	Absent		F-4500(28),SO4-300(28),CL-300(28),NO2-353(2),TURB-180(2),NO3-353(2),PH-4500(.01),TDS-2540(7)
L2007537-01M	Bacteria Cup unpreserved	A	NA		2.8	Y	Absent		PERC-332(28)
L2007537-01N	Plastic 250ml unpreserved	A	NA		2.8	Y	Absent		PERC-332(28)
L2007537-01O	Plastic 250ml NaOH preserved	A	>12	>12	2.8	Y	Absent		TCN-4500(14)
L2007537-01Q	Plastic 500ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		SUB-URANIUM(180)
L2007537-01R	Plastic 950ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2007537-01R1	Plastic 950ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2007537-01R2	Plastic 950ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2007537-01R3	Plastic 950ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2007537-01R4	Plastic 950ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2007537-01R5	Plastic 950ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2007537-01R6	Plastic 950ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2007537-01R7	Plastic 950ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2007537-01R8	Plastic 950ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2007537-01S	Vial unpreserved	A	N/A	N/A	2.8	Y	Absent		SUB-RADON(4)
L2007537-01S1	Vial unpreserved	A	N/A	N/A	2.8	Y	Absent		SUB-RADON(4)
L2007537-01T	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		SUB-505(14),SUB-504.1(14)
L2007537-01T1	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		SUB-505(14),SUB-504.1(14)
L2007537-01T2	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		SUB-505(14),SUB-504.1(14)
L2007537-01T3	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		SUB-505(14),SUB-504.1(14)
L2007537-01V	Amber 1000ml NaSulfite/HCL preserved	A	<2	<2	2.8	Y	Absent		SUB-525.2(14)
L2007537-01V1	Amber 1000ml NaSulfite/HCL preserved	A	<2	<2	2.8	Y	Absent		SUB-525.2(14)
L2007537-01W	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		SUB-515.3(14)
L2007537-01W1	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		SUB-515.3(14)

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

Serial\_No:03202012:09  
**Lab Number:** L2007537  
**Report Date:** 03/20/20

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2007537-01W2	Vial Na2S2O3 preserved	A	NA		2.8	Y	Absent		SUB-515.3(14)
L2007537-01Y	Amber 1000ml unpreserved	NA	NA			Y	Absent		HOLD-SVOC(180)
L2007537-01Y1	Amber 1000ml unpreserved	NA	NA			Y	Absent		HOLD-SVOC(180)
L2007537-01Z	Vial MCAA/Na2S2O3 preserved	A	NA		2.8	Y	Absent		SUB-531.1(28)
L2007537-02A	Vial HCl preserved	A	NA		2.8	Y	Absent		524.2(14)
L2007537-02B	Vial HCl preserved	A	NA		2.8	Y	Absent		524.2(14)
L2007537-03A	Plastic 250ml unpreserved	A	NA		2.8	Y	Absent		A2-537.1(14)
L2007537-03B	Plastic 250ml Trizma preserved	A	NA		2.8	Y	Absent		A2-537.1(14)

\*Values in parentheses indicate holding time in days



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

Serial\_No:03202012:09  
**Lab Number:** L2007537  
**Report Date:** 03/20/20

**PFAS PARAMETER SUMMARY**

Parameter	Acronym	CAS Number
<b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
<b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
<b>FLUOROTELOMERS</b>		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
<b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
<b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
<b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
<b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>		
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

## GLOSSARY

### Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)  Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### Footnotes

Report Format: Data Usability Report



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Difference:** With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**PAH Total:** With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

**PFAS Total:** With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

**Data Qualifiers**

than 5x the RL. (Metals only.)

- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2007537  
**Report Date:** 03/20/20

## REFERENCES

- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 16 Methods for the Determination of Organic Compounds in Drinking Water - Supplement II. EPA/600/R-92/129, August 1992.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 71 Determination of Perchlorate in Drinking Water by Ion Chromatography with Suppressed Conductivity and Electrospray Ionization Mass Spectrometry. EPA Method 332.0, EPA/600/R-05/049. Revision 1.0, March 2005.
- 120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- 133 Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537.1, EPA/600/R-18/352. Version 1.0, November 2018.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624/624.1:** m/p-xylene, o-xylene

**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### Mansfield Facility

**SM 2540D:** TSS

**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**EPA TO-12** Non-methane organics

**EPA 3C** Fixed gases

**Biological Tissue Matrix:** EPA 3050B

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The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

**EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**

**EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.

**EPA 624.1:** Volatile Halocarbons & Aromatics,

**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.

**EPA 522.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

**EPA 245.1** Hg.

**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.







# CHAIN OF CUSTODY

PAGE 2 OF 3

Date Rec'd in Lab: 2/20/20

ALPHA Job #: 62007537

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Project Information

Project Name: Barnstable New Source

Project Location: Barnstable, MA

Project #: 2170766

Project Manager: Kevin Madunian

ALPHA Quote #:

## Report Information - Data Deliverables

ADEX  EMAIL

## Billing Information

Same as Client info PO #:

## Client Information

Client: Weston & Sampson

Address: 55 Walkers Brook Dr.  
Reading, MA

Phone: 978-532-1900

Email:

## Turn-Around Time

Standard  RUSH (only confirmed if pre-approved)

Date Due:

## Regulatory Requirements & Project Information Requirements

Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods

Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)

Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)

Yes  No NPDES RGP

Other State /Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

ANALYSIS	VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2
	SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH
	METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15
	METALS: <input type="checkbox"/> RCRA5 <input type="checkbox"/> RCRA8 <input type="checkbox"/> PPT3
	EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only
	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only
	PCB <input type="checkbox"/> PEST
	TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint
	<u>Nitrate, Nitrite</u>
	<u>Radium 226</u>
	<u>Radium 228</u>
	<u>Uranium 238</u>
	<u>Inorganics (As, Ba, Be, Ca, Cr, Ni, Cyanide, F, Hg, Se, Mn, Ti)</u>

**SAMPLE INFO**

Filtration  Field  Lab to do

Preservation  Lab to do

Sample Comments

TOTAL # BOTTLES

2 Add. Radon + Gross Alpha

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
<u>0753701</u>	<u>TW-10-20</u>	<u>2/19/20</u>	<u>4:15</u>	<u>DW</u>	<u>WJS</u>

**Container Type**  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

**Preservative**  
A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

Container Type

Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
<u>W. Jesse Schwalban</u>	<u>2/20/20</u>	<u>MSM</u>	<u>2/20/20 9:30</u>
<u>MSM</u>	<u>2/20/20 1:30</u>	<u>@elbean</u>	<u>2/20/20 1:30</u>

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)



# CHAIN OF CUSTODY

PAGE 3 OF 3

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

Date Rec'd in Lab: 2/20/20

ALPHA Job #: L2007537

## Project Information

Project Name: Barnstable New Source

Project Location: Barnstable, MA

Project #: 2170766

Project Manager: Karin McKinnon

ALPHA Quote #:

## Report Information - Data Deliverables

ADEX  EMAIL

Same as Client info PO #:

## Client Information

Client: Weston & Sampson

Address: 55 Walkers Brook Drive

Reading, MA

Phone: 978 532-1900

Email:

Additional Project Information:

## Turn-Around Time

#Standard  RUSH (only confirmed if pre-approved!)

Date Due:

## Regulatory Requirements & Project Information Requirements

- Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods
- Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
- Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)
- Yes  No NPDES RGP
- Other State /Fed Program Criteria

ANALYSIS		SAMPLE INFO	
VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2	SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH	Filtration	<input type="checkbox"/> Field
METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> MCP 15	METALS: <input type="checkbox"/> RCRA5 <input type="checkbox"/> RCRA8	<input type="checkbox"/> Lab to do	
EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	Preservation	<input type="checkbox"/> Lab to do
<input type="checkbox"/> PCB <input type="checkbox"/> PEST	TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint		
PPAS (EPA 537)		Sample Comments	

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
07537-01	TW-ID-20	2/19/20	4:15	DW	WJS
-03	Field Blank	↓	↓	↓	↓

- |                       |  |
|-----------------------|--|
| <b>Container Type</b> | <b>Preservative</b>                              |
| P= Plastic            | A= None  |
| A= Amber glass        | B= HCl   |
| V= Vial               | C= HNO <sub>3</sub>                              |
| G= Glass              | D= H <sub>2</sub> SO <sub>4</sub>                |
| B= Bacteria cup       | E= NaOH  |
| C= Cube               | F= MeOH  |
| O= Other              | G= NaHSO <sub>4</sub>                            |
| E= Encore             | H= Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> |
| D= BOD Bottle         | I= Ascorbic Acid                                 |
|                       | J= NH <sub>4</sub> Cl                            |
|                       | K= Zn Acetate                                    |
|                       | O= Other   |

Relinquished By:		Date/Time		Received By:		Date/Time	
<u>W. Am Se</u>		<u>2/20/20</u>		<u>MSK AN</u>		<u>2/20/20 8:30</u>	
<u>[Signature]</u>		<u>2/22/20 1:30</u>		<u>C. Johnson AA</u>		<u>2/20/20 14:30</u>	

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
FORM NO: 01-01 (rev. 12-Mar-2012)





# GRANITE STATE

## ANALYTICAL SERVICES, LLC.

22 Manchester Road, Unit 2, Derry, NH 03038

Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 03/20/2020  
**CLIENT NAME:** Alpha Analytical-Westborough

**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581

**SAMPLE ID#:** 2002-01926-001  
**SAMPLED BY:** Alpha Analytical-Westborough

**SAMPLE ADDRESS:** L2007537  
 TW-2D-20  
 MA

**DATE AND TIME COLLECTED:** 02/19/2020 4:15PM

**DATE AND TIME RECEIVED:** 02/21/2020 10:13AM

**ANALYSIS PACKAGE:** SOC GSA MA

**RECEIPT TEMPERATURE:** ON ICE 3.4° CELSIUS

**MORE LOC INFO:**

**CLIENT JOB #**

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
1,2-Dibromo-3-chloropropane (DBCP)*	<0.02	ug/L	✓		0.02	0.2 ug/L	EPA 504.1	KV-NH	02/27/20 9:51PM
Date Extracted	-					No Limit	EPA 504.1	GQ-NH	02/27/20 2:05PM
Ethylene Dibromide (EDB)*	<0.02	ug/L	✓		0.02	0.05 ug/L	EPA 504.1	KV-NH	02/27/20 9:51PM
Aroclor 1016 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	02/28/20 12:10AM
Aroclor 1221 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	02/28/20 12:10AM
Aroclor 1232 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	02/28/20 12:10AM
Aroclor 1242 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	02/28/20 12:10AM
Aroclor 1248 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	02/28/20 12:10AM
Aroclor 1254 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	02/28/20 12:10AM
Aroclor 1260 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	02/28/20 12:10AM
Chlordane*	<0.2	ug/L	✓		0.2	2 ug/L	EPA 505	GQ-NH	02/28/20 12:10AM
Date Extracted	-					No Limit	EPA 505	GQ-NH	02/27/20 2:05PM
Toxaphene*	<1.0	ug/L	✓		1.0	3 ug/L	EPA 505	GQ-NH	02/28/20 12:10AM
2,4,5-TP (Silvex)*	<0.25	ug/L	✓		0.25	50 ug/L	EPA 515.3	KV-NH	02/28/20 8:36AM
2,4-D*	<1	ug/L	✓		1	70 ug/L	EPA 515.3	KV-NH	02/28/20 8:36AM
Dalapon*	<1	ug/L	✓		1	200 ug/L	EPA 515.3	KV-NH	02/28/20 8:36AM
Date Extracted	-					No Limit	EPA 515.3	TA-NH	02/27/20 9:00AM
Dicamba*	<0.18	ug/L			0.18	No Limit	EPA 515.3	KV-NH	02/28/20 8:36AM
Dinoseb*	<0.5	ug/L	✓		0.5	7 ug/L	EPA 515.3	KV-NH	02/28/20 8:36AM
Pentachlorophenol*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 515.3	KV-NH	02/28/20 8:36AM
Picloram*	<1.3	ug/L	✓		1.3	500 ug/L	EPA 515.3	KV-NH	02/28/20 8:36AM
2,4-Dichlorophenylacetic acid	101	%	✓			70-130%	EPA 515.3 - SS	KV-NH	02/28/20 8:36AM
Alachlor*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
Aldrin*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/02/20 9:17PM
Atrazine*	<0.1	ug/L	✓		0.1	3 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
Benzo(a)pyrene*	<0.1	ug/L	✓		0.1	0.2 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
Butachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/02/20 9:17PM
Date Extracted	-					No Limit	EPA 525.2	GQ-NH	03/02/20 10:15AM
Di(2-ethylhexyl)adipate*	<0.6	ug/L	✓		0.6	400 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
Di(2-ethylhexyl)phthalate*	<3	ug/L	✓		3	6 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
Dieldrin*	<0.04	ug/L			0.04	No Limit	EPA 525.2	DD-NH	03/02/20 9:17PM



# GRANITE STATE

## ANALYTICAL SERVICES, LLC.

22 Manchester Road, Unit 2, Derry, NH 03038

Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 03/20/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581

**SAMPLE ID#:** 2002-01926-001  
**SAMPLED BY:** Alpha Analytical-Westborough

**SAMPLE ADDRESS:** L2007537  
 TW-2D-20  
 MA

**MORE LOC INFO:**

**DATE AND TIME COLLECTED:** 02/19/2020 4:15PM  
**DATE AND TIME RECEIVED:** 02/21/2020 10:13AM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE 3.4° CELSIUS

**CLIENT JOB #**

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Endrin*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
Heptachlor Epoxide*	<0.06	ug/L	✓		0.06	0.2 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
Heptachlor*	<0.04	ug/L	✓		0.04	0.4 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
Hexachlorobenzene*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
Hexachlorocyclopentadiene*	<0.1	ug/L	✓		0.1	50 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
Lindane*	<0.07	ug/L	✓		0.07	0.2 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
Methoxychlor*	<0.1	ug/L	✓		0.1	40 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
Metolachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/02/20 9:17PM
Metribuzin*	<0.1	ug/L	✓		0.1	70 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
Propachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/02/20 9:17PM
Simazine*	<0.1	ug/L	✓		0.1	4 ug/L	EPA 525.2	DD-NH	03/02/20 9:17PM
1,3-Dimethyl-2-nitrobenzene	99	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/02/20 9:17PM
Perylene-d12	92	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/02/20 9:17PM
Pyrene-d10	98	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/02/20 9:17PM
Triphenylphosphate	115	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/02/20 9:17PM
3-Hydroxycarbofuran*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	02/25/20 10:56AM
Aldicarb Sulfone*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	02/25/20 10:56AM
Aldicarb Sulfoxide*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	02/25/20 10:56AM
Aldicarb*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	02/25/20 10:56AM
Carbaryl*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	02/25/20 10:56AM
Carbofuran*	<0.9	ug/L	✓		0.9	40 ug/L	EPA 531.1	KV-NH	02/25/20 10:56AM
Date Extracted	-					No Limit	EPA 531.1	KV-NH	02/24/20 1:50PM
Methiocarb*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	02/25/20 10:56AM
Methomyl*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	02/25/20 10:56AM
Oxamyl (Vydate)*	<1	ug/L	✓		1	200 ug/L	EPA 531.1	KV-NH	02/25/20 10:56AM
Propoxur (Baygon)*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	02/25/20 10:56AM



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**DATE PRINTED:** 03/20/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2002-01926-001  
**SAMPLED BY:** Alpha Analytical-Westborough

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	▼
Fails State Guideline	✕
Attention	⚠

**SAMPLE ADDRESS:** L2007537  
 TW-2D-20  
 MA

**DATE AND TIME COLLECTED:** 02/19/2020 4:15PM  
**DATE AND TIME RECEIVED:** 02/21/2020 10:13AM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE 3.4° CELSIUS  
**CLIENT JOB #**

**MORE LOC INFO:**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
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The results presented in this report relate to the samples listed above in the condition in which they were received.

RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

Note: Analyst 2976 = Pace Analytical Services - Pittsburgh. Revision #1- Corrected client ID #.

**\* MA Certified Analysis**

The Commonwealth of Massachusetts has set an Advisory Limit of 10,000 pCi/L for Radon in Water

---

 Donald A. D'Anjou, Ph. D.  
 Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.  
 State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |  
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### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 03/20/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2002-01926-002  
**SAMPLED BY:** Alpha Analytical-Westborough  
**SAMPLE ADDRESS:** L2007537  
 TW-2D-20  
 MA  
**MORE LOC INFO:**

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

**DATE AND TIME COLLECTED:** 02/19/2020 4:15PM  
**DATE AND TIME RECEIVED:** 02/21/2020 10:13AM  
**ANALYSIS PACKAGE:** Rads Full-MS  
**RECEIPT TEMPERATURE:** ON ICE 3.4° CELSIUS  
**CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Uranium*	<1	ug/L			1	30 ug/L	EPA 200.8	CW-NH	02/24/20 3:07PM
Uranium	<0.67	pCi/L			0.67	20 pCi/L	EPA 200.8 Calc.	CW-NH	02/24/20 3:07PM
Analytical Gross Alpha*	<3	pCi/L			3	No Limit	EPA 900	2976	03/17/20 8:25AM
Gross Beta*	<3	pCi/L			3.0		EPA 900.0	2976	03/17/20 8:25AM
Radium 226*	<1	pCi/L			1	No Limit	EPA 903.0	2976	03/06/20 1:24PM
Radium 228*	<1	pCi/L			1	No Limit	EPA 904.0	2976	03/09/20 11:20AM
Combined Radium	<1	pCi/L			1	5 pCi/L	N/A Calculation	2976	03/11/20 9:06AM
Compliance Gross Alpha*	<3	pCi/L			3	15 pCi/L	N/A Calculation	ES-NH	03/17/20 8:25AM

The results presented in this report relate to the samples listed above in the condition in which they were received.

RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

Note: Analyst 2976 = Pace Analytical Services - Pittsburgh. Revision #1- Corrected client ID #.

**\* MA Certified Analysis**

The Commonwealth of Massachusetts has set an Advisory Limit of 10,000 pCi/L for Radon in Water

---

Donald A. D'Anjou, Ph. D.  
 Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.  
 State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |  
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### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 03/20/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581

**SAMPLE ID#:** 2002-01926-003  
**SAMPLED BY:** Alpha Analytical-Westborough

**SAMPLE ADDRESS:** L2007537  
 TW-2D-20  
 MA

**MORE LOC INFO:**

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	⚠
Fails State Guideline	✕
Attention	⚠

**DATE AND TIME COLLECTED:** 02/19/2020 4:15PM  
**DATE AND TIME RECEIVED:** 02/21/2020 10:13AM  
**ANALYSIS PACKAGE:** Radon Water-Mass  
**RECEIPT TEMPERATURE:** ON ICE 3.4° CELSIUS  
**CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Radon	280	pCi/L	✓		100	10000 pCi/L (MA Limit)	SM 7500 Rn B	KP-ME	02/22/20 5:03PM

The results presented in this report relate to the samples listed above in the condition in which they were received.

RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

Note: Analyst 2976 = Pace Analytical Services - Pittsburgh. Revision #1- Corrected client ID #.

**\* MA Certified Analysis**

The Commonwealth of Massachusetts has set an Advisory Limit of 10,000 pCi/L for Radon in Water

  
 Donald A. D'Anjou, Ph. D.  
 Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.  
 State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |  
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## ANALYTICAL REPORT

Lab Number:	L2003757
Client:	Weston & Sampson 55 Walkers Brook Drive Suite 100 Reading, MA 01867
ATTN:	Kevin MacKinnon
Phone:	(978) 532-1900
Project Name:	BARNSTABLE NEW SOURCE STUDY
Project Number:	2170766
Report Date:	02/19/20

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

---

Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L2003757-01	TW-1E-20	DW	BARNSTABLE, MA	01/27/20 13:05	01/27/20
L2003757-02	TB-01	DW	BARNSTABLE, MA	01/27/20 00:00	01/27/20

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

**HOLD POLICY** - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

---

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

### Case Narrative (continued)

#### Report Submission

February 19, 2020: This final report includes the results of all requested analyses.

February 04, 2020: This is a preliminary report.

The analyses of 504.1, 505, 515.3, 525.2, 531.1, Alpha/Beta, RA226, RA228, Radon and Uranium were subcontracted. Copies of the laboratory reports are included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

#### Sample Receipt

L2003757-01: The sample was received above the appropriate pH for the 1,4 Dioxane via EPA 522 analysis.

L2003757-01: Sample containers for the analysis of Semivolatile Organics were received for the "TW-1E-20" sample, but were not listed on the chain of custody. The analysis was not performed at the client's request.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

*Tiffani Morrissey* - Tiffani Morrissey

Title: Technical Director/Representative

Date: 02/19/20

# ORGANICS

# VOLATILES



**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**SAMPLE RESULTS**

Lab ID: L2003757-01  
 Client ID: TW-1E-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 01/27/20 13:05  
 Date Received: 01/27/20  
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw  
 Analytical Method: 16,524.2  
 Analytical Date: 01/29/20 12:40  
 Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
Dichlorodifluoromethane	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	0.50	--	1
Bromomethane	ND		ug/l	0.50	--	1
Chloroethane	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	0.50	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
Methylene chloride	ND		ug/l	0.50	--	1
Methyl tert butyl ether	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.50	--	1
1,1-Dichloroethane	ND		ug/l	0.50	--	1
2,2-Dichloropropane	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Chloroform	1.0		ug/l	0.50	--	1
Bromochloromethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	0.50	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**SAMPLE RESULTS**

Lab ID: L2003757-01  
 Client ID: TW-1E-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 01/27/20 13:05  
 Date Received: 01/27/20  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
1,3-Dichloropropane	ND		ug/l	0.50	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,2-Dibromoethane	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
p/m-Xylene	ND		ug/l	0.50	--	1
o-Xylene	ND		ug/l	0.50	--	1
Styrene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
Bromoform	ND		ug/l	0.50	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
1,2,3-Trichloropropane	ND		ug/l	0.50	--	1
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	0.50	--	1
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--	1
o-Chlorotoluene	ND		ug/l	0.50	--	1
p-Chlorotoluene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	0.50	--	1
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
1,3-Dichlorobenzene	ND		ug/l	0.50	--	1
1,4-Dichlorobenzene	ND		ug/l	0.50	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	0.50	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--	1
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**SAMPLE RESULTS**

Lab ID: L2003757-01  
 Client ID: TW-1E-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 01/27/20 13:05  
 Date Received: 01/27/20  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Volatile Organics by GC/MS - Westborough Lab						
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	100		80-120
4-Bromofluorobenzene	99		80-120

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**SAMPLE RESULTS**

Lab ID: L2003757-02  
 Client ID: TB-01  
 Sample Location: BARNSTABLE, MA

Date Collected: 01/27/20 00:00  
 Date Received: 01/27/20  
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw  
 Analytical Method: 16,524.2  
 Analytical Date: 01/29/20 15:17  
 Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
Dichlorodifluoromethane	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	0.50	--	1
Bromomethane	ND		ug/l	0.50	--	1
Chloroethane	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	0.50	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
Methylene chloride	ND		ug/l	0.50	--	1
Methyl tert butyl ether	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.50	--	1
1,1-Dichloroethane	ND		ug/l	0.50	--	1
2,2-Dichloropropane	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Chloroform	ND		ug/l	0.50	--	1
Bromochloromethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	0.50	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**SAMPLE RESULTS**

Lab ID: L2003757-02  
 Client ID: TB-01  
 Sample Location: BARNSTABLE, MA

Date Collected: 01/27/20 00:00  
 Date Received: 01/27/20  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
1,3-Dichloropropane	ND		ug/l	0.50	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,2-Dibromoethane	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
p/m-Xylene	ND		ug/l	0.50	--	1
o-Xylene	ND		ug/l	0.50	--	1
Styrene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
Bromoform	ND		ug/l	0.50	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
1,2,3-Trichloropropane	ND		ug/l	0.50	--	1
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	0.50	--	1
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--	1
o-Chlorotoluene	ND		ug/l	0.50	--	1
p-Chlorotoluene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	0.50	--	1
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
1,3-Dichlorobenzene	ND		ug/l	0.50	--	1
1,4-Dichlorobenzene	ND		ug/l	0.50	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	0.50	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--	1
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**SAMPLE RESULTS**

Lab ID: L2003757-02  
 Client ID: TB-01  
 Sample Location: BARNSTABLE, MA

Date Collected: 01/27/20 00:00  
 Date Received: 01/27/20  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Volatile Organics by GC/MS - Westborough Lab						
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Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	100		80-120
4-Bromofluorobenzene	102		80-120

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 01/29/20 11:45  
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1335935-4					
Dichlorodifluoromethane	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	0.50	--
Bromomethane	ND		ug/l	0.50	--
Chloroethane	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	0.50	--
1,1-Dichloroethene	ND		ug/l	0.50	--
Methylene chloride	ND		ug/l	0.50	--
Methyl tert butyl ether	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.50	--
1,1-Dichloroethane	ND		ug/l	0.50	--
2,2-Dichloropropane	ND		ug/l	0.50	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Chloroform	ND		ug/l	0.50	--
Bromochloromethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	0.50	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.50	--
1,3-Dichloropropane	ND		ug/l	0.50	--

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 01/29/20 11:45  
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1335935-4					
Tetrachloroethene	ND		ug/l	0.50	--
Dibromochloromethane	ND		ug/l	0.50	--
1,2-Dibromoethane	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Ethylbenzene	ND		ug/l	0.50	--
p/m-Xylene	ND		ug/l	0.50	--
o-Xylene	ND		ug/l	0.50	--
Styrene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
Bromoform	ND		ug/l	0.50	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
1,2,3-Trichloropropane	ND		ug/l	0.50	--
n-Propylbenzene	ND		ug/l	0.50	--
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	0.50	--
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--
o-Chlorotoluene	ND		ug/l	0.50	--
p-Chlorotoluene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	0.50	--
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
1,3-Dichlorobenzene	ND		ug/l	0.50	--
1,4-Dichlorobenzene	ND		ug/l	0.50	--
n-Butylbenzene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	0.50	--
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--



**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 01/29/20 11:45  
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1335935-4					
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	100		80-120
4-Bromofluorobenzene	100		80-120

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE STUDY

**Lab Number:** L2003757

**Project Number:** 2170766

**Report Date:** 02/19/20

Parameter	LCS	Qual	LCS	Qual	%Recovery	RPD	Qual	RPD
	%Recovery		%Recovery		Limits			Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1335935-3								
Dichlorodifluoromethane	85		-		70-130	-		20
Chloromethane	105		-		70-130	-		20
Vinyl chloride	125		-		70-130	-		20
Bromomethane	98		-		70-130	-		20
Chloroethane	102		-		70-130	-		20
Trichlorofluoromethane	112		-		70-130	-		20
1,1-Dichloroethene	115		-		70-130	-		20
Methylene chloride	118		-		70-130	-		20
Methyl tert butyl ether	110		-		70-130	-		20
trans-1,2-Dichloroethene	118		-		70-130	-		20
1,1-Dichloroethane	115		-		70-130	-		20
2,2-Dichloropropane	90		-		70-130	-		20
cis-1,2-Dichloroethene	105		-		70-130	-		20
Chloroform	100		-		70-130	-		20
Bromochloromethane	105		-		70-130	-		20
1,1,1-Trichloroethane	90		-		70-130	-		20
1,1-Dichloropropene	98		-		70-130	-		20
Carbon tetrachloride	90		-		70-130	-		20
1,2-Dichloroethane	105		-		70-130	-		20
Benzene	100		-		70-130	-		20
Trichloroethene	95		-		70-130	-		20
1,2-Dichloropropane	100		-		70-130	-		20
Bromodichloromethane	100		-		70-130	-		20

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE STUDY

**Lab Number:** L2003757

**Project Number:** 2170766

**Report Date:** 02/19/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1335935-3								
Dibromomethane	102		-		70-130	-		20
cis-1,3-Dichloropropene	88		-		70-130	-		20
Toluene	98		-		70-130	-		20
trans-1,3-Dichloropropene	80		-		70-130	-		20
1,1,2-Trichloroethane	102		-		70-130	-		20
1,3-Dichloropropane	102		-		70-130	-		20
Tetrachloroethene	90		-		70-130	-		20
Dibromochloromethane	98		-		70-130	-		20
1,2-Dibromoethane	98		-		70-130	-		20
Chlorobenzene	100		-		70-130	-		20
1,1,1,2-Tetrachloroethane	90		-		70-130	-		20
Ethylbenzene	100		-		70-130	-		20
p/m-Xylene	102		-		70-130	-		20
o-Xylene	100		-		70-130	-		20
Styrene	100		-		70-130	-		20
Isopropylbenzene	100		-		70-130	-		20
Bromoform	100		-		70-130	-		20
1,1,1,2,2-Tetrachloroethane	105		-		70-130	-		20
1,2,3-Trichloropropane	105		-		70-130	-		20
n-Propylbenzene	102		-		70-130	-		20
Bromobenzene	105		-		70-130	-		20
1,3,5-Trimethylbenzene	100		-		70-130	-		20
o-Chlorotoluene	102		-		70-130	-		20

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	RPD	
	%Recovery	Qual	%Recovery	Qual			Qual	Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1335935-3								
p-Chlorotoluene	102		-		70-130	-		20
tert-Butylbenzene	100		-		70-130	-		20
1,2,4-Trimethylbenzene	100		-		70-130	-		20
sec-Butylbenzene	102		-		70-130	-		20
p-Isopropyltoluene	100		-		70-130	-		20
1,3-Dichlorobenzene	100		-		70-130	-		20
1,4-Dichlorobenzene	102		-		70-130	-		20
n-Butylbenzene	108		-		70-130	-		20
1,2-Dichlorobenzene	102		-		70-130	-		20
1,2-Dibromo-3-chloropropane	98		-		70-130	-		20
1,2,4-Trichlorobenzene	95		-		70-130	-		20
Hexachlorobutadiene	92		-		70-130	-		20
Naphthalene	100		-		70-130	-		20
1,2,3-Trichlorobenzene	95		-		70-130	-		20

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
1,2-Dichlorobenzene-d4	100				80-120
4-Bromofluorobenzene	100				80-120



## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE STUDY

**Lab Number:** L2003757

**Project Number:** 2170766

**Report Date:** 02/19/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01-02    QC Batch ID: WG1335935-10    QC Sample: L2003882-01    Client ID: MS Sample												
Dichlorodifluoromethane	ND	4	2.8	70		-	-		70-130	-		20
Chloromethane	ND	4	4.1	103		-	-		70-130	-		20
Vinyl chloride	ND	4	4.9	123		-	-		70-130	-		20
Bromomethane	ND	4	3.4	85		-	-		70-130	-		20
Chloroethane	ND	4	4.1	103		-	-		70-130	-		20
Trichlorofluoromethane	ND	4	4.1	103		-	-		70-130	-		20
1,1-Dichloroethene	ND	4	4.5	113		-	-		70-130	-		20
Methylene chloride	ND	4	4.4	110		-	-		70-130	-		20
Methyl tert butyl ether	ND	4	3.6	90		-	-		70-130	-		20
trans-1,2-Dichloroethene	ND	4	4.4	110		-	-		70-130	-		20
1,1-Dichloroethane	ND	4	4.3	108		-	-		70-130	-		20
2,2-Dichloropropane	ND	4	2.8	70		-	-		70-130	-		20
cis-1,2-Dichloroethene	ND	4	3.7	92		-	-		70-130	-		20
Chloroform	ND	4	3.6	90		-	-		70-130	-		20
Bromochloromethane	ND	4	3.6	90		-	-		70-130	-		20
1,1,1-Trichloroethane	ND	4	3.2	80		-	-		70-130	-		20
1,1-Dichloropropene	ND	4	3.5	88		-	-		70-130	-		20
Carbon tetrachloride	ND	4	3.2	80		-	-		70-130	-		20
1,2-Dichloroethane	ND	4	3.7	92		-	-		70-130	-		20
Benzene	ND	4	3.6	90		-	-		70-130	-		20
Trichloroethene	ND	4	3.4	85		-	-		70-130	-		20
1,2-Dichloropropane	ND	4	3.5	88		-	-		70-130	-		20
Bromodichloromethane	ND	4	3.4	85		-	-		70-130	-		20
Dibromomethane	ND	4	3.6	90		-	-		70-130	-		20

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE STUDY

**Lab Number:** L2003757

**Project Number:** 2170766

**Report Date:** 02/19/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01-02    QC Batch ID: WG1335935-10    QC Sample: L2003882-01    Client ID: MS Sample												
cis-1,3-Dichloropropene	ND	4	2.8	70		-	-		70-130	-		20
Toluene	ND	4	3.4	85		-	-		70-130	-		20
trans-1,3-Dichloropropene	ND	4	2.4	60	Q	-	-		70-130	-		20
1,1,2-Trichloroethane	ND	4	3.4	85		-	-		70-130	-		20
1,3-Dichloropropane	ND	4	3.4	85		-	-		70-130	-		20
Tetrachloroethene	ND	4	2.9	72		-	-		70-130	-		20
Dibromochloromethane	ND	4	3.0	75		-	-		70-130	-		20
1,2-Dibromoethane	ND	4	3.2	80		-	-		70-130	-		20
Chlorobenzene	ND	4	3.4	85		-	-		70-130	-		20
1,1,1,2-Tetrachloroethane	ND	4	3.0	75		-	-		70-130	-		20
Ethylbenzene	ND	4	3.5	88		-	-		70-130	-		20
p/m-Xylene	ND	8	7.0	88		-	-		70-130	-		20
o-Xylene	ND	4	3.4	85		-	-		70-130	-		20
Styrene	ND	4	3.3	82		-	-		70-130	-		20
Isopropylbenzene	ND	4	3.4	85		-	-		70-130	-		20
Bromoform	ND	4	2.9	72		-	-		70-130	-		20
1,1,1,2,2-Tetrachloroethane	ND	4	3.6	90		-	-		70-130	-		20
1,2,3-Trichloropropane	ND	4	3.4	85		-	-		70-130	-		20
n-Propylbenzene	ND	4	3.3	82		-	-		70-130	-		20
Bromobenzene	ND	4	3.6	90		-	-		70-130	-		20
1,3,5-Trimethylbenzene	ND	4	3.2	80		-	-		70-130	-		20
o-Chlorotoluene	ND	4	3.5	88		-	-		70-130	-		20
p-Chlorotoluene	ND	4	3.4	85		-	-		70-130	-		20
tert-Butylbenzene	ND	4	3.3	82		-	-		70-130	-		20

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE STUDY

**Project Number:** 2170766

**Lab Number:** L2003757

**Report Date:** 02/19/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatiles Organics by GC/MS - Westborough Lab    Associated sample(s): 01-02    QC Batch ID: WG1335935-10    QC Sample: L2003882-01    Client ID: MS Sample												
1,2,4-Trimethylbenzene	ND	4	3.2	80		-	-		70-130	-		20
sec-Butylbenzene	ND	4	3.1	78		-	-		70-130	-		20
p-Isopropyltoluene	ND	4	2.9	72		-	-		70-130	-		20
1,3-Dichlorobenzene	ND	4	3.1	78		-	-		70-130	-		20
1,4-Dichlorobenzene	ND	4	3.1	78		-	-		70-130	-		20
n-Butylbenzene	ND	4	3.0	75		-	-		70-130	-		20
1,2-Dichlorobenzene	ND	4	3.2	80		-	-		70-130	-		20
1,2-Dibromo-3-chloropropane	ND	4	3.2	80		-	-		70-130	-		20
1,2,4-Trichlorobenzene	ND	4	2.5	62	Q	-	-		70-130	-		20
Hexachlorobutadiene	ND	4	2.3	58	Q	-	-		70-130	-		20
Naphthalene	ND	4	3.1	78		-	-		70-130	-		20
1,2,3-Trichlorobenzene	ND	4	2.7	68	Q	-	-		70-130	-		20

<i>Surrogate</i>	<i>MS % Recovery</i>	<i>Qualifier</i>	<i>MSD % Recovery</i>	<i>Qualifier</i>	<i>Acceptance Criteria</i>
1,2-Dichlorobenzene-d4	100				80-120
4-Bromofluorobenzene	102				80-120

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE STUDY

Project Number: 2170766

Lab Number: L2003757

Report Date: 02/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1335935-9 QC Sample: L2003881-01 Client ID: DUP Sample						
Dichlorodifluoromethane	ND	ND	ug/l	NC		20
Chloromethane	ND	ND	ug/l	NC		20
Vinyl chloride	ND	ND	ug/l	NC		20
Bromomethane	ND	ND	ug/l	NC		20
Chloroethane	ND	ND	ug/l	NC		20
Trichlorofluoromethane	ND	ND	ug/l	NC		20
1,1-Dichloroethene	ND	ND	ug/l	NC		20
Methylene chloride	ND	ND	ug/l	NC		20
Methyl tert butyl ether	ND	ND	ug/l	NC		20
trans-1,2-Dichloroethene	ND	ND	ug/l	NC		20
1,1-Dichloroethane	ND	ND	ug/l	NC		20
2,2-Dichloropropane	ND	ND	ug/l	NC		20
cis-1,2-Dichloroethene	ND	ND	ug/l	NC		20
Chloroform	ND	ND	ug/l	NC		20
Bromochloromethane	ND	ND	ug/l	NC		20
1,1,1-Trichloroethane	ND	ND	ug/l	NC		20
1,1-Dichloropropene	ND	ND	ug/l	NC		20
Carbon tetrachloride	ND	ND	ug/l	NC		20
1,2-Dichloroethane	ND	ND	ug/l	NC		20
Benzene	ND	ND	ug/l	NC		20
Trichloroethene	ND	ND	ug/l	NC		20



## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE STUDY

Project Number: 2170766

Lab Number: L2003757

Report Date: 02/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1335935-9 QC Sample: L2003881-01 Client ID: DUP Sample						
1,2-Dichloropropane	ND	ND	ug/l	NC		20
Bromodichloromethane	ND	ND	ug/l	NC		20
Dibromomethane	ND	ND	ug/l	NC		20
cis-1,3-Dichloropropene	ND	ND	ug/l	NC		20
Toluene	ND	ND	ug/l	NC		20
trans-1,3-Dichloropropene	ND	ND	ug/l	NC		20
1,1,2-Trichloroethane	ND	ND	ug/l	NC		20
1,3-Dichloropropane	ND	ND	ug/l	NC		20
Tetrachloroethene	ND	ND	ug/l	NC		20
Dibromochloromethane	ND	ND	ug/l	NC		20
1,2-Dibromoethane	ND	ND	ug/l	NC		20
Chlorobenzene	ND	ND	ug/l	NC		20
1,1,1,2-Tetrachloroethane	ND	ND	ug/l	NC		20
Ethylbenzene	ND	ND	ug/l	NC		20
p/m-Xylene	ND	ND	ug/l	NC		20
o-Xylene	ND	ND	ug/l	NC		20
Styrene	ND	ND	ug/l	NC		20
Isopropylbenzene	ND	ND	ug/l	NC		20
Bromoform	ND	ND	ug/l	NC		20
1,1,1,2-Tetrachloroethane	ND	ND	ug/l	NC		20
1,2,3-Trichloropropane	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE STUDY

Project Number: 2170766

Lab Number: L2003757

Report Date: 02/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1335935-9 QC Sample: L2003881-01 Client ID: DUP Sample						
Xylene (Total) <sup>1</sup>	ND	ND	ug/l	NC		20
n-Propylbenzene	ND	ND	ug/l	NC		20
Bromobenzene	ND	ND	ug/l	NC		20
1,3,5-Trimethylbenzene	ND	ND	ug/l	NC		20
Trihalomethanes, Total	ND	ND	ug/l	NC		20
o-Chlorotoluene	ND	ND	ug/l	NC		20
p-Chlorotoluene	ND	ND	ug/l	NC		20
tert-Butylbenzene	ND	ND	ug/l	NC		20
1,2,4-Trimethylbenzene	ND	ND	ug/l	NC		20
sec-Butylbenzene	ND	ND	ug/l	NC		20
p-Isopropyltoluene	ND	ND	ug/l	NC		20
1,3-Dichlorobenzene	ND	ND	ug/l	NC		20
1,4-Dichlorobenzene	ND	ND	ug/l	NC		20
n-Butylbenzene	ND	ND	ug/l	NC		20
1,2-Dichlorobenzene	ND	ND	ug/l	NC		20
1,2-Dibromo-3-chloropropane	ND	ND	ug/l	NC		20
1,2,4-Trichlorobenzene	ND	ND	ug/l	NC		20
Hexachlorobutadiene	ND	ND	ug/l	NC		20
Naphthalene	ND	ND	ug/l	NC		20
1,2,3-Trichlorobenzene	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE STUDY

Project Number: 2170766

Lab Number: L2003757

Report Date: 02/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1335935-9 QC Sample: L2003881-01 Client ID: DUP Sample						

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	101		99		80-120
4-Bromofluorobenzene	100		100		80-120

# SEMIVOLATILES

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**SAMPLE RESULTS**

Lab ID: L2003757-01  
 Client ID: TW-1E-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 01/27/20 13:05  
 Date Received: 01/27/20  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Dw  
 Analytical Method: 120,522  
 Analytical Date: 01/29/20 14:02  
 Analyst: PS

Extraction Method: EPA 522  
 Extraction Date: 01/28/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.139	--	1
Surrogate			% Recovery	Qualifier	Acceptance Criteria	
1,4-Dioxane-d8			84		70-130	

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 120,522  
Analytical Date: 01/29/20 11:59  
Analyst: PS

Extraction Method: EPA 522  
Extraction Date: 01/28/20 05:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01 Batch: WG1334563-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	88		70-130

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01 Batch: WG1334563-2 WG1334563-3								
1,4-Dioxane	84		85		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	87		86		70-130

## METALS



**Project Name:** BARNSTABLE NEW SOURCE STUDY**Lab Number:** L2003757**Project Number:** 2170766**Report Date:** 02/19/20**SAMPLE RESULTS**

Lab ID: L2003757-01

Date Collected: 01/27/20 13:05

Client ID: TW-1E-20

Date Received: 01/27/20

Sample Location: BARNSTABLE, MA

Field Prep: Not Specified

Sample Depth:

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	ND		mg/l	0.100	--	1	01/28/20 13:55	01/30/20 18:12	EPA 3005A	19,200.7	LC
Antimony, Total	ND		mg/l	0.0040	--	1	01/28/20 13:55	01/30/20 09:14	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.0010	--	1	01/28/20 13:55	01/30/20 09:14	EPA 3005A	3,200.8	AM
Barium, Total	0.0045		mg/l	0.0010	--	1	01/28/20 13:55	01/30/20 09:14	EPA 3005A	3,200.8	AM
Beryllium, Total	ND		mg/l	0.0010	--	1	01/28/20 13:55	01/30/20 09:14	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.0002	--	1	01/28/20 13:55	01/30/20 09:14	EPA 3005A	3,200.8	AM
Calcium, Total	2.03		mg/l	0.100	--	1	01/28/20 13:55	01/30/20 18:12	EPA 3005A	19,200.7	LC
Chromium, Total	ND		mg/l	0.0010	--	1	01/28/20 13:55	01/30/20 09:14	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.010	--	1	01/28/20 13:55	01/30/20 18:12	EPA 3005A	19,200.7	LC
Iron, Total	ND		mg/l	0.050	--	1	01/28/20 13:55	01/30/20 18:12	EPA 3005A	19,200.7	LC
Lead, Total	ND		mg/l	0.0010	--	1	01/28/20 13:55	01/30/20 09:14	EPA 3005A	3,200.8	AM
Magnesium, Total	1.54		mg/l	0.100	--	1	01/28/20 13:55	01/30/20 18:12	EPA 3005A	19,200.7	LC
Manganese, Total	ND		mg/l	0.010	--	1	01/28/20 13:55	01/30/20 18:12	EPA 3005A	19,200.7	LC
Mercury, Total	ND		mg/l	0.0002	--	1	01/28/20 14:48	01/28/20 21:22	EPA 245.1	3,245.1	AL
Nickel, Total	ND		mg/l	0.0020	--	1	01/28/20 13:55	01/30/20 09:14	EPA 3005A	3,200.8	AM
Potassium, Total	ND		mg/l	2.50	--	1	01/28/20 13:55	01/30/20 18:12	EPA 3005A	19,200.7	LC
Selenium, Total	ND		mg/l	0.0050	--	1	01/28/20 13:55	01/30/20 09:14	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.007	--	1	01/28/20 13:55	01/30/20 18:12	EPA 3005A	19,200.7	LC
Sodium, Total	9.17		mg/l	2.00	--	1	01/28/20 13:55	01/30/20 18:12	EPA 3005A	19,200.7	LC
Thallium, Total	ND		mg/l	0.0010	--	1	01/28/20 13:55	01/30/20 09:14	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.050	--	1	01/28/20 13:55	01/30/20 18:12	EPA 3005A	19,200.7	LC
<b>Total Hardness by SM 2340B - Mansfield Lab</b>											
Hardness	11.4		mg/l	0.660	NA	1	01/28/20 13:55	01/30/20 18:12	EPA 3005A	19,200.7	LC



**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

### Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1334597-1</b>									
Aluminum, Total	ND	mg/l	0.100	--	1	01/28/20 13:55	01/30/20 16:17	19,200.7	LC
Calcium, Total	ND	mg/l	0.100	--	1	01/28/20 13:55	01/30/20 16:17	19,200.7	LC
Copper, Total	ND	mg/l	0.010	--	1	01/28/20 13:55	01/30/20 16:17	19,200.7	LC
Iron, Total	ND	mg/l	0.050	--	1	01/28/20 13:55	01/30/20 16:17	19,200.7	LC
Magnesium, Total	ND	mg/l	0.100	--	1	01/28/20 13:55	01/30/20 16:17	19,200.7	LC
Manganese, Total	ND	mg/l	0.010	--	1	01/28/20 13:55	01/30/20 16:17	19,200.7	LC
Potassium, Total	ND	mg/l	2.50	--	1	01/28/20 13:55	01/30/20 16:17	19,200.7	LC
Silver, Total	ND	mg/l	0.007	--	1	01/28/20 13:55	01/30/20 16:17	19,200.7	LC
Sodium, Total	ND	mg/l	2.00	--	1	01/28/20 13:55	01/30/20 16:17	19,200.7	LC
Zinc, Total	ND	mg/l	0.050	--	1	01/28/20 13:55	01/30/20 16:17	19,200.7	LC

#### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1334597-1</b>									
Hardness	ND	mg/l	0.660	NA	1	01/28/20 13:55	01/30/20 16:17	19,200.7	LC

#### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1334599-1</b>									
Antimony, Total	ND	mg/l	0.0040	--	1	01/28/20 13:55	01/30/20 08:40	3,200.8	AM
Arsenic, Total	ND	mg/l	0.0010	--	1	01/28/20 13:55	01/30/20 08:40	3,200.8	AM
Barium, Total	ND	mg/l	0.0010	--	1	01/28/20 13:55	01/30/20 08:40	3,200.8	AM
Beryllium, Total	ND	mg/l	0.0010	--	1	01/28/20 13:55	01/30/20 08:40	3,200.8	AM
Cadmium, Total	ND	mg/l	0.0002	--	1	01/28/20 13:55	01/30/20 08:40	3,200.8	AM
Chromium, Total	ND	mg/l	0.0010	--	1	01/28/20 13:55	01/30/20 08:40	3,200.8	AM



**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

### Method Blank Analysis Batch Quality Control

Lead, Total	ND	mg/l	0.0010	--	1	01/28/20 13:55	01/30/20 08:40	3,200.8	AM
Nickel, Total	ND	mg/l	0.0020	--	1	01/28/20 13:55	01/30/20 08:40	3,200.8	AM
Selenium, Total	ND	mg/l	0.0050	--	1	01/28/20 13:55	01/30/20 08:40	3,200.8	AM
Thallium, Total	ND	mg/l	0.0010	--	1	01/28/20 13:55	01/30/20 08:40	3,200.8	AM

#### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1334617-1									
Mercury, Total	ND	mg/l	0.0002	--	1	01/28/20 14:48	01/28/20 20:52	3,245.1	AL

#### Prep Information

Digestion Method: EPA 245.1

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1334597-2								
Aluminum, Total	102		-		85-115	-		
Calcium, Total	98		-		85-115	-		
Copper, Total	100		-		85-115	-		
Iron, Total	104		-		85-115	-		
Magnesium, Total	101		-		85-115	-		
Manganese, Total	95		-		85-115	-		
Potassium, Total	102		-		85-115	-		
Silver, Total	103		-		85-115	-		
Sodium, Total	102		-		85-115	-		
Zinc, Total	108		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1334597-2								
Hardness	100		-		85-115	-		

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE STUDY

**Lab Number:** L2003757

**Project Number:** 2170766

**Report Date:** 02/19/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1334599-2					
Antimony, Total	103	-	85-115	-	
Arsenic, Total	102	-	85-115	-	
Barium, Total	104	-	85-115	-	
Beryllium, Total	104	-	85-115	-	
Cadmium, Total	110	-	85-115	-	
Chromium, Total	100	-	85-115	-	
Lead, Total	104	-	85-115	-	
Nickel, Total	104	-	85-115	-	
Selenium, Total	105	-	85-115	-	
Thallium, Total	112	-	85-115	-	
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1334617-2					
Mercury, Total	97	-	85-115	-	

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1334597-3    QC Sample: L2003657-01    Client ID: MS Sample												
Aluminum, Total	ND	2	1.96	98	-	-	-	-	75-125	-	-	20
Calcium, Total	38.5	10	47.5	90	-	-	-	-	75-125	-	-	20
Copper, Total	ND	0.25	0.245	98	-	-	-	-	75-125	-	-	20
Iron, Total	ND	1	1.04	104	-	-	-	-	75-125	-	-	20
Magnesium, Total	6.30	10	16.0	97	-	-	-	-	75-125	-	-	20
Manganese, Total	ND	0.5	0.456	91	-	-	-	-	75-125	-	-	20
Potassium, Total	ND	10	11.4	114	-	-	-	-	75-125	-	-	20
Silver, Total	ND	0.05	0.050	100	-	-	-	-	75-125	-	-	20
Sodium, Total	7.94	10	18.0	101	-	-	-	-	75-125	-	-	20
Zinc, Total	ND	0.5	0.535	107	-	-	-	-	75-125	-	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1334597-3    QC Sample: L2003657-01    Client ID: MS Sample												
Hardness	122	66.2	185	95	-	-	-	-	75-125	-	-	20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1334597-7    QC Sample: L2003679-01    Client ID: MS Sample									
Aluminum, Total	0.147	2	2.30	108	-	-	75-125	-	20
Calcium, Total	217	10	222	50	Q	-	75-125	-	20
Copper, Total	0.210	0.25	0.494	114	-	-	75-125	-	20
Iron, Total	0.439	1	1.39	95	-	-	75-125	-	20
Magnesium, Total	525	10	518	0	Q	-	75-125	-	20
Manganese, Total	0.025	0.5	0.458	87	-	-	75-125	-	20
Potassium, Total	239	10	240	10	Q	-	75-125	-	20
Silver, Total	ND	0.05	0.070	140	Q	-	75-125	-	20
Sodium, Total	1570	10	1230	0	Q	-	75-125	-	20
Zinc, Total	0.116	0.5	0.612	99	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1334597-7    QC Sample: L2003679-01    Client ID: MS Sample									
Hardness	2700	66.2	2690	0	Q	-	75-125	-	20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
<b>Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1334599-3    QC Sample: L2003657-01    Client ID: MS Sample</b>									
Antimony, Total	ND	0.5	0.4136	83	-	-	70-130	-	20
Arsenic, Total	0.0011	0.12	0.1254	104	-	-	70-130	-	20
Barium, Total	0.0014	2	1.991	99	-	-	70-130	-	20
Beryllium, Total	ND	0.05	0.0503	100	-	-	70-130	-	20
Cadmium, Total	ND	0.051	0.0537	105	-	-	70-130	-	20
Chromium, Total	ND	0.2	0.1897	95	-	-	70-130	-	20
Lead, Total	ND	0.51	0.5383	106	-	-	70-130	-	20
Nickel, Total	ND	0.5	0.5081	102	-	-	70-130	-	20
Selenium, Total	ND	0.12	0.1306	109	-	-	70-130	-	20
Thallium, Total	ND	0.12	0.1350	112	-	-	70-130	-	20
<b>Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1334617-3    QC Sample: L2003398-01    Client ID: MS Sample</b>									
Mercury, Total	ND	0.005	0.0045	91	-	-	70-130	-	20
<b>Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1334617-5    QC Sample: L2003398-02    Client ID: MS Sample</b>									
Mercury, Total	ND	0.005	0.0046	91	-	-	70-130	-	20



## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: BARNSTABLE NEW SOURCE STUDY

Project Number: 2170766

Lab Number: L2003757

Report Date: 02/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1334597-4 QC Sample: L2003657-01 Client ID: DUP Sample</b>						
Sodium, Total	7.94	7.82	mg/l	2		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1334597-8 QC Sample: L2003679-01 Client ID: DUP Sample</b>						
Aluminum, Total	0.147	0.154	mg/l	5		20
Copper, Total	0.210	0.201	mg/l	4		20
Iron, Total	0.439	0.439	mg/l	0		20
Magnesium, Total	525	499	mg/l	5		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.116	0.111	mg/l	4		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1334599-4 QC Sample: L2003657-01 Client ID: DUP Sample</b>						
Arsenic, Total	0.0011	0.0010	mg/l	1		20
Lead, Total	ND	ND	mg/l	NC		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1334617-4 QC Sample: L2003398-01 Client ID: DUP Sample</b>						
Mercury, Total	ND	ND	mg/l	NC		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1334617-6 QC Sample: L2003398-02 Client ID: DUP Sample</b>						
Mercury, Total	ND	ND	mg/l	NC		20

# **INORGANICS & MISCELLANEOUS**

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**SAMPLE RESULTS**

**Lab ID:** L2003757-01  
**Client ID:** TW-1E-20  
**Sample Location:** BARNSTABLE, MA

**Date Collected:** 01/27/20 13:05  
**Date Received:** 01/27/20  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Perchlorate by IC-MS-MS - Westborough Lab</b>										
Perchlorate	0.054		ug/l	0.050	--	1	-	02/04/20 03:25	71,332.0	AM
<b>General Chemistry - Westborough Lab</b>										
Turbidity	ND		NTU	0.20	--	1	-	01/28/20 04:54	44,180.1	JA
Odor @ 60 C	NO ODOR		TON	1	--	1	-	01/28/20 04:56	121,2150B	CB
Color, Apparent	ND		A.P.C.U.	5.0	--	1	-	01/28/20 05:10	121,2120B	CB
Alkalinity, Total	4.50		mg CaCO3/L	2.00	NA	1	-	01/29/20 06:06	121,2320B	MA
Solids, Total Dissolved	43.		mg/l	10	--	1	-	01/28/20 08:10	121,2540C	DW
Cyanide, Total	ND		mg/l	0.005	--	1	01/28/20 09:55	01/28/20 13:37	121,4500CN-CE	LH
Fluoride	ND		mg/l	0.20	--	1	-	01/29/20 20:51	121,4500F-C	MM
pH (H)	5.7		SU	-	NA	1	-	01/27/20 22:58	121,4500H+-B	AS
Nitrogen, Nitrite	ND		mg/l	0.050	--	1	-	01/28/20 07:03	44,353.2	MR
Nitrogen, Nitrate	ND		mg/l	0.10	--	1	-	01/28/20 07:03	44,353.2	MR
<b>Bacteria in Water - Westborough Lab</b>										
Coliform, Total	Negative		col/100ml	-	NA	1	-	01/27/20 23:30	121,9223B	DP
Escherichia Coli	Negative		col/100ml	-	NA	1	-	01/27/20 23:30	121,9223B	DP
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	16.0		mg/l	0.500	--	1	-	01/30/20 06:18	44,300.0	DS
Sulfate	6.09		mg/l	1.00	--	1	-	01/30/20 06:18	44,300.0	DS



**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Bacteria in Water - Westborough Lab for sample(s): 01 Batch: WG1334368-1</b>									
Coliform, Total	Negative	col/100ml	-	NA	1	-	01/27/20 23:30	121,9223B	DP
Escherichia Coli	Negative	col/100ml	-	NA	1	-	01/27/20 23:30	121,9223B	DP
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1334407-1</b>									
Turbidity	ND	NTU	0.20	--	1	-	01/28/20 04:54	44,180.1	JA
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1334408-1</b>									
Odor	NO ODOR	TON	1	--	1	-	01/28/20 04:56	121,2150B	CB
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1334410-1</b>									
Solids, Total Dissolved	ND	mg/l	10	--	1	-	01/28/20 08:10	121,2540C	DW
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1334413-1</b>									
Nitrogen, Nitrate	ND	mg/l	0.10	--	1	-	01/28/20 06:52	44,353.2	MR
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1334414-1</b>									
Nitrogen, Nitrite	ND	mg/l	0.050	--	1	-	01/28/20 06:54	44,353.2	MR
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1334500-1</b>									
Cyanide, Total	ND	mg/l	0.005	--	1	01/28/20 09:55	01/28/20 13:20	121,4500CN-CE	LH
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1334943-1</b>									
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	01/29/20 06:06	121,2320B	MA
<b>Perchlorate by IC-MS-MS - Westborough Lab for sample(s): 01 Batch: WG1335109-1</b>									
Perchlorate	ND	ug/l	0.050	--	1	-	02/04/20 01:50	71,332.0	AM
<b>General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1335121-1</b>									
Fluoride	ND	mg/l	0.20	--	1	-	01/29/20 20:51	121,4500F-C	MM
<b>Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1335256-1</b>									
Chloride	ND	mg/l	0.500	--	1	-	01/30/20 03:01	44,300.0	DS
Sulfate	ND	mg/l	1.00	--	1	-	01/30/20 03:01	44,300.0	DS

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE STUDY

**Project Number:** 2170766

**Lab Number:** L2003757

**Report Date:** 02/19/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1334350-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1334407-2								
Turbidity	95		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1334410-2								
Solids, Total Dissolved	94		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1334413-2								
Nitrogen, Nitrate	98		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1334414-2								
Nitrogen, Nitrite	102		-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1334500-2								
Cyanide, Total	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1334943-2								
Alkalinity, Total	104		-		90-110	-		10

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE STUDY

**Project Number:** 2170766

**Lab Number:** L2003757

**Report Date:** 02/19/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 Batch: WG1335109-2					
Perchlorate	81	-	80-120	-	20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1335121-2					
Fluoride	88	-	78-115	-	
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1335256-2					
Chloride	99	-	90-110	-	
Sulfate	102	-	90-110	-	

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1334413-4 QC Sample: L2003757-01 Client ID: TW-1E-20												
Nitrogen, Nitrate	ND	4	3.8	95	-	-	-	-	83-113	-	-	6
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1334414-4 QC Sample: L2003757-01 Client ID: TW-1E-20												
Nitrogen, Nitrite	ND	4	4.0	100	-	-	-	-	80-120	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1334500-4 QC Sample: L2001984-02 Client ID: MS Sample												
Cyanide, Total	0.377	0.2	0.608	116	Q	-	-	-	90-110	-	-	30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1334943-4 QC Sample: L2003757-01 Client ID: TW-1E-20												
Alkalinity, Total	4.50	100	113	108	-	-	-	-	86-116	-	-	10
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1335109-3 WG1335109-4 QC Sample: L2002666-01 Client ID: MS Sample												
Perchlorate	ND	0.05	0.053	107	ND	91	-	-	80-120	NC	-	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1335121-4 QC Sample: L2003657-01 Client ID: MS Sample												
Fluoride	ND	2	1.9	96	-	-	-	-	69-124	-	-	13
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1335256-3 QC Sample: L2003757-01 Client ID: TW-1E-20												
Chloride	16.0	4	19.7	93	-	-	-	-	90-110	-	-	18
Sulfate	6.09	8	14.1	100	-	-	-	-	90-110	-	-	20

## Lab Duplicate Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1334350-2 QC Sample: L2003682-01 Client ID: DUP Sample						
pH	6.6	6.6	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1334405-1 QC Sample: L2003657-01 Client ID: DUP Sample						
Color, Apparent	ND	ND	A.P.C.U.	NC		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1334407-3 QC Sample: L2003657-01 Client ID: DUP Sample						
Turbidity	0.38	0.37	NTU	3		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1334408-2 QC Sample: L2003757-01 Client ID: TW-1E-20						
Odor	NO ODOR	NO ODOR	TON	NC		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1334410-3 QC Sample: L2003704-01 Client ID: DUP Sample						
Solids, Total Dissolved	400	400	mg/l	0		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1334413-3 QC Sample: L2003757-01 Client ID: TW-1E-20						
Nitrogen, Nitrate	ND	ND	mg/l	NC		6
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1334414-3 QC Sample: L2003757-01 Client ID: TW-1E-20						
Nitrogen, Nitrite	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1334500-3 QC Sample: L2001984-02 Client ID: DUP Sample						
Cyanide, Total	0.377	0.410	mg/l	8		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1334943-3 QC Sample: L2003757-01 Client ID: TW-1E-20						
Alkalinity, Total	4.50	4.60	mg CaCO3/L	2		10



## Lab Duplicate Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE STUDY

**Project Number:** 2170766

**Lab Number:** L2003757

**Report Date:** 02/19/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1335121-3 QC Sample: L2003657-01 Client ID: DUP Sample					
Fluoride	ND	ND	mg/l	NC	13
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1335256-4 QC Sample: L2003757-01 Client ID: TW-1E-20					
Chloride	16.0	16.0	mg/l	0	18
Sulfate	6.09	6.16	mg/l	1	20

**Project Name:** BARNSTABLE NEW SOURCE STUDY**Lab Number:** L2003757**Project Number:** 2170766**Report Date:** 02/19/20**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

Cooler	Custody Seal
A	Absent

**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2003757-01A	Vial unpreserved	A	NA		3.2	Y	Absent		SUB-RADON(4)
L2003757-01B	Vial unpreserved	A	NA		3.2	Y	Absent		SUB-RADON(4)
L2003757-01C	Vial HCl preserved	A	NA		3.2	Y	Absent		524.2(14)
L2003757-01D	Vial HCl preserved	A	NA		3.2	Y	Absent		524.2(14)
L2003757-01E	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		SUB-531.1(28)
L2003757-01F	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		SUB-515.3(14)
L2003757-01F1	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		SUB-515.3(14)
L2003757-01F2	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		SUB-515.3(14)
L2003757-01G	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		SUB-505(14),SUB-504.1(14)
L2003757-01G1	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		SUB-505(14),SUB-504.1(14)
L2003757-01G2	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		SUB-505(14),SUB-504.1(14)
L2003757-01G3	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		SUB-505(14),SUB-504.1(14)
L2003757-01H	Bacteria Cup Na2S2O3 preserved	A	NA		3.2	Y	Absent		T-COLI-C(1.25)
L2003757-01H1	Bacteria Cup Na2S2O3 preserved	A	NA		3.2	Y	Absent		T-COLI-C(1.25)
L2003757-01I	Bacteria Cup unpreserved	A	NA		3.2	Y	Absent		PERC-332(28)
L2003757-01J	Plastic 250ml unpreserved/No Headspace	A	NA		3.2	Y	Absent		ALK-T-2320(14)
L2003757-01K	Plastic 250ml unpreserved	A	NA		3.2	Y	Absent		PERC-332(28)
L2003757-01L	Plastic 250ml NaOH preserved	A	>12	>12	3.2	Y	Absent		TCN-4500(14)
L2003757-01M	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		CD-2008T(180),AG-UI(180),NI-2008T(180),CA-UI(180),ZN-UI(180),K-UI(180),BE-2008T(180),FE-UI(180),HARDU(180),MG-UI(180),AS-2008T(180),SE-2008T(180),HG-U(28),AL-UI(180),BA-2008T(180),NA-UI(180),MN-UI(180),TL-2008T(180),SB-2008T(180),CU-UI(180),PB-2008T(180),CR-2008T(180)
L2003757-01N	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		SO4-300(28),ARCHIVE()

**Project Name:** BARNSTABLE NEW SOURCE STUDY**Lab Number:** L2003757**Project Number:** 2170766**Report Date:** 02/19/20**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2003757-01N1	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		ARCHIVE()
L2003757-01O	Plastic 500ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		SUB-URANIUM(180)
L2003757-01P	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	3.2	N	Absent		A2-14DIOXANE-522(28)
L2003757-01P1	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	3.2	N	Absent		A2-14DIOXANE-522(28)
L2003757-01Q	Plastic 950ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		CD-2008T(180),AG-UI(180),CA-UI(180),ZN-UI(180),NI-2008T(180),K-UI(180),BE-2008T(180),FE-UI(180),HARDU(180),MG-UI(180),AS-2008T(180),HG-U(28),SE-2008T(180),MN-UI(180),AL-UI(180),BA-2008T(180),NA-UI(180),TL-2008T(180),SB-2008T(180),CU-UI(180),PB-2008T(180),CR-2008T(180)
L2003757-01Q1	Plastic 950ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		CD-2008T(180),AG-UI(180),CA-UI(180),ZN-UI(180),NI-2008T(180),K-UI(180),BE-2008T(180),FE-UI(180),HARDU(180),MG-UI(180),AS-2008T(180),HG-U(28),SE-2008T(180),MN-UI(180),AL-UI(180),BA-2008T(180),NA-UI(180),TL-2008T(180),SB-2008T(180),CU-UI(180),PB-2008T(180),CR-2008T(180)
L2003757-01R	Plastic 950ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2003757-01R1	Plastic 950ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2003757-01R2	Plastic 950ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2003757-01R3	Plastic 950ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2003757-01R4	Plastic 950ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		SUB-RA228(180),SUB-ALPHA/BETA(180),SUB-RA226(180)
L2003757-01S	Amber 950ml unpreserved	A	7	7	3.2	Y	Absent		COLOR-A-2120(2),ODOR-2150(1)
L2003757-01T	Amber 1000ml HCl preserved	A	<2	<2	3.2	Y	Absent		SUB-525.2(14)
L2003757-01T1	Amber 1000ml HCl preserved	A	<2	<2	3.2	Y	Absent		SUB-525.2(14)
L2003757-01U	Plastic 500ml unpreserved	A	7	7	3.2	Y	Absent		F-4500(28),CL-300(28),NO2-353(2),TURB-180(2),PH-4500(.01),NO3-353(2),TDS-2540(7)
L2003757-02A	Vial HCl preserved	A	NA		3.2	Y	Absent		524.2(14)
L2003757-02B	Vial HCl preserved	A	NA		3.2	Y	Absent		524.2(14)

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

## GLOSSARY

### Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)  Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### Footnotes

Report Format: Data Usability Report



**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Difference:** With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**PAH Total:** With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

**PFAS Total:** With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report



**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

**Data Qualifiers**

than 5x the RL. (Metals only.)

- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

**Project Name:** BARNSTABLE NEW SOURCE STUDY  
**Project Number:** 2170766

**Lab Number:** L2003757  
**Report Date:** 02/19/20

## REFERENCES

- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 16 Methods for the Determination of Organic Compounds in Drinking Water - Supplement II. EPA/600/R-92/129, August 1992.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 71 Determination of Perchlorate in Drinking Water by Ion Chromatography with Suppressed Conductivity and Electrospray Ionization Mass Spectrometry. EPA Method 332.0, EPA/600/R-05/049. Revision 1.0, March 2005.
- 120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624/624.1:** m/p-xylene, o-xylene

**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### Mansfield Facility

**SM 2540D:** TSS

**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**EPA TO-12** Non-methane organics

**EPA 3C** Fixed gases

**Biological Tissue Matrix:** EPA 3050B

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The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

**EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**

**EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.

**EPA 624.1:** Volatile Halocarbons & Aromatics,

**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.

**EPA 522.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

**EPA 245.1** Hg.

**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.





# CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 1/27/20

ALPHA Job #: L2003757

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

### Project Information

Project Name: **Barnstable New Source Study**

### Report Information - Data Deliverables

ADEx  EMAIL

### Billing Information

Same as Client info PO #:

### Client Information

Client: **Weston + Sampson**

Project Location: **Barnstable, MA**

Project #: **2170766**

Address: **55 Walkers Brook Drive**

Project Manager:

**Reading, MA**

ALPHA Quote #:

Phone: **978-532-1900**

### Turn-Around Time

Email: **mackinnk@nsei.com**

Standard  RUSH (only confirmed if pre-approved)

Date Due:

Additional Project Information:

### Regulatory Requirements & Project Information Requirements

Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

ANALYSIS		SAMPLE INFO	TOTAL # BOTTLES
VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input checked="" type="checkbox"/> 524.2	SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH		
METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15	METALS: <input type="checkbox"/> RCRA5 <input type="checkbox"/> RCRA8 <input type="checkbox"/> PPI3	Preservation <input type="checkbox"/> Lab to do	
EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only		
PCB <input type="checkbox"/> PEST	TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint		

*SEC. Cont.  
1,4-Dioxane  
Total Contam  
Perchlorate  
SOC's  
Lead*

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials							
		Date	Time									
03757-01	TN-1E-20	1/27/20	1305	DW	JAG	X						
02	TB-01	↓	↓		↓	X						

- Container Type**
- P= Plastic
  - A= Amber glass
  - V= Vial
  - G= Glass
  - B= Bacteria cup
  - C= Cube
  - O= Other
  - E= Encore
  - D= BOD Bottle
- Preservative**
- A= None
  - B= HCl
  - C= HNO<sub>3</sub>
  - D= H<sub>2</sub>SO<sub>4</sub>
  - E= NaOH
  - F= MeOH
  - G= NaHSO<sub>4</sub>
  - H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>
  - I= Ascorbic Acid
  - J= NH<sub>4</sub>Cl
  - K= Zn Acetate
  - O= Other


Container Type	Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	1/27/20 1645	<i>[Signature]</i>	1/27/20 1645
<i>[Signature]</i>	1/27/20 1700	<i>[Signature]</i>	1/27/20 1700
<i>[Signature]</i>	1/27/20 1900	<i>[Signature]</i>	1/27/20 1900

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.





		<b>Subcontract Chain of Custody</b> Eurofins US 110 South Hill St. South Bend, IN 46617			<b>Alpha Job Number</b> L2003757	
		<b>Client Information</b>		<b>Project Information</b>		<b>Regulatory Requirements/Report Limits</b>
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019  Phone: 508.439.5170 Email: nlewis@alphalab.com		Project Location: MA Project Manager: Nathalie Lewis		State/Federal Program: Regulatory Criteria:		
		<b>Turnaround &amp; Deliverables Information</b>				
		Due Date: Deliverables:				
<b>Project Specific Requirements and/or Report Requirements</b>						
Reference following Alpha Job Number on final report/deliverables: L2003757				Report to include Method Blank, LCS/LCSD:		
Additional Comments: Send all results/reports to subreports@alphalab.com						
Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC	
	TW-1E-20	01-27-20 13:05	DW	Gross Alpha/Beta; Radium 226; Radium 228		
		Relinquished By:	Date/Time:	Received By:	Date/Time:	
		<i>C. Tibeau</i>	<i>1/28/20</i>			
Form No: AL_subcoc						



# GRANITE STATE

## ANALYTICAL SERVICES, LLC.

22 Manchester Road, Unit 2, Derry, NH 03038

Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR RADON IN DRINKING WATER

**DATE PRINTED:** 01/30/2020  
**CLIENT NAME:** Alpha Analytical  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581

**SAMPLE ID#:** 2001-02812-001  
**SAMPLED BY:** Alpha Analytical  
**SAMPLE LOCATION:** L2003757  
 TW-1E-20  
 MA

**LOCATION:**  
**CLIENT JOB #**

**DATE AND TIME COLLECTED:** 01/27/2020 1:05PM  
**DATE AND TIME RECEIVED:** 01/28/2020 1:25PM  
**ANALYSIS PACKAGE:** Radon Water-Mass  
**RECEIPT TEMPERATURE:** ON ICE 15.4° CELSIUS

Legend	
Passes	✓

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date & Time Analyzed
Radon	402	pCi/L	✓		100	10000 pCi/L (MA Limit)	SM 7500 Rn B	TT-ME	01/29/20 10:05PM

The results presented in this report relate to the samples listed above in the condition in which they were received.  
 RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.  
 Data Qualifier (DQ) Flags: None

The State of New Hampshire has set an Advisory Limit of 10,000 pCi/L for Radon in Water.

Donald A. D'Anjou, Ph. D.  
 Laboratory Director

**\* MA Certified Analysis**

This analysis meets Commonwealth of Massachusetts requirements except as noted.  
 State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |  
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Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 01/30/2020  
**CLIENT NAME:** Alpha Analytical  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2001-02813-001  
**SAMPLED BY:** Alpha Analytical  
**SAMPLE ADDRESS:** L2003757  
 MA  
**MORE LOC INFO:**

Legend	
Passes	✔
Fails EPA Primary	✘
Fails EPA Secondary	⚠
Fails State Guideline	✘
Attention	⚠

**DATE AND TIME COLLECTED:** 01/27/2020 1:05PM  
**DATE AND TIME RECEIVED:** 01/28/2020 1:25PM  
**ANALYSIS PACKAGE:** Uranium-GSA  
**RECEIPT TEMPERATURE:** ON ICE 15.4° CELSIUS  
**CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Uranium*	<1	ug/L	✔		1	30 ug/L	EPA 200.8	CW-NH	01/29/20 4:56PM
Uranium	<0.67	pCi/L	✔		0.67	20 pCi/L	EPA 200.8 Calc.	CW-NH	01/29/20 4:56PM

The results presented in this report relate to the samples listed above in the condition in which they were received.  
 RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

\* MA Certified Analysis

\_\_\_\_\_  
 Donald A. D'Anjou, Ph. D.  
 Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.  
 State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |  
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22 Manchester Road, Unit 2, Derry, NH 03038

Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 02/13/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2001-02811-001  
**SAMPLED BY:** Alpha Analytical-Westborough  
**SAMPLE ADDRESS:** L2003757  
 TW-1E-20  
 MA

**DATE AND TIME COLLECTED:** 01/27/2020 1:05PM  
**DATE AND TIME RECEIVED:** 01/28/2020 1:25PM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** 15.4° CELSIUS  
**CLIENT JOB #**

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

**MORE LOC INFO:**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
1,2-Dibromo-3-chloropropane (DBCP)*	<0.02	ug/L	✓		0.02	0.2 ug/L	EPA 504.1	KV-NH	02/03/20 9:03PM
Date Extracted	-					No Limit	EPA 504.1	TA-NH	02/03/20 2:00PM
Ethylene Dibromide (EDB)*	<0.02	ug/L	✓		0.02	0.05 ug/L	EPA 504.1	KV-NH	02/03/20 9:03PM
Aroclor 1016 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	02/04/20 5:28AM
Aroclor 1221 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	02/04/20 5:28AM
Aroclor 1232 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	02/04/20 5:28AM
Aroclor 1242 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	02/04/20 5:28AM
Aroclor 1248 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	02/04/20 5:28AM
Aroclor 1254 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	02/04/20 5:28AM
Aroclor 1260 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	KV-NH	02/04/20 5:28AM
Chlordane*	<0.2	ug/L	✓		0.2	2 ug/L	EPA 505	KV-NH	02/04/20 5:28AM
Date Extracted	-					No Limit	EPA 505	TA-NH	02/03/20 2:00PM
Toxaphene*	<1.0	ug/L	✓		1.0	3 ug/L	EPA 505	KV-NH	02/04/20 5:28AM
2,4,5-TP (Silvex)*	<0.25	ug/L	✓		0.25	50 ug/L	EPA 515.3	KV-NH	01/30/20 9:18PM
2,4-D*	<1	ug/L	✓		1	70 ug/L	EPA 515.3	KV-NH	01/30/20 9:18PM
Dalapon*	<1	ug/L	✓		1	200 ug/L	EPA 515.3	KV-NH	01/30/20 9:18PM
Date Extracted	-					No Limit	EPA 515.3	TA-NH	01/30/20 8:45AM
Dicamba*	<0.18	ug/L			0.18	No Limit	EPA 515.3	KV-NH	01/30/20 9:18PM
Dinoseb*	<0.5	ug/L	✓		0.5	7 ug/L	EPA 515.3	KV-NH	01/30/20 9:18PM
Pentachlorophenol*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 515.3	KV-NH	01/30/20 9:18PM
Picloram*	<1.3	ug/L	✓		1.3	500 ug/L	EPA 515.3	KV-NH	01/30/20 9:18PM
2,4-Dichlorophenylacetic acid	101	%	✓			70-130%	EPA 515.3 - SS	KV-NH	01/30/20 9:18PM
Alachlor*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
Aldrin*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	02/07/20 5:44PM
Atrazine*	<0.1	ug/L	✓		0.1	3 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
Benzo(a)pyrene*	<0.1	ug/L	✓	S	0.1	0.2 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
Butachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	02/07/20 5:44PM
Date Extracted	-					No Limit	EPA 525.2	TA-NH	02/04/20 10:45AM
Di(2-ethylhexyl)adipate*	<0.6	ug/L	✓		0.6	400 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
Di(2-ethylhexyl)phthalate*	<3	ug/L	✓		3	6 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
Dieldrin*	<0.04	ug/L			0.04	No Limit	EPA 525.2	DD-NH	02/07/20 5:44PM



# GRANITE STATE

## ANALYTICAL SERVICES, LLC.

22 Manchester Road, Unit 2, Derry, NH 03038

Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 02/13/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581

**SAMPLE ID#:** 2001-02811-001  
**SAMPLED BY:** Alpha Analytical-Westborough

**SAMPLE ADDRESS:** L2003757  
 TW-1E-20  
 MA

**MORE LOC INFO:**

**DATE AND TIME COLLECTED:** 01/27/2020 1:05PM  
**DATE AND TIME RECEIVED:** 01/28/2020 1:25PM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** 15.4° CELSIUS

**CLIENT JOB #**

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Endrin*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
Heptachlor Epoxide*	<0.06	ug/L	✓		0.06	0.2 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
Heptachlor*	<0.04	ug/L	✓		0.04	0.4 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
Hexachlorobenzene*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
Hexachlorocyclopentadiene*	<0.1	ug/L	✓		0.1	50 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
Lindane*	<0.07	ug/L	✓		0.07	0.2 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
Methoxychlor*	<0.1	ug/L	✓		0.1	40 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
Metolachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	02/07/20 5:44PM
Metribuzin*	<0.1	ug/L	✓		0.1	70 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
Propachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	02/07/20 5:44PM
Simazine*	<0.1	ug/L	✓		0.1	4 ug/L	EPA 525.2	DD-NH	02/07/20 5:44PM
1,3-Dimethyl-2-nitrobenzene	99	%	✓			70-130%	EPA 525.2 - SS	DD-NH	02/07/20 5:44PM
Perylene-d12	102	%	✓			70-130%	EPA 525.2 - SS	DD-NH	02/07/20 5:44PM
Pyrene-d10	98	%	✓			70-130%	EPA 525.2 - SS	DD-NH	02/07/20 5:44PM
Triphenylphosphate	117	%	✓			70-130%	EPA 525.2 - SS	DD-NH	02/07/20 5:44PM
3-Hydroxycarbofuran*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	01/29/20 7:06AM
Aldicarb Sulfone*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	01/29/20 7:06AM
Aldicarb Sulfoxide*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	01/29/20 7:06AM
Aldicarb*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	01/29/20 7:06AM
Carbaryl*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	01/29/20 7:06AM
Carbofuran*	<0.9	ug/L	✓		0.9	40 ug/L	EPA 531.1	KV-NH	01/29/20 7:06AM
Date Extracted	-					No Limit	EPA 531.1	KV-NH	01/28/20 4:15PM
Methiocarb*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	01/29/20 7:06AM
Methomyl*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	01/29/20 7:06AM
Oxamyl (Vydate)*	<1	ug/L	✓		1	200 ug/L	EPA 531.1	KV-NH	01/29/20 7:06AM
Propoxur (Baygon)*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	01/29/20 7:06AM



# GRANITE STATE

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**DATE PRINTED:** 02/13/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581

**SAMPLE ID#:** 2001-02811-001  
**SAMPLED BY:** Alpha Analytical-Westborough

**SAMPLE ADDRESS:** L2003757  
 TW-1E-20  
 MA

**MORE LOC INFO:**

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	▼
Fails State Guideline	✕
Attention	⚠

**DATE AND TIME COLLECTED:** 01/27/2020 1:05PM  
**DATE AND TIME RECEIVED:** 01/28/2020 1:25PM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** 15.4° CELSIUS  
**CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
------------------	---------	------------	------------	---------	----	-------	--------	---------	--------------------

The results presented in this report relate to the samples listed above in the condition in which they were received.  
 RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.  
 Data Qualifier (DQ) Flags: S = Sample spike recovery outside control limits.

\* MA Certified Analysis

\_\_\_\_\_  
 Donald A. D'Anjou, Ph. D.  
 Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.  
 State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |  
 This certificate shall not be reproduced, except in full, without the written approval of Granite State Analytical Services, LLC



## LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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## STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-18-12
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

\*NELAP/TNI Recognized Accreditation Bodies



110 South Hill Street  
 South Bend, IN 46617  
 Tel: (574) 233-4777  
 Fax: (574) 233-8207  
 1 800 332 4345

## Laboratory Report

Client: Alpha Analytical  
 Attn: Nathalie Lewis  
 Eight Walkup Drive  
 Westborough, MA 01581

Report: 477037  
 Priority: Standard Written  
 Status: Final  
 PWS ID: Not Supplied

### Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4552020	TW-1E-20/L2003757	7110 B	01/27/20 13:05	Client	01/29/20 09:15
4552021	TW-1E-20/L2003757	7500-Ra B	01/27/20 13:05	Client	01/29/20 09:15
4552021	TW-1E-20/L2003757	7500-Ra D	01/27/20 13:05	Client	01/29/20 09:15

### Report Summary

Note: Sample containers were provided by the client.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Nathan Trowbridge at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.



Authorized Signature

Title

02/19/2020

Date

Client Name: Alpha Analytical

Report #: 477037

Client Name: Alpha Analytical

Report #: 477037

Sampling Point: TW-1E-20/L2003757

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
---	Gross Alpha	7110 B	15 *	0.92	3.0	-0.11 ± 0.82	pCi/L	01/31/20 14:00	02/14/20 01:11	4552020
---	Gross Beta	7110 B	50 *	1.4	4.0	0.13 ± 1.32	pCi/L	01/31/20 14:00	02/14/20 01:11	4552020
13982-63-3	Radium-226	7500-Ra B	---	0.37	1.0	0.18 ± 0.29	pCi/L	02/04/20 12:30	02/06/20 11:37	4552021
15262-20-1	Radium-228	7500-Ra D	---	0.40	1.0	<b>1.1 ± 0.4</b>	pCi/L	02/04/20 12:30	02/15/20 17:22	4552021
---	Combined Radium	calc.	5 *	0.40	1.0	<b>1.28 ± 0.53</b>	pCi/L	02/04/20 12:30	02/15/20 17:22	4552021

\*\* Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

## Lab Definitions

**Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC)** - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

**Internal Standards (IS)** - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

**Laboratory Duplicate (LD)** - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

**Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS)** - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

**Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB)** - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

**Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB)** - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

**Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD)** - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

**Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM)** - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

**Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV)** - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

**Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS)** - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

**Surrogate Standard (SS) / Surrogate Analyte (SUR)** - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.



# Radionuclide Report

**I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form**

PWS ID #:  City / Town:   
 PWS Name:  PWS Class: COM  NTNC  TNC

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information	Date Collected	Collected By
	TW-1E-20	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (R)aw <input type="checkbox"/> (S)ingle <input type="checkbox"/> (F)inished	01/27/20	Client
Routine or Special Sample <input type="checkbox"/> RS <input type="checkbox"/> SS		Original, Resubmitted or Confirmation Report <input type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation		
		If Resubmitted Report, list below: (1) Reason for Resubmission: <input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction (2) Collection Date of Original Sample:		
SAMPLE NOTES - Such as, if a Manifold/Multiple sample, list the source(s) that were on-line during sample collection.				

**II. ANALYTICAL LABORATORY INFORMATION:**

Primary Lab MA Cert. #:  Primary Lab Name:  Subcontracted? (Y/N)  Y

Was this sample composited by the Lab? <input type="checkbox"/>	<b>COMPOSITE SAMPLE NOTES</b> List the composited sources by DEP Source Code (XXXXXXX-XXX) and dates collected, up to four consecutive quarterly samples per single entry point.
LAB SAMPLE NOTES	

Contaminant	RESULT	Std Dev (+/-)	MCL	MDL	Lab Method	Date Analyzed	Lab Sample ID #	Analysis Lab MA Cert #	Analysis Lab Name
GROSS ALPHA (pCi/L)	ND	0.82		0.92	SM 7110B	02/14/2020	4552020	M-IN035	EEA
URANIUM - activity (pCi/L)									

Report Uranium result and MDL in (pCi/L) as analyzed, otherwise use formula to calculate [Uranium µg/L x 0.67 = Uranium pCi/L]. Check this box if result is calculated

ADJUSTED GROSS ALPHA (pCi/L)	---			The MCL for Adjusted Gross Alpha (Gross Alpha minus Uranium) is 15 pCi/L. A gross alpha measurement may be substituted for the uranium analysis, if the gross alpha result is equal to or less than 15 pCi/L. If gross alpha exceeds 15 pCi/L, uranium must also be measured.					
------------------------------	-----	--	--	---	--	--	--	--	--

URANIUM - mass (ug/L)									
Report Uranium result and MDL in (µg/L) as analyzed, otherwise use formula to calculate [Uranium pCi/L / 0.67 = Uranium µg/L]. Check this box if result is calculated <input type="checkbox"/>									

RADIUM-226 (pCi/L)	0.18	0.29		0.37	SM 7500RA-B	02/06/2020	4552021	M-IN035	EEA
RADIUM-228 (pCi/L)	1.1	0.4		0.40	SM 7500RA-D	02/15/2020	4552021	M-IN035	EEA
COMBINED RADIUM (pCi/L)	1.28	---	5	The MCL for Combined Radium (Radium-226 plus Radium-228) is 5 pCi/L. A gross alpha measurement may be substituted for the radium-226 analysis, if the gross alpha result is equal to or less than 5 pCi/L. If gross alpha exceeds 5 pCi/L, radium-226 must also be measured.					

GROSS BETA (pCi/L)	0.13	1.32	*	1.4	SM 7110B	02/14/2020	4552020	M-IN035	EEA
*The MCL for gross beta is 4 mrem/year. If gross beta exceeds 50 pCi/L, analysis of the sample for Photon Activity shall be performed to identify the major radioactive constituents. Gross Beta testing is optional, unless specifically required by DEP.									

RADON-222 (pCi/L)			**						
**Radon testing is optional, unless specifically required by DEP. The MA guideline is 10,000 pCi/L. The EPA has proposed a radon MCL of 300 - 4000 pCi/L.									

**Lab Report #: 477037**

Note: This report may not be reproduced, except in full, without written approval from EEA.

Note: The results presented relate only to the samples provided for analysis.

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.


Authorized Signature: *C.S. Manager*

Date: 02/19/2020

If not submitting these results electronically, mail TWO copies of this report to your DEP Regional Office no later than 10 days after the end of the month in which you received this report or no later than 10 days after the end of the reporting period, whichever is sooner.

DEP REVIEW STATUS (Initial & Date)	Review Comments	<input type="checkbox"/> WQTS Data Entered
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____		

391711

		<b>Subcontract Chain of Custody</b> Eurofins US 110 South Hill St. South Bend, IN 46617		Alpha Job Number L2003757	
<b>Client Information</b> Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 508.439.5170 Email: nlewis@alphalab.com		<b>Project Information</b> Project Location: MA Project Manager: Nathalie Lewis Turnaround & Deliverables Information Due Date: Deliverables:		<b>Regulatory Requirements/Report Limits</b> State/Federal Program: Regulatory Criteria:	
<b>Project Specific Requirements and/or Report Requirements</b> Reference following Alpha Job Number on final report/deliverables: L2003757 Report to include Method Blank, LCS/LCSD: Additional Comments: Send all results/reports to subreports@alphalab.com					
Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
TW-1E-20		01-27-20 13:05	DW	Gross Alpha/Beta; Radium 226; Radium 228 4552020 4552021 Client Provided Sample Container 5 PK2 AMBIENT 01292020 KO	
Relinquished By:		Date/Time:	Received By:		Date/Time:
C. T. Cohen		1/28/20	K. Du		1-29-2020 0915
Form No: AL_subcoc					

# Eurofins Eaton Analytical

## Run Log

Run ID: 271330 Method: 7110 B

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
LFB	4563000		RW	DU	02/12/2020 13:20	
LRB	4562999		RW	DU	02/12/2020 13:31	

Serial\_No:02192012:39



### QC Summary Report

Sample Type	Analyte	Method	MDA95	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
LFB	Gross Alpha	7110 B	1.01	--		26.8300	30.02	pCi/L	89	80 - 120	---	---	1.0	01/31/2020 14:00	02/12/2020 13:20	4563000
LFB	Gross Beta	7110 B	3.17	--		36.8800	39.1	pCi/L	94	80 - 120	---	---	1.0	01/31/2020 14:00	02/12/2020 13:20	4563000
LRB	Gross Alpha	7110 B	1.3	--		1.07		pCi/L	---	---	---	---	1.0	01/31/2020 14:00	02/12/2020 13:31	4562999
LRB	Gross Beta	7110 B	2.1	--		2.56		pCi/L	---	---	---	---	1.0	01/31/2020 14:00	02/12/2020 13:31	4562999

Serial\_No:02192012:39

# Eurofins Eaton Analytical

## Run Log

Run ID: 271420 Method: 7110 B

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	4552020	TW-1E-20/L2003757	DW	DU	02/14/2020 01:11	
MS	4562997	TW-1E-20/L2003757	DW	DU	02/14/2020 01:11	
MSD	4562998	TW-1E-20/L2003757	DW	DU	02/14/2020 01:11	
FS	4552020	TW-1E-20/L2003757	DW	DU	02/14/2020 01:11	
MS	4562997	TW-1E-20/L2003757	DW	DU	02/14/2020 01:11	
MSD	4562998	TW-1E-20/L2003757	DW	DU	02/14/2020 01:11	

Serial\_No:02192012:39

### QC Summary Report

Sample Type	Analyte	Method	MDA95	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Gross Alpha	7110 B	0.92	TW-1E-20/L2003757		-0.11		pCi/L	---	---	---	---	1.0	01/31/2020 14:00	02/14/2020 01:11	4562020
FS	Gross Beta	7110 B	1.4	TW-1E-20/L2003757		0.13		pCi/L	---	---	---	---	1.0	01/31/2020 14:00	02/14/2020 01:11	4562020
MS	Gross Alpha	7110 B	0.980	TW-1E-20/L2003757		24.5000	30.02	pCi/L	82	70 - 130	---	---	1.0	01/31/2020 14:00	02/14/2020 01:11	4562997
MS	Gross Beta	7110 B	2.41	TW-1E-20/L2003757		37.5300	39.1	pCi/L	96	70 - 130	---	---	1.0	01/31/2020 14:00	02/14/2020 01:11	4562997
MSD	Gross Alpha	7110 B	0.770	TW-1E-20/L2003757		28.5000	30.02	pCi/L	95	70 - 130	15	20	1.0	01/31/2020 14:00	02/14/2020 01:11	4562998
MSD	Gross Beta	7110 B	1.72	TW-1E-20/L2003757		40.7300	39.1	pCi/L	104	70 - 130	8.2	20	1.0	01/31/2020 14:00	02/14/2020 01:11	4562998

Serial\_No:02192012:39

## Eurofins Eaton Analytical

### Run Log

Run ID: 271112 Method: 7500-Ra B

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
LRB	4557766		RW	CI	02/06/2020 11:36	
LFB	4557767		RW	CI	02/06/2020 11:36	
FS	4552021	TW-1E-20/L2003757	DW	CI	02/06/2020 11:37	

Serial\_No:02192012:39

### QC Summary Report

Sample Type	Analyte	Method	MDA95	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
LRB	Radium-226	7500-Ra B	0.40	---		0.510		pCi/L	---	---	---	---	1.0	02/04/2020 12:30	02/06/2020 11:36	4557766
LFB	Radium-226	7500-Ra B	0.30	---		8.3800	9.2	pCi/L	91	90 - 110	---	---	1.0	02/04/2020 12:30	02/06/2020 11:36	4557767
FS	Radium-226	7500-Ra B	0.37	TW-1E-20/L2003757		0.18		pCi/L	---	---	---	---	1.0	02/04/2020 12:30	02/06/2020 11:37	4552021

Serial\_No:02192012:39

## Eurofins Eaton Analytical

### Run Log

Run ID: 271484 Method: 7500-Ra D

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	4552021	TW-1E-20/L2003757	DW	DU	02/15/2020 17:22	
LFB	4566141		RW	DU	02/15/2020 17:44	
LRB	4566140		RW	DU	02/15/2020 17:57	

Serial\_No:02192012:39

### QC Summary Report

Sample Type	Analyte	Method	MDA95	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Radium-228	7500-Ra D	0.40	TW-1E-20/L2003757		1.1		pCi/L	---	---	---	---	1.0	02/04/2020 12:30	02/15/2020 17:22	4552021
LFB	Radium-228	7500-Ra D	0.36	---		9.2600	8.14	pCi/L	114	80 - 120	---	---	1.0	02/04/2020 12:30	02/15/2020 17:44	4566141
LRB	Radium-228	7500-Ra D	0.46	---		-0.38		pCi/L	---	---	---	---	1.0	02/04/2020 12:30	02/15/2020 17:57	4566140

Serial\_No:02192012:39

## Sample Type Key

<u>Type (Abbr.)</u>	<u>Sample Type</u>	<u>Type (Abbr.)</u>	<u>Sample Type</u>
FS	Field Sample		
LFB	Laboratory Fortified Blank		
LRB	Laboratory Reagent Blank		
MS	Matrix Spike		
MSD	Matrix Spike Duplicate		

Serial\_No:02192012:39



END OF REPORT



## ANALYTICAL REPORT

Lab Number:	L2008594
Client:	Weston & Sampson 55 Walkers Brook Drive Suite 100 Reading, MA 01867
ATTN:	Kevin MacKinnon
Phone:	(978) 532-1900
Project Name:	BARNSTABLE NEW SOURCE
Project Number:	2170766
Report Date:	03/20/20

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L2008594-01	TW-1F-20	DW	BARNSTABLE, MA	02/26/20 15:00	02/26/20
L2008594-02	FIELD BLANK	DW	BARNSTABLE, MA	02/26/20 15:00	02/26/20
L2008594-03	TRIP BLANK	WATER	BARNSTABLE, MA	02/14/20 00:00	02/26/20

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

**HOLD POLICY** - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

---

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

### Case Narrative (continued)

#### Report Submission

March 20, 2020: This final report includes the results of all requested analyses.

March 04, 2020: This is a preliminary report.

The SOC and Radiological analyses were subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

#### Sample Receipt

L2008594-01: The analyses of Gross Alpha/beta and Radium were also subcontracted, at the client's request.

L2008594-01: The sample was received above the appropriate pH for the 1,4 Dioxane by Method 522 analysis.

L2008594-03: A sample identified as "TRIP BLANK" was received, but not listed on the Chain of Custody, and was not analyzed.

#### Volatile Organics by Method 524

The WG1345147-9 LCS recoveries, associated with L2008594-01, are above the acceptance criteria for trichloroethene (142%) and tetrachloroethene (148%); however, the associated sample is non-detect to the RL for these target analytes. The results of the original analysis are reported.

#### Perfluorinated Alkyl Acids

L2008594-01: The sample was re-extracted due to a failing surrogate in the original extraction. The results of the re-extraction are reported.

WG1349611-3: The LCSD recoveries, associated with L2008594-01, are within the 50-150% acceptance criteria for low level Perfluorinated Alkyl Acids.

#### Anions by Ion Chromatography

The WG1345373-3 MS recovery for chloride (86%), performed on L2008594-01, does not apply because the

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

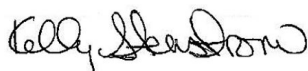
**Lab Number:** L2008594  
**Report Date:** 03/20/20

**Case Narrative (continued)**

sample concentration is greater than four times the spike amount added.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 03/20/20

# ORGANICS

# VOLATILES



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**SAMPLE RESULTS**

Lab ID: L2008594-01  
 Client ID: TW-1F-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/26/20 15:00  
 Date Received: 02/26/20  
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw  
 Analytical Method: 16,524.2  
 Analytical Date: 02/28/20 15:32  
 Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
Dichlorodifluoromethane	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	0.50	--	1
Bromomethane	ND		ug/l	0.50	--	1
Chloroethane	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	0.50	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
Methylene chloride	ND		ug/l	0.50	--	1
Methyl tert butyl ether	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.50	--	1
1,1-Dichloroethane	ND		ug/l	0.50	--	1
2,2-Dichloropropane	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Chloroform	5.9		ug/l	0.50	--	1
Bromochloromethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	0.50	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2008594**Project Number:** 2170766**Report Date:** 03/20/20**SAMPLE RESULTS**

Lab ID: L2008594-01  
 Client ID: TW-1F-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/26/20 15:00  
 Date Received: 02/26/20  
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
1,3-Dichloropropane	ND		ug/l	0.50	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,2-Dibromoethane	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
p/m-Xylene	ND		ug/l	0.50	--	1
o-Xylene	ND		ug/l	0.50	--	1
Styrene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
Bromoform	ND		ug/l	0.50	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
1,2,3-Trichloropropane	ND		ug/l	0.50	--	1
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	0.50	--	1
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--	1
o-Chlorotoluene	ND		ug/l	0.50	--	1
p-Chlorotoluene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	0.50	--	1
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
1,3-Dichlorobenzene	ND		ug/l	0.50	--	1
1,4-Dichlorobenzene	ND		ug/l	0.50	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	0.50	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--	1
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2008594**Project Number:** 2170766**Report Date:** 03/20/20**SAMPLE RESULTS**

Lab ID: L2008594-01

Date Collected: 02/26/20 15:00

Client ID: TW-1F-20

Date Received: 02/26/20

Sample Location: BARNSTABLE, MA

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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## Volatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	102		80-120
4-Bromofluorobenzene	94		80-120

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 02/28/20 10:17  
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1345147-10					
Dichlorodifluoromethane	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	0.50	--
Bromomethane	ND		ug/l	0.50	--
Chloroethane	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	0.50	--
1,1-Dichloroethene	ND		ug/l	0.50	--
Methylene chloride	ND		ug/l	0.50	--
Methyl tert butyl ether	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.50	--
1,1-Dichloroethane	ND		ug/l	0.50	--
2,2-Dichloropropane	ND		ug/l	0.50	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Chloroform	ND		ug/l	0.50	--
Bromochloromethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	0.50	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.50	--
1,3-Dichloropropane	ND		ug/l	0.50	--

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 02/28/20 10:17  
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1345147-10					
Tetrachloroethene	ND		ug/l	0.50	--
Dibromochloromethane	ND		ug/l	0.50	--
1,2-Dibromoethane	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Ethylbenzene	ND		ug/l	0.50	--
p/m-Xylene	ND		ug/l	0.50	--
o-Xylene	ND		ug/l	0.50	--
Styrene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
Bromoform	ND		ug/l	0.50	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
1,2,3-Trichloropropane	ND		ug/l	0.50	--
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--
n-Propylbenzene	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	0.50	--
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--
o-Chlorotoluene	ND		ug/l	0.50	--
p-Chlorotoluene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	0.50	--
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
1,3-Dichlorobenzene	ND		ug/l	0.50	--
1,4-Dichlorobenzene	ND		ug/l	0.50	--
n-Butylbenzene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	0.50	--
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 02/28/20 10:17  
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1345147-10					
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	101		80-120
4-Bromofluorobenzene	94		80-120

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE

**Lab Number:** L2008594

**Project Number:** 2170766

**Report Date:** 03/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1345147-9								
Dichlorodifluoromethane	102		-		70-130	-		20
Chloromethane	130		-		70-130	-		20
Vinyl chloride	122		-		70-130	-		20
Bromomethane	128		-		70-130	-		20
Chloroethane	118		-		70-130	-		20
Trichlorofluoromethane	112		-		70-130	-		20
1,1-Dichloroethene	122		-		70-130	-		20
Methylene chloride	122		-		70-130	-		20
Methyl tert butyl ether	88		-		70-130	-		20
trans-1,2-Dichloroethene	125		-		70-130	-		20
1,1-Dichloroethane	118		-		70-130	-		20
2,2-Dichloropropane	85		-		70-130	-		20
cis-1,2-Dichloroethene	125		-		70-130	-		20
Chloroform	118		-		70-130	-		20
Bromochloromethane	130		-		70-130	-		20
1,1,1-Trichloroethane	112		-		70-130	-		20
1,1-Dichloropropene	118		-		70-130	-		20
Carbon tetrachloride	122		-		70-130	-		20
1,2-Dichloroethane	112		-		70-130	-		20
Benzene	122		-		70-130	-		20
Trichloroethene	142	Q	-		70-130	-		20
1,2-Dichloropropane	115		-		70-130	-		20
Bromodichloromethane	110		-		70-130	-		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Lab Number: L2008594

Project Number: 2170766

Report Date: 03/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1345147-9								
Dibromomethane	110		-		70-130	-		20
cis-1,3-Dichloropropene	90		-		70-130	-		20
Toluene	122		-		70-130	-		20
trans-1,3-Dichloropropene	80		-		70-130	-		20
1,1,2-Trichloroethane	110		-		70-130	-		20
1,3-Dichloropropane	105		-		70-130	-		20
Tetrachloroethene	148	Q	-		70-130	-		20
Dibromochloromethane	130		-		70-130	-		20
1,2-Dibromoethane	108		-		70-130	-		20
Chlorobenzene	108		-		70-130	-		20
1,1,1,2-Tetrachloroethane	100		-		70-130	-		20
Ethylbenzene	102		-		70-130	-		20
p/m-Xylene	105		-		70-130	-		20
o-Xylene	108		-		70-130	-		20
Styrene	110		-		70-130	-		20
Isopropylbenzene	108		-		70-130	-		20
Bromoform	122		-		70-130	-		20
1,1,2,2-Tetrachloroethane	92		-		70-130	-		20
1,2,3-Trichloropropane	98		-		70-130	-		20
n-Propylbenzene	105		-		70-130	-		20
Bromobenzene	92		-		70-130	-		20
1,3,5-Trimethylbenzene	110		-		70-130	-		20
o-Chlorotoluene	102		-		70-130	-		20



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1345147-9								
p-Chlorotoluene	102		-		70-130	-		20
tert-Butylbenzene	110		-		70-130	-		20
1,2,4-Trimethylbenzene	105		-		70-130	-		20
sec-Butylbenzene	105		-		70-130	-		20
p-Isopropyltoluene	115		-		70-130	-		20
1,3-Dichlorobenzene	112		-		70-130	-		20
1,4-Dichlorobenzene	100		-		70-130	-		20
n-Butylbenzene	95		-		70-130	-		20
1,2-Dichlorobenzene	100		-		70-130	-		20
1,2-Dibromo-3-chloropropane	72		-		70-130	-		20
1,2,4-Trichlorobenzene	95		-		70-130	-		20
Hexachlorobutadiene	115		-		70-130	-		20
Naphthalene	90		-		70-130	-		20
1,2,3-Trichlorobenzene	98		-		70-130	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichlorobenzene-d4	101				80-120
4-Bromofluorobenzene	94				80-120



## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE

**Lab Number:** L2008594

**Project Number:** 2170766

**Report Date:** 03/20/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01    QC Batch ID: WG1345147-6    QC Sample: L2008100-01    Client ID: MS Sample												
Dichlorodifluoromethane	ND	4	4.6	115		-	-		70-130	-		20
Chloromethane	ND	4	4.8	120		-	-		70-130	-		20
Vinyl chloride	ND	4	4.6	115		-	-		70-130	-		20
Bromomethane	ND	4	3.7	92		-	-		70-130	-		20
Chloroethane	ND	4	4.3	108		-	-		70-130	-		20
Trichlorofluoromethane	ND	4	4.7	118		-	-		70-130	-		20
1,1-Dichloroethene	ND	4	4.6	115		-	-		70-130	-		20
Methylene chloride	ND	4	4.7	118		-	-		70-130	-		20
Methyl tert butyl ether	ND	4	3.3	82		-	-		70-130	-		20
trans-1,2-Dichloroethene	ND	4	4.6	115		-	-		70-130	-		20
1,1-Dichloroethane	ND	4	4.2	105		-	-		70-130	-		20
2,2-Dichloropropane	ND	4	2.7	68	Q	-	-		70-130	-		20
cis-1,2-Dichloroethene	ND	4	4.6	115		-	-		70-130	-		20
Chloroform	ND	4	4.3	108		-	-		70-130	-		20
Bromochloromethane	ND	4	5.1	128		-	-		70-130	-		20
1,1,1-Trichloroethane	ND	4	4.0	100		-	-		70-130	-		20
1,1-Dichloropropene	ND	4	4.3	108		-	-		70-130	-		20
Carbon tetrachloride	ND	4	4.5	113		-	-		70-130	-		20
1,2-Dichloroethane	ND	4	4.3	108		-	-		70-130	-		20
Benzene	ND	4	4.4	110		-	-		70-130	-		20
Trichloroethene	ND	4	5.2	130		-	-		70-130	-		20
1,2-Dichloropropane	ND	4	4.3	108		-	-		70-130	-		20
Bromodichloromethane	ND	4	4.1	103		-	-		70-130	-		20
Dibromomethane	ND	4	4.4	110		-	-		70-130	-		20

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE

**Lab Number:** L2008594

**Project Number:** 2170766

**Report Date:** 03/20/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01    QC Batch ID: WG1345147-6    QC Sample: L2008100-01    Client ID: MS Sample												
cis-1,3-Dichloropropene	ND	4	3.3	82		-	-		70-130	-		20
Toluene	ND	4	4.4	110		-	-		70-130	-		20
trans-1,3-Dichloropropene	ND	4	2.9	72		-	-		70-130	-		20
1,1,2-Trichloroethane	ND	4	4.3	108		-	-		70-130	-		20
1,3-Dichloropropane	ND	4	4.1	103		-	-		70-130	-		20
Tetrachloroethene	ND	4	5.4	135	Q	-	-		70-130	-		20
Dibromochloromethane	ND	4	4.7	118		-	-		70-130	-		20
1,2-Dibromoethane	ND	4	4.1	103		-	-		70-130	-		20
Chlorobenzene	ND	4	4.0	100		-	-		70-130	-		20
1,1,1,2-Tetrachloroethane	ND	4	3.6	90		-	-		70-130	-		20
Ethylbenzene	ND	4	3.8	95		-	-		70-130	-		20
p/m-Xylene	ND	8	7.6	95		-	-		70-130	-		20
o-Xylene	ND	4	3.6	90		-	-		70-130	-		20
Styrene	ND	4	3.8	95		-	-		70-130	-		20
Isopropylbenzene	ND	4	3.9	98		-	-		70-130	-		20
Bromoform	ND	4	4.5	113		-	-		70-130	-		20
1,1,2,2-Tetrachloroethane	ND	4	3.6	90		-	-		70-130	-		20
1,2,3-Trichloropropane	ND	4	3.8	95		-	-		70-130	-		20
n-Propylbenzene	ND	4	3.8	95		-	-		70-130	-		20
Bromobenzene	ND	4	3.6	90		-	-		70-130	-		20
1,3,5-Trimethylbenzene	ND	4	3.8	95		-	-		70-130	-		20
o-Chlorotoluene	ND	4	3.8	95		-	-		70-130	-		20
p-Chlorotoluene	ND	4	3.9	98		-	-		70-130	-		20
tert-Butylbenzene	ND	4	4.1	103		-	-		70-130	-		20

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1345147-6 QC Sample: L2008100-01 Client ID: MS Sample												
1,2,4-Trimethylbenzene	ND	4	3.8	95		-	-		70-130	-		20
sec-Butylbenzene	ND	4	4.0	100		-	-		70-130	-		20
p-Isopropyltoluene	ND	4	4.1	103		-	-		70-130	-		20
1,3-Dichlorobenzene	ND	4	4.2	105		-	-		70-130	-		20
1,4-Dichlorobenzene	ND	4	3.8	95		-	-		70-130	-		20
n-Butylbenzene	ND	4	3.3	82		-	-		70-130	-		20
1,2-Dichlorobenzene	ND	4	3.7	92		-	-		70-130	-		20
1,2-Dibromo-3-chloropropane	ND	4	2.6	65	Q	-	-		70-130	-		20
1,2,4-Trichlorobenzene	ND	4	3.6	90		-	-		70-130	-		20
Hexachlorobutadiene	ND	4	4.1	103		-	-		70-130	-		20
Naphthalene	ND	4	3.3	82		-	-		70-130	-		20
1,2,3-Trichlorobenzene	ND	4	3.7	92		-	-		70-130	-		20

<i>Surrogate</i>	<i>MS % Recovery</i>	<i>Qualifier</i>	<i>MSD % Recovery</i>	<i>Qualifier</i>	<i>Acceptance Criteria</i>
1,2-Dichlorobenzene-d4	102				80-120
4-Bromofluorobenzene	97				80-120

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2008594

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1345147-5 QC Sample: L2008099-01 Client ID: DUP Sample						
Dichlorodifluoromethane	ND	ND	ug/l	NC		20
Chloromethane	ND	ND	ug/l	NC		20
Vinyl chloride	ND	ND	ug/l	NC		20
Bromomethane	ND	ND	ug/l	NC		20
Chloroethane	ND	ND	ug/l	NC		20
Trichlorofluoromethane	ND	ND	ug/l	NC		20
1,1-Dichloroethene	ND	ND	ug/l	NC		20
Methylene chloride	ND	ND	ug/l	NC		20
Methyl tert butyl ether	ND	ND	ug/l	NC		20
trans-1,2-Dichloroethene	ND	ND	ug/l	NC		20
1,1-Dichloroethane	ND	ND	ug/l	NC		20
2,2-Dichloropropane	ND	ND	ug/l	NC		20
cis-1,2-Dichloroethene	ND	ND	ug/l	NC		20
Chloroform	ND	ND	ug/l	NC		20
Bromochloromethane	ND	ND	ug/l	NC		20
1,1,1-Trichloroethane	ND	ND	ug/l	NC		20
1,1-Dichloropropene	ND	ND	ug/l	NC		20
Carbon tetrachloride	ND	ND	ug/l	NC		20
1,2-Dichloroethane	ND	ND	ug/l	NC		20
Benzene	ND	ND	ug/l	NC		20
Trichloroethene	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2008594

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1345147-5 QC Sample: L2008099-01 Client ID: DUP Sample						
1,2-Dichloropropane	ND	ND	ug/l	NC		20
Bromodichloromethane	ND	ND	ug/l	NC		20
Dibromomethane	ND	ND	ug/l	NC		20
cis-1,3-Dichloropropene	ND	ND	ug/l	NC		20
Toluene	ND	ND	ug/l	NC		20
trans-1,3-Dichloropropene	ND	ND	ug/l	NC		20
1,1,2-Trichloroethane	ND	ND	ug/l	NC		20
1,3-Dichloropropane	ND	ND	ug/l	NC		20
Tetrachloroethene	ND	ND	ug/l	NC		20
Dibromochloromethane	ND	ND	ug/l	NC		20
1,2-Dibromoethane	ND	ND	ug/l	NC		20
Chlorobenzene	ND	ND	ug/l	NC		20
1,1,1,2-Tetrachloroethane	ND	ND	ug/l	NC		20
Ethylbenzene	ND	ND	ug/l	NC		20
p/m-Xylene	ND	ND	ug/l	NC		20
o-Xylene	ND	ND	ug/l	NC		20
Styrene	ND	ND	ug/l	NC		20
Isopropylbenzene	ND	ND	ug/l	NC		20
Bromoform	ND	ND	ug/l	NC		20
1,1,2,2-Tetrachloroethane	ND	ND	ug/l	NC		20
1,2,3-Trichloropropane	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2008594

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1345147-5 QC Sample: L2008099-01 Client ID: DUP Sample						
n-Propylbenzene	ND	ND	ug/l	NC		20
Xylene (Total) <sup>1</sup>	ND	ND	ug/l	NC		20
Bromobenzene	ND	ND	ug/l	NC		20
Trihalomethanes, Total	ND	ND	ug/l	NC		20
1,3,5-Trimethylbenzene	ND	ND	ug/l	NC		20
o-Chlorotoluene	ND	ND	ug/l	NC		20
p-Chlorotoluene	ND	ND	ug/l	NC		20
tert-Butylbenzene	ND	ND	ug/l	NC		20
1,2,4-Trimethylbenzene	ND	ND	ug/l	NC		20
sec-Butylbenzene	ND	ND	ug/l	NC		20
p-Isopropyltoluene	ND	ND	ug/l	NC		20
1,3-Dichlorobenzene	ND	ND	ug/l	NC		20
1,4-Dichlorobenzene	ND	ND	ug/l	NC		20
n-Butylbenzene	ND	ND	ug/l	NC		20
1,2-Dichlorobenzene	ND	ND	ug/l	NC		20
1,2-Dibromo-3-chloropropane	ND	ND	ug/l	NC		20
1,2,4-Trichlorobenzene	ND	ND	ug/l	NC		20
Hexachlorobutadiene	ND	ND	ug/l	NC		20
Naphthalene	ND	ND	ug/l	NC		20
1,2,3-Trichlorobenzene	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2008594

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1345147-5 QC Sample: L2008099-01 Client ID: DUP Sample						

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	103		104		80-120
4-Bromofluorobenzene	94		94		80-120



# SEMIVOLATILES

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**SAMPLE RESULTS**

Lab ID: L2008594-01  
 Client ID: TW-1F-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/26/20 15:00  
 Date Received: 02/26/20  
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw  
 Analytical Method: 120,522  
 Analytical Date: 03/02/20 14:44  
 Analyst: PS

Extraction Method: EPA 522  
 Extraction Date: 02/27/20 11:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144	--	1
Surrogate			% Recovery	Qualifier	Acceptance Criteria	
1,4-Dioxane-d8			76		70-130	

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**SAMPLE RESULTS**

Lab ID: L2008594-01 RE  
 Client ID: TW-1F-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/26/20 15:00  
 Date Received: 02/26/20  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Dw  
 Analytical Method: 133,537.1  
 Analytical Date: 03/12/20 11:39  
 Analyst: PE

Extraction Method: EPA 537  
 Extraction Date: 03/11/20 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab</b>						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.76	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.76	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	3.52	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.76	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.76	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.76	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.76	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.76	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.76	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.76	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.76	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.76	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.76	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.76	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.76	--	1
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.76	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.76	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.76	--	1
PFOA/PFOS, Total	ND		ng/l	1.76	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	87		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	84		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	84		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85		70-130

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**SAMPLE RESULTS**

Lab ID: L2008594-02  
 Client ID: FIELD BLANK  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/26/20 15:00  
 Date Received: 02/26/20  
 Field Prep: Not Specified

## Sample Depth:

Matrix: Dw  
 Analytical Method: 133,537.1  
 Analytical Date: 03/09/20 21:50  
 Analyst: SH

Extraction Method: EPA 537  
 Extraction Date: 02/28/20 10:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab</b>						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.04	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.04	--	1
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	4.08	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.04	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.04	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.04	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.04	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.04	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.04	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.04	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.04	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.04	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.04	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.04	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.04	--	1
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.04	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.04	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.04	--	1
PFOA/PFOS, Total	ND		ng/l	2.04	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	87		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	96		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	88		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	95		70-130

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 120,522  
Analytical Date: 03/02/20 09:53  
Analyst: PS

Extraction Method: EPA 522  
Extraction Date: 02/27/20 11:06

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01 Batch: WG1344962-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	79		70-130

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 133,537.1  
Analytical Date: 03/09/20 17:41  
Analyst: SH

Extraction Method: EPA 537  
Extraction Date: 02/28/20 10:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 02 Batch: WG1345311-1					
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	4.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--
11-Chloroeicosfluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--
PFOA/PFOS, Total	ND		ng/l	2.00	--

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 133,537.1  
Analytical Date: 03/09/20 17:41  
Analyst: SH

Extraction Method: EPA 537  
Extraction Date: 02/28/20 10:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 02 Batch: WG1345311-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	96		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	102		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	91		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	100		70-130

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 133,537.1  
Analytical Date: 03/12/20 11:13  
Analyst: PE

Extraction Method: EPA 537  
Extraction Date: 03/11/20 07:20

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01 Batch: WG1349611-1					
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	4.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--
PFOA/PFOS, Total	ND		ng/l	2.00	--



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 133,537.1  
Analytical Date: 03/12/20 11:13  
Analyst: PE

Extraction Method: EPA 537  
Extraction Date: 03/11/20 07:20

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01 Batch: WG1349611-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	74		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	76		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	86		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	84		70-130

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01 Batch: WG1344962-2 WG1344962-3								
1,4-Dioxane	109		110		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	80		86		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Lab Number: L2008594

Project Number: 2170766

Report Date: 03/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 02 Batch: WG1345311-2 WG1345311-3								
Perfluorobutanesulfonic Acid (PFBS)	96		94		70-130	2		30
Perfluorohexanoic Acid (PFHxA)	89		90		70-130	1		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	92		92		70-130	0		30
Perfluoroheptanoic Acid (PFHpA)	98		96		70-130	2		30
Perfluorohexanesulfonic Acid (PFHxS)	94		90		70-130	4		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	108		108		70-130	0		30
Perfluorooctanoic Acid (PFOA)	103		108		70-130	5		30
Perfluorononanoic Acid (PFNA)	97		100		70-130	3		30
Perfluorooctanesulfonic Acid (PFOS)	86		80		70-130	7		30
Perfluorodecanoic Acid (PFDA)	94		82		70-130	14		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	85		87		70-130	2		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	76		83		70-130	9		30
Perfluoroundecanoic Acid (PFUnA)	93		83		70-130	11		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	78		82		70-130	5		30
Perfluorododecanoic Acid (PFDoA)	100		91		70-130	9		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	79		78		70-130	1		30
Perfluorotridecanoic Acid (PFTTrDA)	98		88		70-130	11		30
Perfluorotetradecanoic Acid (PFTA)	112		106		70-130	6		30

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 02 Batch: WG1345311-2 WG1345311-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	92		89		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	101		98		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	90		89		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		90		70-130

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Lab Number: L2008594

Project Number: 2170766

Report Date: 03/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01 Batch: WG1349611-2 WG1349611-3								
Perfluorobutanesulfonic Acid (PFBS)	92		80		70-130	14		30
Perfluorohexanoic Acid (PFHxA)	100		80		70-130	22		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	94		74		70-130	24		30
Perfluoroheptanoic Acid (PFHpA)	106		88		70-130	19		30
Perfluorohexanesulfonic Acid (PFHxS)	78		82		70-130	5		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	120		98		70-130	20		30
Perfluorooctanoic Acid (PFOA)	120		94		70-130	24		30
Perfluorononanoic Acid (PFNA)	106		92		70-130	14		30
Perfluorooctanesulfonic Acid (PFOS)	80		80		70-130	0		30
Perfluorodecanoic Acid (PFDA)	102		82		70-130	22		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	84		78		70-130	7		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	90		82		70-130	9		30
Perfluoroundecanoic Acid (PFUnA)	94		82		70-130	14		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	82		72		70-130	13		30
Perfluorododecanoic Acid (PFDoA)	102		76		70-130	29		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	82		68		70-130	19		30
Perfluorotridecanoic Acid (PFTTrDA)	104		80		70-130	26		30
Perfluorotetradecanoic Acid (PFTA)	130		102		70-130	24		30

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2008594

Report Date: 03/20/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01 Batch: WG1349611-2 WG1349611-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	94		79		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	93		80		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	87		75		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	92		84		70-130

## METALS

Project Name: BARNSTABLE NEW SOURCE

Lab Number: L2008594

Project Number: 2170766

Report Date: 03/20/20

## SAMPLE RESULTS

Lab ID: L2008594-01  
 Client ID: TW-1F-20  
 Sample Location: BARNSTABLE, MA

Date Collected: 02/26/20 15:00  
 Date Received: 02/26/20  
 Field Prep: Not Specified

Sample Depth:  
 Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	ND		mg/l	0.100	--	1	03/04/20 00:29	03/04/20 12:30	EPA 3005A	19,200.7	BV
Antimony, Total	ND		mg/l	0.0040	--	1	03/03/20 12:49	03/04/20 09:49	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.0010	--	1	03/03/20 12:49	03/04/20 09:49	EPA 3005A	3,200.8	AM
Barium, Total	0.0040		mg/l	0.0010	--	1	03/03/20 12:49	03/04/20 09:49	EPA 3005A	3,200.8	AM
Beryllium, Total	ND		mg/l	0.0010	--	1	03/03/20 12:49	03/04/20 09:49	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.0002	--	1	03/03/20 12:49	03/04/20 09:49	EPA 3005A	3,200.8	AM
Calcium, Total	1.56		mg/l	0.100	--	1	03/04/20 00:29	03/04/20 12:30	EPA 3005A	19,200.7	BV
Chromium, Total	ND		mg/l	0.0010	--	1	03/03/20 12:49	03/04/20 09:49	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.010	--	1	03/04/20 00:29	03/04/20 12:30	EPA 3005A	19,200.7	BV
Iron, Total	0.194		mg/l	0.050	--	1	03/04/20 00:29	03/04/20 12:30	EPA 3005A	19,200.7	BV
Lead, Total	ND		mg/l	0.0010	--	1	03/03/20 12:49	03/04/20 09:49	EPA 3005A	3,200.8	AM
Magnesium, Total	1.48		mg/l	0.100	--	1	03/04/20 00:29	03/04/20 12:30	EPA 3005A	19,200.7	BV
Manganese, Total	0.028		mg/l	0.010	--	1	03/04/20 00:29	03/04/20 12:30	EPA 3005A	19,200.7	BV
Mercury, Total	ND		mg/l	0.0002	--	1	03/03/20 13:05	03/03/20 16:23	EPA 245.1	3,245.1	AL
Nickel, Total	ND		mg/l	0.0020	--	1	03/03/20 12:49	03/04/20 09:49	EPA 3005A	3,200.8	AM
Potassium, Total	ND		mg/l	2.50	--	1	03/04/20 00:29	03/04/20 12:30	EPA 3005A	19,200.7	BV
Selenium, Total	ND		mg/l	0.0050	--	1	03/03/20 12:49	03/04/20 09:49	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.007	--	1	03/04/20 00:29	03/04/20 12:30	EPA 3005A	19,200.7	BV
Sodium, Total	11.6		mg/l	2.00	--	1	03/04/20 00:29	03/04/20 12:30	EPA 3005A	19,200.7	BV
Thallium, Total	ND		mg/l	0.0010	--	1	03/03/20 12:49	03/04/20 09:49	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.050	--	1	03/04/20 00:29	03/04/20 12:30	EPA 3005A	19,200.7	BV
<b>Total Hardness by SM 2340B - Mansfield Lab</b>											
Hardness	10.0		mg/l	0.660	NA	1	03/04/20 00:29	03/04/20 12:30	EPA 3005A	19,200.7	BV





**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

### Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1346227-1									
Aluminum, Total	ND	mg/l	0.100	--	1	03/04/20 00:29	03/04/20 11:14	19,200.7	LC
Calcium, Total	ND	mg/l	0.100	--	1	03/04/20 00:29	03/04/20 11:14	19,200.7	LC
Copper, Total	ND	mg/l	0.010	--	1	03/04/20 00:29	03/04/20 11:14	19,200.7	LC
Iron, Total	ND	mg/l	0.050	--	1	03/04/20 00:29	03/04/20 11:14	19,200.7	LC
Magnesium, Total	ND	mg/l	0.100	--	1	03/04/20 00:29	03/04/20 11:14	19,200.7	LC
Manganese, Total	ND	mg/l	0.010	--	1	03/04/20 00:29	03/04/20 11:14	19,200.7	LC
Potassium, Total	ND	mg/l	2.50	--	1	03/04/20 00:29	03/04/20 11:14	19,200.7	LC
Silver, Total	ND	mg/l	0.007	--	1	03/04/20 00:29	03/04/20 11:14	19,200.7	LC
Sodium, Total	ND	mg/l	2.00	--	1	03/04/20 00:29	03/04/20 11:14	19,200.7	LC
Zinc, Total	ND	mg/l	0.050	--	1	03/04/20 00:29	03/04/20 11:14	19,200.7	LC

#### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1346227-1									
Hardness	ND	mg/l	0.660	NA	1	03/04/20 00:29	03/04/20 11:14	19,200.7	LC

#### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1346252-1									
Antimony, Total	ND	mg/l	0.0040	--	1	03/03/20 12:49	03/04/20 09:11	3,200.8	AM
Arsenic, Total	ND	mg/l	0.0010	--	1	03/03/20 12:49	03/04/20 09:11	3,200.8	AM
Barium, Total	ND	mg/l	0.0010	--	1	03/03/20 12:49	03/04/20 09:11	3,200.8	AM
Beryllium, Total	ND	mg/l	0.0010	--	1	03/03/20 12:49	03/04/20 09:11	3,200.8	AM
Cadmium, Total	ND	mg/l	0.0002	--	1	03/03/20 12:49	03/04/20 09:11	3,200.8	AM
Chromium, Total	ND	mg/l	0.0010	--	1	03/03/20 12:49	03/04/20 09:11	3,200.8	AM



Project Name: BARNSTABLE NEW SOURCE

Lab Number: L2008594

Project Number: 2170766

Report Date: 03/20/20

### Method Blank Analysis Batch Quality Control

Lead, Total	ND	mg/l	0.0010	--	1	03/03/20 12:49	03/04/20 09:11	3,200.8	AM
Nickel, Total	ND	mg/l	0.0020	--	1	03/03/20 12:49	03/04/20 09:11	3,200.8	AM
Selenium, Total	ND	mg/l	0.0050	--	1	03/03/20 12:49	03/04/20 09:11	3,200.8	AM
Thallium, Total	ND	mg/l	0.0010	--	1	03/03/20 12:49	03/04/20 09:11	3,200.8	AM

#### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1346611-1									
Mercury, Total	ND	mg/l	0.0002	--	1	03/03/20 13:05	03/03/20 16:20	3,245.1	AL

#### Prep Information

Digestion Method: EPA 245.1

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE

**Lab Number:** L2008594

**Project Number:** 2170766

**Report Date:** 03/20/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1346227-2								
Aluminum, Total	102		-		85-115	-		
Calcium, Total	102		-		85-115	-		
Copper, Total	95		-		85-115	-		
Iron, Total	104		-		85-115	-		
Magnesium, Total	101		-		85-115	-		
Manganese, Total	94		-		85-115	-		
Potassium, Total	103		-		85-115	-		
Silver, Total	99		-		85-115	-		
Sodium, Total	106		-		85-115	-		
Zinc, Total	106		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1346227-2								
Hardness	101		-		85-115	-		

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE

**Project Number:** 2170766

**Lab Number:** L2008594

**Report Date:** 03/20/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1346252-2					
Antimony, Total	88	-	85-115	-	
Arsenic, Total	88	-	85-115	-	
Barium, Total	97	-	85-115	-	
Beryllium, Total	99	-	85-115	-	
Cadmium, Total	109	-	85-115	-	
Chromium, Total	95	-	85-115	-	
Lead, Total	89	-	85-115	-	
Nickel, Total	100	-	85-115	-	
Selenium, Total	91	-	85-115	-	
Thallium, Total	85	-	85-115	-	
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1346611-2					
Mercury, Total	98	-	85-115	-	

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1346227-3    QC Sample: L2008401-01    Client ID: MS Sample												
Aluminum, Total	0.490	2	2.58	104		-	-		75-125	-		20
Calcium, Total	701	10	722	210	Q	-	-		75-125	-		20
Copper, Total	ND	0.25	0.240	96		-	-		75-125	-		20
Iron, Total	0.106	1	1.12	101		-	-		75-125	-		20
Magnesium, Total	0.113	10	9.11	90		-	-		75-125	-		20
Manganese, Total	ND	0.5	0.461	92		-	-		75-125	-		20
Potassium, Total	115	10	127	120		-	-		75-125	-		20
Silver, Total	ND	0.05	0.049	98		-	-		75-125	-		20
Sodium, Total	84.1	10	95.5	114		-	-		75-125	-		20
Zinc, Total	ND	0.5	0.525	105		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1346227-3    QC Sample: L2008401-01    Client ID: MS Sample												
Hardness	1750	66.2	1840	136	Q	-	-		75-125	-		20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1346252-3    QC Sample: L2008564-07    Client ID: MS Sample									
Antimony, Total	ND	0.5	0.3900	78	-	-	70-130	-	20
Arsenic, Total	ND	0.24	0.2119	88	-	-	70-130	-	20
Barium, Total	0.0167	2	1.902	94	-	-	70-130	-	20
Beryllium, Total	ND	0.05	0.0485	97	-	-	70-130	-	20
Cadmium, Total	0.0015	0.051	0.0567	108	-	-	70-130	-	20
Chromium, Total	ND	0.2	0.1857	93	-	-	70-130	-	20
Lead, Total	0.0183	1.02	0.9662	95	-	-	70-130	-	20
Nickel, Total	0.2277	0.5	0.7029	95	-	-	70-130	-	20
Selenium, Total	ND	0.24	0.2405	100	-	-	70-130	-	20
Thallium, Total	ND	0.24	0.2201	92	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1346611-3    QC Sample: L2008594-01    Client ID: TW-1F-20									
Mercury, Total	ND	0.005	0.0048	96	-	-	70-130	-	20

## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2008594

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1346227-4 QC Sample: L2008401-01 Client ID: DUP Sample</b>						
Calcium, Total	701	703	mg/l	0		20
Magnesium, Total	0.113	0.116	mg/l	3		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1346252-4 QC Sample: L2008564-07 Client ID: DUP Sample</b>						
Lead, Total	0.0183	0.0192	mg/l	5		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1346611-4 QC Sample: L2008594-01 Client ID: TW-1F-20</b>						
Mercury, Total	ND	ND	mg/l	NC		20

# **INORGANICS & MISCELLANEOUS**



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**SAMPLE RESULTS**

**Lab ID:** L2008594-01  
**Client ID:** TW-1F-20  
**Sample Location:** BARNSTABLE, MA

**Date Collected:** 02/26/20 15:00  
**Date Received:** 02/26/20  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Perchlorate by IC-MS-MS - Westborough Lab</b>										
Perchlorate	0.084		ug/l	0.050	--	1	-	03/03/20 19:34	71,332.0	AM
<b>General Chemistry - Westborough Lab</b>										
Turbidity	ND		NTU	0.20	--	1	-	02/26/20 23:05	44,180.1	AS
Odor @ 60 C	NO ODOR		TON	1	--	1	-	02/26/20 21:39	121,2150B	AS
Color, Apparent	ND		A.P.C.U.	5.0	--	1	-	02/26/20 21:41	121,2120B	AS
Alkalinity, Total	4.40		mg CaCO3/L	2.00	NA	1	-	02/27/20 05:11	121,2320B	MA
Solids, Total Dissolved	25.		mg/l	10	--	1	-	02/27/20 11:30	121,2540C	DW
Cyanide, Total	ND		mg/l	0.005	--	1	02/27/20 12:35	02/27/20 15:26	121,4500CN-CE	LH
Fluoride	ND		mg/l	0.20	--	1	-	02/28/20 17:00	121,4500F-C	MM
pH (H)	5.6		SU	-	NA	1	-	02/26/20 21:44	121,4500H+-B	AS
Nitrogen, Nitrite	ND		mg/l	0.050	--	1	-	02/27/20 06:08	44,353.2	MR
Nitrogen, Nitrate	ND		mg/l	0.10	--	1	-	02/27/20 06:08	44,353.2	MR
<b>Bacteria in Water - Westborough Lab</b>										
Coliform, Total	Negative		col/100ml	-	NA	1	-	02/27/20 02:55	121,9223B	JW
Escherichia Coli	Negative		col/100ml	-	NA	1	-	02/27/20 02:55	121,9223B	JW
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	18.1		mg/l	0.500	--	1	-	02/27/20 20:40	44,300.0	AT
Sulfate	4.94		mg/l	1.00	--	1	-	02/27/20 20:40	44,300.0	AT



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1344792-1									
Odor	NO ODOR	TON	1	--	1	-	02/26/20 21:39	121,2150B	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1344804-1									
Turbidity	ND	NTU	0.20	--	1	-	02/26/20 23:05	44,180.1	AS
Bacteria in Water - Westborough Lab for sample(s): 01 Batch: WG1344836-1									
Coliform, Total	Negative	col/100ml	-	NA	1	-	02/27/20 02:55	121,9223B	JW
Escherichia Coli	Negative	col/100ml	-	NA	1	-	02/27/20 02:55	121,9223B	JW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1344848-1									
Nitrogen, Nitrate	ND	mg/l	0.10	--	1	-	02/27/20 05:53	44,353.2	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1344849-1									
Nitrogen, Nitrite	ND	mg/l	0.050	--	1	-	02/27/20 05:56	44,353.2	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1344860-1									
Solids, Total Dissolved	ND	mg/l	10	--	1	-	02/27/20 11:30	121,2540C	DW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1344957-1									
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	02/27/20 05:11	121,2320B	MA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1344992-1									
Cyanide, Total	ND	mg/l	0.005	--	1	02/27/20 12:35	02/27/20 15:12	121,4500CN-CE	LH
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1345373-1									
Sulfate	ND	mg/l	1.00	--	1	-	02/27/20 19:34	44,300.0	AT
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1345373-1									
Chloride	ND	mg/l	0.500	--	1	-	02/27/20 19:34	44,300.0	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1345566-1									
Fluoride	ND	mg/l	0.20	--	1	-	02/28/20 17:00	121,4500F-C	MM
Perchlorate by IC-MS-MS - Westborough Lab for sample(s): 01 Batch: WG1346744-1									
Perchlorate	ND	ug/l	0.050	--	1	-	03/03/20 18:46	71,332.0	AM

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1344784-1								
pH	99		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1344804-2								
Turbidity	106		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1344848-2								
Nitrogen, Nitrate	98		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1344849-2								
Nitrogen, Nitrite	98		-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1344860-2								
Solids, Total Dissolved	85		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1344957-2								
Alkalinity, Total	103		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1344992-2								
Cyanide, Total	93		-		90-110	-		

## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE

**Project Number:** 2170766

**Lab Number:** L2008594

**Report Date:** 03/20/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1345373-2					
Chloride	102	-	90-110	-	
Sulfate	104	-	90-110	-	
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1345566-2					
Fluoride	104	-	78-115	-	
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 Batch: WG1346744-2					
Perchlorate	103	-	80-120	-	20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01    QC Batch ID: WG1344848-4    QC Sample: L2008398-01    Client ID: MS Sample												
Nitrogen, Nitrate	3.7	4	7.4	95	-	-	-	-	83-113	-	-	6
General Chemistry - Westborough Lab Associated sample(s): 01    QC Batch ID: WG1344849-4    QC Sample: L2008398-01    Client ID: MS Sample												
Nitrogen, Nitrite	ND	4	4.1	102	-	-	-	-	80-120	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01    QC Batch ID: WG1344957-4    QC Sample: L2008594-01    Client ID: TW-1F-20												
Alkalinity, Total	4.40	100	111	107	-	-	-	-	86-116	-	-	10
General Chemistry - Westborough Lab Associated sample(s): 01    QC Batch ID: WG1344992-4    QC Sample: L2008502-01    Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.196	98	-	-	-	-	90-110	-	-	30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01    QC Batch ID: WG1345373-3    QC Sample: L2008594-01    Client ID: TW-1F-20												
Chloride	18.1	4	21.6	86	Q	-	-	-	90-110	-	-	18
Sulfate	4.94	8	12.9	100	-	-	-	-	90-110	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01    QC Batch ID: WG1345566-4    QC Sample: L2008594-01    Client ID: TW-1F-20												
Fluoride	ND	2	2.3	113	-	-	-	-	69-124	-	-	13
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01    QC Batch ID: WG1346744-3    QC Sample: L2008594-01    Client ID: TW-1F-20												
Perchlorate	0.084	1	1.22	114	-	-	-	-	80-120	-	-	20

## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2008594

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1344784-2 QC Sample: L2008594-01 Client ID: TW-1F-20						
pH (H)	5.6	5.5	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1344792-2 QC Sample: L2008594-01 Client ID: TW-1F-20						
Odor	NO ODOR	NO ODOR	TON	NC		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1344793-1 QC Sample: L2008594-01 Client ID: TW-1F-20						
Color, Apparent	ND	ND	A.P.C.U.	NC		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1344804-3 QC Sample: L2008594-01 Client ID: TW-1F-20						
Turbidity	ND	ND	NTU	NC		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1344848-3 QC Sample: L2008398-01 Client ID: DUP Sample						
Nitrogen, Nitrate	3.7	3.6	mg/l	3		6
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1344849-3 QC Sample: L2008398-01 Client ID: DUP Sample						
Nitrogen, Nitrite	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1344860-3 QC Sample: L2008452-04 Client ID: DUP Sample						
Solids, Total Dissolved	99	100	mg/l	1		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1344957-3 QC Sample: L2008594-01 Client ID: TW-1F-20						
Alkalinity, Total	4.40	4.30	mg CaCO3/L	2		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1344992-3 QC Sample: L2008205-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30

## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: BARNSTABLE NEW SOURCE

Project Number: 2170766

Lab Number: L2008594

Report Date: 03/20/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
<b>Anions by Ion Chromatography - Westborough Lab</b> Associated sample(s): 01 QC Batch ID: WG1345373-4 QC Sample: L2008594-01 Client ID: TW-1F-20					
Chloride	18.1	18.3	mg/l	1	18
Sulfate	4.94	4.77	mg/l	4	20
<b>General Chemistry - Westborough Lab</b> Associated sample(s): 01 QC Batch ID: WG1345566-3 QC Sample: L2008594-01 Client ID: TW-1F-20					
Fluoride	ND	ND	mg/l	NC	13
<b>Perchlorate by IC-MS-MS - Westborough Lab</b> Associated sample(s): 01 QC Batch ID: WG1346744-4 QC Sample: L2008594-01 Client ID: TW-1F-20					
Perchlorate	0.084	0.086	ug/l	2	20

**Project Name:** BARNSTABLE NEW SOURCE**Lab Number:** L2008594**Project Number:** 2170766**Report Date:** 03/20/20**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

**Cooler Information**

<b>Cooler</b>	<b>Custody Seal</b>
A	Absent
B	Absent

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2008594-01A	Vial HCl preserved	A	NA		5.9	Y	Absent		524.2(14)
L2008594-01A1	Vial HCl preserved	A	NA		5.9	Y	Absent		524.2(14)
L2008594-01B	Vial unpreserved	A	NA		5.9	Y	Absent		SUB-RADON(4)
L2008594-01B1	Vial unpreserved	A	NA		5.9	Y	Absent		SUB-RADON(4)
L2008594-01C	Vial Na2S2O3 preserved	A	NA		5.9	Y	Absent		SUB-505(14),SUB-504.1(14)
L2008594-01C1	Vial Na2S2O3 preserved	A	NA		5.9	Y	Absent		SUB-505(14),SUB-504.1(14)
L2008594-01C2	Vial Na2S2O3 preserved	A	NA		5.9	Y	Absent		SUB-505(14),SUB-504.1(14)
L2008594-01D	Vial Na2S2O3 preserved	A	NA		5.9	Y	Absent		SUB-515.3(14)
L2008594-01D1	Vial Na2S2O3 preserved	A	NA		5.9	Y	Absent		SUB-515.3(14)
L2008594-01D2	Vial Na2S2O3 preserved	A	NA		5.9	Y	Absent		SUB-515.3(14)
L2008594-01E	Vial MCAA/Na2S2O3 preserved	A	NA		5.9	Y	Absent		SUB-531.1(28)
L2008594-01E1	Vial MCAA/Na2S2O3 preserved	A	NA		5.9	Y	Absent		SUB-531.1(28)
L2008594-01F	Plastic 250ml Trizma preserved	B	NA		3.3	Y	Absent		A2-537.1(14)
L2008594-01F1	Plastic 250ml Trizma preserved	B	NA		3.3	Y	Absent		A2-537.1(14)
L2008594-01G	Bacteria Cup Na2S2O3 preserved	A	NA		5.9	Y	Absent		T-COLI-C(1.25)
L2008594-01G1	Bacteria Cup Na2S2O3 preserved	A	NA		5.9	Y	Absent		T-COLI-C(1.25)
L2008594-01H	Plastic 250ml unpreserved/No Headspace	A	NA		5.9	Y	Absent		ALK-T-2320(14)
L2008594-01I	Plastic 250ml unpreserved	A	NA		5.9	Y	Absent		PERC-332(28)
L2008594-01I1	Bacteria Cup unpreserved	A	NA		5.9	Y	Absent		PERC-332(28)
L2008594-01J	Amber 250ml unpreserved	A	7	7	5.9	Y	Absent		HOLD-SVOC(180)
L2008594-01J1	Amber 250ml unpreserved	A	7	7	5.9	Y	Absent		HOLD-SVOC(180)
L2008594-01K	Plastic 250ml NaOH preserved	A	>12	>12	5.9	Y	Absent		TCN-4500(14)



Project Name: BARNSTABLE NEW SOURCE

Lab Number: L2008594

Project Number: 2170766

Report Date: 03/20/20

**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2008594-01L	Plastic 250ml HNO3 preserved	A	<2	<2	5.9	Y	Absent		CD-2008T(180),AG-UI(180),NI-2008T(180),ZN-UI(180),CA-UI(180),K-UI(180),BE-2008T(180),FE-UI(180),MG-UI(180),HARDU(180),AS-2008T(180),HG-U(28),SE-2008T(180),AL-UI(180),BA-2008T(180),NA-UI(180),MN-UI(180),CU-UI(180),CR-2008T(180),PB-2008T(180),SB-2008T(180),TL-2008T(180)
L2008594-01M	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	5.9	N	Absent		A2-14DIOXANE-522(28)
L2008594-01M1	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	5.9	N	Absent		A2-14DIOXANE-522(28)
L2008594-01N	Plastic 950ml unpreserved	A	7	7	5.9	Y	Absent		F-4500(28),SO4-300(28),CL-300(28),NO2-353(2),TURB-180(2),NO3-353(2),PH-4500(.01),TDS-2540(7)
L2008594-01O	Amber 1000ml NaSulfite/HCL preserved	A	<2	<2	5.9	Y	Absent		SUB-525.2(14)
L2008594-01O1	Amber 1000ml NaSulfite/HCL preserved	A	<2	<2	5.9	Y	Absent		SUB-525.2(14)
L2008594-01P	Amber 950ml unpreserved	A	7	7	5.9	Y	Absent		COLOR-A-2120(2),ODOR-2150(1)
L2008594-01Q	Plastic 950ml HNO3 preserved	A	<2	<2	5.9	Y	Absent		SUB-ALPHA/BETA(180)
L2008594-01Q1	Plastic 950ml HNO3 preserved	A	<2	<2	5.9	Y	Absent		SUB-ALPHA/BETA(180)
L2008594-01Q2	Plastic 950ml HNO3 preserved	A	<2	<2	5.9	Y	Absent		SUB-ALPHA/BETA(180)
L2008594-01Q3	Plastic 950ml HNO3 preserved	A	<2	<2	5.9	Y	Absent		SUB-ALPHA/BETA(180)
L2008594-01R	Plastic 950ml HNO3 preserved	A	<2	<2	5.9	Y	Absent		SUB-RA228(180),SUB-RA226(180)
L2008594-01R1	Plastic 950ml HNO3 preserved	A	<2	<2	5.9	Y	Absent		SUB-RA228(180),SUB-RA226(180)
L2008594-01R2	Plastic 950ml HNO3 preserved	A	<2	<2	5.9	Y	Absent		SUB-RA228(180),SUB-RA226(180)
L2008594-01R3	Plastic 950ml HNO3 preserved	A	<2	<2	5.9	Y	Absent		SUB-RA228(180),SUB-RA226(180)
L2008594-01R4	Plastic 950ml HNO3 preserved	A	<2	<2	5.9	Y	Absent		SUB-RA228(180),SUB-RA226(180)
L2008594-01R5	Plastic 950ml HNO3 preserved	A	<2	<2	5.9	Y	Absent		SUB-RA228(180),SUB-RA226(180)
L2008594-01R6	Plastic 950ml HNO3 preserved	A	<2	<2	5.9	Y	Absent		SUB-RA228(180),SUB-RA226(180)
L2008594-01S	Plastic 500ml HNO3 preserved	A	<2	<2	5.9	Y	Absent		SUB-URANIUM(180)
L2008594-02A	Plastic 250ml Trizma preserved	A	NA		5.9	Y	Absent		A2-537.1(14)
L2008594-03A	Vial HCl preserved	B	NA		3.3	Y	Absent		ARCHIVE()
L2008594-03B	Vial HCl preserved	B	NA		3.3	Y	Absent		ARCHIVE()

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

Serial\_No:03202017:23  
**Lab Number:** L2008594  
**Report Date:** 03/20/20

**PFAS PARAMETER SUMMARY**

Parameter	Acronym	CAS Number
<b>PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)</b>		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
<b>PERFLUOROALKYL SULFONIC ACIDS (PFSAs)</b>		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
<b>FLUOROTELOMERS</b>		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
<b>PERFLUOROALKANE SULFONAMIDES (FASAs)</b>		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
<b>PERFLUOROALKANE SULFONYL SUBSTANCES</b>		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
<b>PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS</b>		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
<b>CHLORO-PERFLUOROALKYL SULFONIC ACIDS</b>		
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

## GLOSSARY

### Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)  Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### Footnotes

Report Format: Data Usability Report



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Difference:** With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**PAH Total:** With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

**PFAS Total:** With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report



**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

**Data Qualifiers**

than 5x the RL. (Metals only.)

- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

**Project Name:** BARNSTABLE NEW SOURCE  
**Project Number:** 2170766

**Lab Number:** L2008594  
**Report Date:** 03/20/20

## REFERENCES

- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 16 Methods for the Determination of Organic Compounds in Drinking Water - Supplement II. EPA/600/R-92/129, August 1992.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 71 Determination of Perchlorate in Drinking Water by Ion Chromatography with Suppressed Conductivity and Electrospray Ionization Mass Spectrometry. EPA Method 332.0, EPA/600/R-05/049. Revision 1.0, March 2005.
- 120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- 133 Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537.1, EPA/600/R-18/352. Version 1.0, November 2018.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624/624.1:** m/p-xylene, o-xylene

**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### Mansfield Facility

**SM 2540D:** TSS

**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**EPA TO-12** Non-methane organics

**EPA 3C** Fixed gases

**Biological Tissue Matrix:** EPA 3050B

---

The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

**EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**

**EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.

**EPA 624.1:** Volatile Halocarbons & Aromatics,

**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.

**EPA 522.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

**EPA 245.1** Hg.

**SM2340B**

---

For a complete listing of analytes and methods, please contact your Alpha Project Manager.





8 Walkup Drive  
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Tel: 508-698-9220

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Mansfield, MA 02048  
Tel: 508-822-9300

# CHAIN OF CUSTODY

PAGE 1 OF 3

Date Rec'd in Lab: 2/26/20

ALPHA Job #: L2008597

## Project Information

Project Name: Barnstable News Source

Project Location: Barnstable, MA

Project #: 2170766

Project Manager: Kevin Mackinnon

ALPHA Quote #:

## Turn-Around Time

Standard  RUSH (only confirmed if pre-approved)

Date Due:

## Report Information - Data Deliverables

ADEX  EMAIL

## Billing Information

Same as Client info PO #:

## Client Information

Client: West & Sampson

Address: 55 Walkers Brook Dr.  
Reading, MA

Phone: 978 532-1900

Email:

Additional Project Information:

## Regulatory Requirements & Project Information Requirements

Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

ANALYSIS	VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input checked="" type="checkbox"/> 524.2	METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15	EPH: <input type="checkbox"/> RCRAS <input type="checkbox"/> RCR48 <input type="checkbox"/> PP13	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	<input type="checkbox"/> PCB <input type="checkbox"/> PEST	TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint	SAMPLE INFO
	SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH						
Sec coat 1,4 Dioxane Total Chloroform Perchlorate SOx Lead							
Filtration <input type="checkbox"/> Lab to do Preservation <input type="checkbox"/> Lab to do							

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials	Sample Comments
		Date	Time			
08597-01 ↓	Tw-1F-20 (changed from 2D)	2/26/20		DW	WTS	+
						+
						+
						+
						+
						+

- Container Type**  
 P= Plastic  
 A= Amber glass  
 V= Vial  
 G= Glass  
 B= Bacteria cup  
 C= Cube  
 O= Other  
 E= Encore  
 D= BOD Bottle
- Preservative**  
 A= None  
 B= HCl  
 C= HNO<sub>3</sub>  
 D= H<sub>2</sub>SO<sub>4</sub>  
 E= NaOH  
 F= MeOH  
 G= NaHSO<sub>4</sub>  
 H= Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub>  
 I= Ascorbic Acid  
 J= NH<sub>4</sub>Cl  
 K= Zn Acetate  
 O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
<u>W. Jesse Schwabswain</u>	<u>2/26/20</u>	<u>[Signature]</u>	<u>2/26/20 1620</u>

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
 FORM NO: 01-01 (rev. 12-Mar-2012)





# CHAIN OF CUSTODY

PAGE 2 OF 3

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

Date Rec'd in Lab: 2/21/20

ALPHA Job #: L2008597

### Project Information

Project Name: Barnstable New Source  
 Project Location: Barnstable, MA  
 Project #: 2120766  
 Project Manager: Kevin Mackennon  
 ALPHA Quote #:

### Report Information - Data Deliverables

ADEX  EMAIL

### Billing Information

Same as Client info PO #:

### Client Information

Client: Weston & Sampson  
 Address: 55 Walkers Brook Dr.  
Reading, MA  
 Phone: 978 832-1900  
 Email:

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved!)  
 Date Due:

### Regulatory Requirements & Project Information Requirements

Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

### Additional Project Information:

<b>ANALYSIS</b>	<b>SAMPLE INFO</b>
VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2	Filtration <input type="checkbox"/> Field <input type="checkbox"/> Lab to do
SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH	Preservation <input type="checkbox"/> Lab to do
METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15	
METALS: <input type="checkbox"/> RCRA5 <input type="checkbox"/> RCRA8 <input type="checkbox"/> PPT3	
EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	
VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	
PCB: <input type="checkbox"/> PEST	
TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint	
<u>Nitrate / Nitrite</u>	
<u>Radium 226</u>	
<u>Radium 228</u>	
<u>Uranium (UFA 2004)</u>	
<u>Inorganics (As, Ba, B, Ca, Cr, Cu, Pb, Hg, Se, Ni, Mn, P)</u>	

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
08597-g1	TW-1F-20 (changed from 2D)	2/26/20		DW	WJS

- Container Type**  
 P= Plastic  
 A= Amber glass  
 V= Vial  
 G= Glass  
 B= Bacteria cup  
 C= Cube  
 O= Other  
 E= Encore  
 D= BOD Bottle
- Preservative**  
 A= None  
 B= HCl  
 C= HNO<sub>3</sub>  
 D= H<sub>2</sub>SO<sub>4</sub>  
 E= NaOH  
 F= MeOH  
 G= NaHSO<sub>4</sub>  
 H= Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub>  
 I= Ascorbic Acid  
 J= NH<sub>4</sub>Cl  
 K= Zn Acetate  
 O= Other

Container Type					
Preservative					

Relinquished By:	Date/Time	Received By:	Date/Time
<u>W. Jesse Schwab arm</u>	<u>2/26/20</u>	<u>[Signature]</u>	<u>2/26/20 16:20</u>
<u>[Signature]</u>	<u>2/26/20 15:10</u>	<u>[Signature]</u>	<u>2/26/20 18:10</u>

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.  
 FORM NO: 01-01 (rev. 12-Mar-2012)







# GRANITE STATE

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website: www.granitestateanalytical.com

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**SAMPLE ID#:** 2002-02490-001  
**SAMPLED BY:** Alpha Analytical  
**SAMPLE ADDRESS:** L2008594  
 TW-1F-20  
 MA

**DATE AND TIME COLLECTED:** 02/26/2020 3:00PM  
**DATE AND TIME RECEIVED:** 02/27/2020 12:30PM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE 4.0° CELSIUS

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

**MORE LOC INFO:****CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
1,2-Dibromo-3-chloropropane (DBCP)*	<0.02	ug/L	✓		0.02	0.2 ug/L	EPA 504.1	TA-NH	03/04/20 8:29PM
Date Extracted	-					No Limit	EPA 504.1	EM-NH	03/04/20 1:32PM
Ethylene Dibromide (EDB)*	<0.02	ug/L	✓		0.02	0.05 ug/L	EPA 504.1	TA-NH	03/04/20 8:29PM
Aroclor 1016 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/04/20 10:51PM
Aroclor 1221 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/04/20 10:51PM
Aroclor 1232 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/04/20 10:51PM
Aroclor 1242 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/04/20 10:51PM
Aroclor 1248 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/04/20 10:51PM
Aroclor 1254 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/04/20 10:51PM
Aroclor 1260 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/04/20 10:51PM
Chlordane*	<0.2	ug/L	✓		0.2	2 ug/L	EPA 505	GQ-NH	03/04/20 10:51PM
Date Extracted	-					No Limit	EPA 505	EM-NH	03/04/20 1:32PM
Toxaphene*	<1.0	ug/L	✓		1.0	3 ug/L	EPA 505	GQ-NH	03/04/20 10:51PM
2,4,5-TP (Silvex)*	<0.25	ug/L	✓		0.25	50 ug/L	EPA 515.3	KV-NH	03/06/20 12:47AM
2,4-D*	<1	ug/L	✓		1	70 ug/L	EPA 515.3	KV-NH	03/06/20 12:47AM
Dalapon*	<1	ug/L	✓		1	200 ug/L	EPA 515.3	KV-NH	03/06/20 12:47AM
Date Extracted	-					No Limit	EPA 515.3	GQ-NH	03/05/20 8:55AM
Dicamba*	<0.18	ug/L			0.18	No Limit	EPA 515.3	KV-NH	03/06/20 12:47AM
Dinoseb*	<0.5	ug/L	✓		0.5	7 ug/L	EPA 515.3	KV-NH	03/06/20 12:47AM
Pentachlorophenol*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 515.3	KV-NH	03/06/20 12:47AM
Picloram*	<1.3	ug/L	✓		1.3	500 ug/L	EPA 515.3	KV-NH	03/06/20 12:47AM
2,4-Dichlorophenylacetic acid	98	%	✓			70-130%	EPA 515.3 - SS	KV-NH	03/06/20 12:47AM
Alachlor*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
Aldrin*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/03/20 12:42PM
Atrazine*	<0.1	ug/L	✓		0.1	3 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
Benzo(a)pyrene*	<0.1	ug/L	✓		0.1	0.2 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
Butachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/03/20 12:42PM
Date Extracted	-					No Limit	EPA 525.2	GQ-NH	03/02/20 10:15AM
Di(2-ethylhexyl)adipate*	<0.6	ug/L	✓		0.6	400 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
Di(2-ethylhexyl)phthalate*	<3	ug/L	✓		3	6 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
Dieldrin*	<0.04	ug/L			0.04	No Limit	EPA 525.2	DD-NH	03/03/20 12:42PM



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**SAMPLED BY:** Alpha Analytical  
**SAMPLE ADDRESS:** L2008594  
 TW-1F-20  
 MA

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

**DATE AND TIME COLLECTED:** 02/26/2020 3:00PM  
**DATE AND TIME RECEIVED:** 02/27/2020 12:30PM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE 4.0° CELSIUS

**MORE LOC INFO:****CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Endrin*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
Heptachlor Epoxide*	<0.06	ug/L	✓		0.06	0.2 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
Heptachlor*	<0.04	ug/L	✓		0.04	0.4 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
Hexachlorobenzene*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
Hexachlorocyclopentadiene*	<0.1	ug/L	✓		0.1	50 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
Lindane*	<0.07	ug/L	✓		0.07	0.2 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
Methoxychlor*	<0.1	ug/L	✓		0.1	40 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
Metolachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/03/20 12:42PM
Metribuzin*	<0.1	ug/L	✓		0.1	70 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
Propachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/03/20 12:42PM
Simazine*	<0.1	ug/L	✓		0.1	4 ug/L	EPA 525.2	DD-NH	03/03/20 12:42PM
1,3-Dimethyl-2-nitrobenzene	100	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/03/20 12:42PM
Perylene-d12	85	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/03/20 12:42PM
Pyrene-d10	91	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/03/20 12:42PM
Triphenylphosphate	117	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/03/20 12:42PM
3-Hydroxycarbofuran*	<1	ug/L			1	No Limit	EPA 531.1	TA-NH	03/05/20 7:03AM
Aldicarb Sulfone*	<1	ug/L			1	No Limit	EPA 531.1	TA-NH	03/05/20 7:03AM
Aldicarb Sulfoxide*	<1	ug/L			1	No Limit	EPA 531.1	TA-NH	03/05/20 7:03AM
Aldicarb*	<1	ug/L			1	No Limit	EPA 531.1	TA-NH	03/05/20 7:03AM
Carbaryl*	<1	ug/L			1	No Limit	EPA 531.1	TA-NH	03/05/20 7:03AM
Carbofuran*	<0.9	ug/L	✓		0.9	40 ug/L	EPA 531.1	TA-NH	03/05/20 7:03AM
Date Extracted	-					No Limit	EPA 531.1	TA-NH	03/04/20 2:25PM
Methiocarb*	<1	ug/L			1	No Limit	EPA 531.1	TA-NH	03/05/20 7:03AM
Methomyl*	<1	ug/L			1	No Limit	EPA 531.1	TA-NH	03/05/20 7:03AM
Oxamyl (Vydate)*	<1	ug/L	✓		1	200 ug/L	EPA 531.1	TA-NH	03/05/20 7:03AM
Propoxur (Baygon)*	<1	ug/L			1	No Limit	EPA 531.1	TA-NH	03/05/20 7:03AM



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 Westborough, MA 01581

**SAMPLE ID#:** 2002-02490-001  
**SAMPLED BY:** Alpha Analytical

**SAMPLE ADDRESS:** L2008594  
 TW-1F-20  
 MA

**MORE LOC INFO:**

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	▼
Fails State Guideline	✕
Attention	⚠

**DATE AND TIME COLLECTED:** 02/26/2020 3:00PM  
**DATE AND TIME RECEIVED:** 02/27/2020 12:30PM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE 4.0° CELSIUS  
**CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
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The results presented in this report relate to the samples listed above in the condition in which they were received.  
 RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

Note: Analyst 2976 = Pace Analytical Services - Pittsburgh.

**\* MA Certified Analysis**

The Commonwealth of Massachusetts has set an Advisory Limit of 10,000 pCi/L for Radon in Water

  
 \_\_\_\_\_  
 Donald A. D'Anjou, Ph. D.  
 Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.  
 State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |  
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**DATE PRINTED:** 03/20/2020  
**CLIENT NAME:** Alpha Analytical  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2002-02490-002  
**SAMPLED BY:** Alpha Analytical  
**SAMPLE ADDRESS:** L2008594  
 TW-1F-20  
 MA  
**MORE LOC INFO:**

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

**DATE AND TIME COLLECTED:** 02/26/2020 3:00PM  
**DATE AND TIME RECEIVED:** 02/27/2020 12:30PM  
**ANALYSIS PACKAGE:** Gross Alpha/Uranium Co  
**RECEIPT TEMPERATURE:** ON ICE 4.0° CELSIUS  
**CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Uranium*	<1	ug/L			1	30 ug/L	EPA 200.8	CW-NH	02/28/20 1:17PM
Uranium	<0.67	pCi/L			0.67	20 pCi/L	EPA 200.8 Calc.	CW-NH	02/28/20 1:17PM
Analytical Gross Alpha*	<3	pCi/L			3	No Limit	EPA 900	2976	03/13/20 7:51AM
Gross Beta*	<3.0	pCi/L			3.0		EPA 900.0	2976	03/13/20 5:51PM
Compliance Gross Alpha*	<3	pCi/L			3	15 pCi/L	N/A Calculation	ES-NH	03/13/20 7:51AM

The results presented in this report relate to the samples listed above in the condition in which they were received.

RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

Note: Analyst 2976 = Pace Analytical Services - Pittsburgh.

**\* MA Certified Analysis**

The Commonwealth of Massachusetts has set an Advisory Limit of 10,000 pCi/L for Radon in Water

---

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 Laboratory Director

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 Westborough, MA 01581

**SAMPLE ID#:** 2002-02490-003  
**SAMPLED BY:** Alpha Analytical

**SAMPLE ADDRESS:** L2008594  
 TW-1F-20  
 MA

**MORE LOC INFO:**

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

**DATE AND TIME COLLECTED:** 02/26/2020 3:00PM  
**DATE AND TIME RECEIVED:** 02/27/2020 12:30PM  
**ANALYSIS PACKAGE:** Rad 226 & 228  
**RECEIPT TEMPERATURE:** ON ICE 4.0° CELSIUS

**CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Radium 226*	<1	pCi/L			1	No Limit	EPA 903.0	2976	03/18/20 1:31PM
Radium 228*	<1	pCi/L			1	No Limit	EPA 904.0	2976	03/19/20 10:54AM
Combined Radium	<1	pCi/L			1	5 pCi/L	N/A Calculation	2976	03/20/20 1:18PM

The results presented in this report relate to the samples listed above in the condition in which they were received.  
 RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

Note: Analyst 2976 = Pace Analytical Services - Pittsburgh.

**\* MA Certified Analysis**

The Commonwealth of Massachusetts has set an Advisory Limit of 10,000 pCi/L for Radon in Water

Donald A. D'Anjou, Ph. D.  
 Laboratory Director

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**SAMPLED BY:** Alpha Analytical

**SAMPLE ADDRESS:** L2008594  
 TW-1F-20  
 MA

**MORE LOC INFO:**

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

**DATE AND TIME COLLECTED:** 02/26/2020 3:00PM

**DATE AND TIME RECEIVED:** 02/27/2020 12:30PM

**ANALYSIS PACKAGE:** Radon Water-Mass

**RECEIPT TEMPERATURE:** ON ICE 4.0° CELSIUS

**CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Radon	207	pCi/L			100	10000 pCi/L (MA Limit)	SM 7500 Rn B	TT-ME	02/28/20 10:44PM

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## ANALYTICAL REPORT

Lab Number:	L2011300
Client:	Weston & Sampson 55 Walkers Brook Drive Suite 100 Reading, MA 01867
ATTN:	Kevin MacKinnon
Phone:	(978) 532-1900
Project Name:	BARNSTABLE MA
Project Number:	2170766
Report Date:	04/07/20

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

---

Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L2011300-01	TW-1G-20	DW	BARNSTABLE MA	03/12/20 15:00	03/12/20

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

**HOLD POLICY** - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

---

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

### Case Narrative (continued)

#### Report Submission

April 07, 2020: This final report includes the results of all requested analyses.

March 19, 2020: This is a preliminary report.

The analyses of 504.1, 505, 515.3, 525.2, 531.1, Alpha/Beta, RA226, RA228, Radon and Uranium were subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

#### Sample Receipt

The analyses performed were specified by the client.

#### Perchlorate

The WG1350806-3 MS recovery, performed on L2011300-01, is below the acceptance criteria for perchlorate (75%); however, the associated LCS recovery is within overall method allowances. The results of the native sample are considered to have a potentially low bias for these compounds.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Tiffani Morrissey

Title: Technical Director/Representative

Date: 04/07/20

# ORGANICS

# VOLATILES

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

**SAMPLE RESULTS**

Lab ID: L2011300-01  
 Client ID: TW-1G-20  
 Sample Location: BARNSTABLE MA

Date Collected: 03/12/20 15:00  
 Date Received: 03/12/20  
 Field Prep: Refer to COC

Sample Depth:

Matrix: Dw  
 Analytical Method: 16,524.2  
 Analytical Date: 03/13/20 15:53  
 Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
Dichlorodifluoromethane	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	0.50	--	1
Bromomethane	ND		ug/l	0.50	--	1
Chloroethane	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	0.50	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
Methylene chloride	ND		ug/l	0.50	--	1
Methyl tert butyl ether	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.50	--	1
1,1-Dichloroethane	ND		ug/l	0.50	--	1
2,2-Dichloropropane	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Chloroform	2.2		ug/l	0.50	--	1
Bromochloromethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	0.50	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.50	--	1

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

**SAMPLE RESULTS**

Lab ID: L2011300-01  
 Client ID: TW-1G-20  
 Sample Location: BARNSTABLE MA

Date Collected: 03/12/20 15:00  
 Date Received: 03/12/20  
 Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Organics by GC/MS - Westborough Lab</b>						
1,3-Dichloropropane	ND		ug/l	0.50	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,2-Dibromoethane	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
p/m-Xylene	ND		ug/l	0.50	--	1
o-Xylene	ND		ug/l	0.50	--	1
Styrene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
Bromoform	ND		ug/l	0.50	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
1,2,3-Trichloropropane	ND		ug/l	0.50	--	1
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	0.50	--	1
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--	1
o-Chlorotoluene	ND		ug/l	0.50	--	1
p-Chlorotoluene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	0.50	--	1
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
1,3-Dichlorobenzene	ND		ug/l	0.50	--	1
1,4-Dichlorobenzene	ND		ug/l	0.50	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	0.50	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--	1
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--	1



**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

**SAMPLE RESULTS**

Lab ID: L2011300-01  
 Client ID: TW-1G-20  
 Sample Location: BARNSTABLE MA

Date Collected: 03/12/20 15:00  
 Date Received: 03/12/20  
 Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	107		80-120
4-Bromofluorobenzene	83		80-120

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 03/13/20 12:32  
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1351826-4					
Dichlorodifluoromethane	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	0.50	--
Bromomethane	ND		ug/l	0.50	--
Chloroethane	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	0.50	--
1,1-Dichloroethene	ND		ug/l	0.50	--
Methylene chloride	ND		ug/l	0.50	--
Methyl tert butyl ether	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.50	--
1,1-Dichloroethane	ND		ug/l	0.50	--
2,2-Dichloropropane	ND		ug/l	0.50	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Chloroform	ND		ug/l	0.50	--
Bromochloromethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	0.50	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.50	--
1,3-Dichloropropane	ND		ug/l	0.50	--

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 03/13/20 12:32  
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1351826-4					
Tetrachloroethene	ND		ug/l	0.50	--
Dibromochloromethane	ND		ug/l	0.50	--
1,2-Dibromoethane	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Ethylbenzene	ND		ug/l	0.50	--
p/m-Xylene	ND		ug/l	0.50	--
o-Xylene	ND		ug/l	0.50	--
Styrene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
Xylenes, Total <sup>1</sup>	ND		ug/l	0.50	--
Bromoform	ND		ug/l	0.50	--
1,1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
1,2,3-Trichloropropane	ND		ug/l	0.50	--
n-Propylbenzene	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	0.50	--
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--
o-Chlorotoluene	ND		ug/l	0.50	--
p-Chlorotoluene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	0.50	--
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
1,3-Dichlorobenzene	ND		ug/l	0.50	--
1,4-Dichlorobenzene	ND		ug/l	0.50	--
n-Butylbenzene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	0.50	--
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 16,524.2  
Analytical Date: 03/13/20 12:32  
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1351826-4					
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	107		80-120
4-Bromofluorobenzene	87		80-120

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE MA

Lab Number: L2011300

Project Number: 2170766

Report Date: 04/07/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1351826-3								
Dichlorodifluoromethane	82		-		70-130	-		20
Chloromethane	108		-		70-130	-		20
Vinyl chloride	98		-		70-130	-		20
Bromomethane	102		-		70-130	-		20
Chloroethane	105		-		70-130	-		20
Trichlorofluoromethane	102		-		70-130	-		20
1,1-Dichloroethene	102		-		70-130	-		20
Methylene chloride	110		-		70-130	-		20
Methyl tert butyl ether	98		-		70-130	-		20
trans-1,2-Dichloroethene	108		-		70-130	-		20
1,1-Dichloroethane	108		-		70-130	-		20
2,2-Dichloropropane	112		-		70-130	-		20
cis-1,2-Dichloroethene	108		-		70-130	-		20
Chloroform	105		-		70-130	-		20
Bromochloromethane	108		-		70-130	-		20
1,1,1-Trichloroethane	108		-		70-130	-		20
1,1-Dichloropropene	102		-		70-130	-		20
Carbon tetrachloride	102		-		70-130	-		20
1,2-Dichloroethane	98		-		70-130	-		20
Benzene	102		-		70-130	-		20
Trichloroethene	102		-		70-130	-		20
1,2-Dichloropropane	108		-		70-130	-		20
Bromodichloromethane	100		-		70-130	-		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE MA

Lab Number: L2011300

Project Number: 2170766

Report Date: 04/07/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1351826-3								
Dibromomethane	100		-		70-130	-		20
cis-1,3-Dichloropropene	100		-		70-130	-		20
Toluene	100		-		70-130	-		20
trans-1,3-Dichloropropene	100		-		70-130	-		20
1,1,2-Trichloroethane	98		-		70-130	-		20
1,3-Dichloropropane	100		-		70-130	-		20
Tetrachloroethene	102		-		70-130	-		20
Dibromochloromethane	98		-		70-130	-		20
1,2-Dibromoethane	100		-		70-130	-		20
Chlorobenzene	115		-		70-130	-		20
1,1,1,2-Tetrachloroethane	118		-		70-130	-		20
Ethylbenzene	112		-		70-130	-		20
p/m-Xylene	111		-		70-130	-		20
o-Xylene	115		-		70-130	-		20
Styrene	115		-		70-130	-		20
Isopropylbenzene	108		-		70-130	-		20
Bromoform	108		-		70-130	-		20
1,1,2,2-Tetrachloroethane	102		-		70-130	-		20
1,2,3-Trichloropropane	110		-		70-130	-		20
n-Propylbenzene	102		-		70-130	-		20
Bromobenzene	110		-		70-130	-		20
1,3,5-Trimethylbenzene	85		-		70-130	-		20
o-Chlorotoluene	110		-		70-130	-		20

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE MA

Project Number: 2170766

Lab Number: L2011300

Report Date: 04/07/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	RPD	
	%Recovery	Qual	%Recovery	Qual			Qual	Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1351826-3								
p-Chlorotoluene	110		-		70-130	-		20
tert-Butylbenzene	92		-		70-130	-		20
1,2,4-Trimethylbenzene	92		-		70-130	-		20
sec-Butylbenzene	95		-		70-130	-		20
p-Isopropyltoluene	95		-		70-130	-		20
1,3-Dichlorobenzene	112		-		70-130	-		20
1,4-Dichlorobenzene	122		-		70-130	-		20
n-Butylbenzene	100		-		70-130	-		20
1,2-Dichlorobenzene	125		-		70-130	-		20
1,2-Dibromo-3-chloropropane	108		-		70-130	-		20
1,2,4-Trichlorobenzene	110		-		70-130	-		20
Hexachlorobutadiene	118		-		70-130	-		20
Naphthalene	95		-		70-130	-		20
1,2,3-Trichlorobenzene	100		-		70-130	-		20

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
1,2-Dichlorobenzene-d4	98				80-120
4-Bromofluorobenzene	91				80-120

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE MA

**Lab Number:** L2011300

**Project Number:** 2170766

**Report Date:** 04/07/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01    QC Batch ID: WG1351826-6    QC Sample: L2011297-02    Client ID: MS Sample												
Dichlorodifluoromethane	ND	4	2.9	72		-	-		70-130	-		20
Chloromethane	ND	4	3.7	92		-	-		70-130	-		20
Vinyl chloride	ND	4	3.8	95		-	-		70-130	-		20
Bromomethane	ND	4	4.2	105		-	-		70-130	-		20
Chloroethane	ND	4	4.2	105		-	-		70-130	-		20
Trichlorofluoromethane	ND	4	4.2	105		-	-		70-130	-		20
1,1-Dichloroethene	ND	4	4.1	103		-	-		70-130	-		20
Methylene chloride	ND	4	4.0	100		-	-		70-130	-		20
Methyl tert butyl ether	ND	4	3.8	95		-	-		70-130	-		20
trans-1,2-Dichloroethene	ND	4	4.0	100		-	-		70-130	-		20
1,1-Dichloroethane	ND	4	4.2	105		-	-		70-130	-		20
2,2-Dichloropropane	ND	4	3.9	98		-	-		70-130	-		20
cis-1,2-Dichloroethene	ND	4	4.1	103		-	-		70-130	-		20
Chloroform	ND	4	4.2	105		-	-		70-130	-		20
Bromochloromethane	ND	4	4.0	100		-	-		70-130	-		20
1,1,1-Trichloroethane	ND	4	4.2	105		-	-		70-130	-		20
1,1-Dichloropropene	ND	4	4.1	103		-	-		70-130	-		20
Carbon tetrachloride	ND	4	4.1	103		-	-		70-130	-		20
1,2-Dichloroethane	ND	4	4.1	103		-	-		70-130	-		20
Benzene	ND	4	4.2	105		-	-		70-130	-		20
Trichloroethene	ND	4	4.1	103		-	-		70-130	-		20
1,2-Dichloropropane	ND	4	4.2	105		-	-		70-130	-		20
Bromodichloromethane	ND	4	4.0	100		-	-		70-130	-		20
Dibromomethane	ND	4	4.0	100		-	-		70-130	-		20



## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE MA

**Project Number:** 2170766

**Lab Number:** L2011300

**Report Date:** 04/07/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01    QC Batch ID: WG1351826-6    QC Sample: L2011297-02    Client ID: MS Sample												
cis-1,3-Dichloropropene	ND	4	3.9	98		-	-		70-130	-		20
Toluene	ND	4	4.0	100		-	-		70-130	-		20
trans-1,3-Dichloropropene	ND	4	3.7	92		-	-		70-130	-		20
1,1,2-Trichloroethane	ND	4	4.0	100		-	-		70-130	-		20
1,3-Dichloropropane	ND	4	3.9	98		-	-		70-130	-		20
Tetrachloroethene	ND	4	4.0	100		-	-		70-130	-		20
Dibromochloromethane	ND	4	3.9	98		-	-		70-130	-		20
1,2-Dibromoethane	ND	4	3.8	95		-	-		70-130	-		20
Chlorobenzene	ND	4	4.7	118		-	-		70-130	-		20
1,1,1,2-Tetrachloroethane	ND	4	4.6	115		-	-		70-130	-		20
Ethylbenzene	ND	4	4.5	113		-	-		70-130	-		20
p/m-Xylene	ND	8	9.0	113		-	-		70-130	-		20
o-Xylene	ND	4	4.1	103		-	-		70-130	-		20
Styrene	ND	4	4.4	110		-	-		70-130	-		20
Isopropylbenzene	ND	4	4.0	100		-	-		70-130	-		20
Bromoform	ND	4	4.2	105		-	-		70-130	-		20
1,1,1,2,2-Tetrachloroethane	ND	4	4.1	103		-	-		70-130	-		20
1,2,3-Trichloropropane	ND	4	4.6	115		-	-		70-130	-		20
n-Propylbenzene	ND	4	4.2	105		-	-		70-130	-		20
Bromobenzene	ND	4	4.7	118		-	-		70-130	-		20
1,3,5-Trimethylbenzene	ND	4	3.6	90		-	-		70-130	-		20
o-Chlorotoluene	ND	4	4.6	115		-	-		70-130	-		20
p-Chlorotoluene	ND	4	4.5	113		-	-		70-130	-		20
tert-Butylbenzene	ND	4	4.0	100		-	-		70-130	-		20

## Matrix Spike Analysis

*Batch Quality Control*

**Project Name:** BARNSTABLE MA

**Lab Number:** L2011300

**Project Number:** 2170766

**Report Date:** 04/07/20

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
Volatile Organics by GC/MS - Westborough Lab    Associated sample(s): 01    QC Batch ID: WG1351826-6    QC Sample: L2011297-02    Client ID: MS Sample												
1,2,4-Trimethylbenzene	ND	4	3.8	95		-	-		70-130	-		20
sec-Butylbenzene	ND	4	4.0	100		-	-		70-130	-		20
p-Isopropyltoluene	ND	4	3.8	95		-	-		70-130	-		20
1,3-Dichlorobenzene	ND	4	4.6	115		-	-		70-130	-		20
1,4-Dichlorobenzene	ND	4	4.7	118		-	-		70-130	-		20
n-Butylbenzene	ND	4	3.5	88		-	-		70-130	-		20
1,2-Dichlorobenzene	ND	4	4.7	118		-	-		70-130	-		20
1,2-Dibromo-3-chloropropane	ND	4	4.1	103		-	-		70-130	-		20
1,2,4-Trichlorobenzene	ND	4	3.9	98		-	-		70-130	-		20
Hexachlorobutadiene	ND	4	4.4	110		-	-		70-130	-		20
Naphthalene	ND	4	3.2	80		-	-		70-130	-		20
1,2,3-Trichlorobenzene	ND	4	3.6	90		-	-		70-130	-		20

<i>Surrogate</i>	<i>MS % Recovery</i>	<i>MS Qualifier</i>	<i>MSD % Recovery</i>	<i>MSD Qualifier</i>	<i>Acceptance Criteria</i>
1,2-Dichlorobenzene-d4	98				80-120
4-Bromofluorobenzene	97				80-120

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE MA

Project Number: 2170766

Lab Number: L2011300

Report Date: 04/07/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1351826-5 QC Sample: L2011295-02 Client ID: DUP Sample						
Dichlorodifluoromethane	ND	ND	ug/l	NC		20
Chloromethane	ND	ND	ug/l	NC		20
Vinyl chloride	ND	ND	ug/l	NC		20
Bromomethane	ND	ND	ug/l	NC		20
Chloroethane	ND	ND	ug/l	NC		20
Trichlorofluoromethane	ND	ND	ug/l	NC		20
1,1-Dichloroethene	ND	ND	ug/l	NC		20
Methylene chloride	ND	ND	ug/l	NC		20
Methyl tert butyl ether	ND	ND	ug/l	NC		20
trans-1,2-Dichloroethene	ND	ND	ug/l	NC		20
1,1-Dichloroethane	ND	ND	ug/l	NC		20
2,2-Dichloropropane	ND	ND	ug/l	NC		20
cis-1,2-Dichloroethene	ND	ND	ug/l	NC		20
Chloroform	ND	ND	ug/l	NC		20
Bromochloromethane	ND	ND	ug/l	NC		20
1,1,1-Trichloroethane	ND	ND	ug/l	NC		20
1,1-Dichloropropene	ND	ND	ug/l	NC		20
Carbon tetrachloride	ND	ND	ug/l	NC		20
1,2-Dichloroethane	ND	ND	ug/l	NC		20
Benzene	ND	ND	ug/l	NC		20
Trichloroethene	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE MA

Project Number: 2170766

Lab Number: L2011300

Report Date: 04/07/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1351826-5 QC Sample: L2011295-02 Client ID: DUP Sample						
1,2-Dichloropropane	ND	ND	ug/l	NC		20
Bromodichloromethane	ND	ND	ug/l	NC		20
Dibromomethane	ND	ND	ug/l	NC		20
cis-1,3-Dichloropropene	ND	ND	ug/l	NC		20
Toluene	ND	ND	ug/l	NC		20
trans-1,3-Dichloropropene	ND	ND	ug/l	NC		20
1,1,2-Trichloroethane	ND	ND	ug/l	NC		20
1,3-Dichloropropane	ND	ND	ug/l	NC		20
Tetrachloroethene	ND	ND	ug/l	NC		20
Dibromochloromethane	ND	ND	ug/l	NC		20
1,2-Dibromoethane	ND	ND	ug/l	NC		20
Chlorobenzene	ND	ND	ug/l	NC		20
1,1,1,2-Tetrachloroethane	ND	ND	ug/l	NC		20
Ethylbenzene	ND	ND	ug/l	NC		20
p/m-Xylene	ND	ND	ug/l	NC		20
o-Xylene	ND	ND	ug/l	NC		20
Styrene	ND	ND	ug/l	NC		20
Isopropylbenzene	ND	ND	ug/l	NC		20
Bromoform	ND	ND	ug/l	NC		20
1,1,2,2-Tetrachloroethane	ND	ND	ug/l	NC		20
1,2,3-Trichloropropane	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE MA

Project Number: 2170766

Lab Number: L2011300

Report Date: 04/07/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1351826-5 QC Sample: L2011295-02 Client ID: DUP Sample						
Xylene (Total) <sup>1</sup>	ND	ND	ug/l	NC		20
n-Propylbenzene	ND	ND	ug/l	NC		20
Bromobenzene	ND	ND	ug/l	NC		20
Trihalomethanes, Total	ND	ND	ug/l	NC		20
1,3,5-Trimethylbenzene	ND	ND	ug/l	NC		20
o-Chlorotoluene	ND	ND	ug/l	NC		20
p-Chlorotoluene	ND	ND	ug/l	NC		20
tert-Butylbenzene	ND	ND	ug/l	NC		20
1,2,4-Trimethylbenzene	ND	ND	ug/l	NC		20
sec-Butylbenzene	ND	ND	ug/l	NC		20
p-Isopropyltoluene	ND	ND	ug/l	NC		20
1,3-Dichlorobenzene	ND	ND	ug/l	NC		20
1,4-Dichlorobenzene	ND	ND	ug/l	NC		20
n-Butylbenzene	ND	ND	ug/l	NC		20
1,2-Dichlorobenzene	ND	ND	ug/l	NC		20
1,2-Dibromo-3-chloropropane	ND	ND	ug/l	NC		20
1,2,4-Trichlorobenzene	ND	ND	ug/l	NC		20
Hexachlorobutadiene	ND	ND	ug/l	NC		20
Naphthalene	ND	ND	ug/l	NC		20
1,2,3-Trichlorobenzene	ND	ND	ug/l	NC		20

## Lab Duplicate Analysis

Batch Quality Control

Project Name: BARNSTABLE MA

Project Number: 2170766

Lab Number: L2011300

Report Date: 04/07/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1351826-5 QC Sample: L2011295-02 Client ID: DUP Sample						

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	106		107		80-120
4-Bromofluorobenzene	86		85		80-120

# SEMIVOLATILES

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

**SAMPLE RESULTS**

Lab ID: L2011300-01  
 Client ID: TW-1G-20  
 Sample Location: BARNSTABLE MA

Date Collected: 03/12/20 15:00  
 Date Received: 03/12/20  
 Field Prep: Refer to COC

## Sample Depth:

Matrix: Dw  
 Analytical Method: 120,522  
 Analytical Date: 03/19/20 09:52  
 Analyst: PS

Extraction Method: EPA 522  
 Extraction Date: 03/18/20 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.150	--	1
Surrogate			% Recovery	Qualifier	Acceptance Criteria	
1,4-Dioxane-d8			95		70-130	



**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

**Method Blank Analysis  
Batch Quality Control**

Analytical Method: 120,522  
Analytical Date: 03/19/20 06:40  
Analyst: PS

Extraction Method: EPA 522  
Extraction Date: 03/18/20 06:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01 Batch: WG1352500-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	94		70-130

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01 Batch: WG1352500-2 WG1352500-3								
1,4-Dioxane	92		91		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	93		91		70-130

## METALS

Project Name: BARNSTABLE MA

Lab Number: L2011300

Project Number: 2170766

Report Date: 04/07/20

## SAMPLE RESULTS

Lab ID: L2011300-01  
 Client ID: TW-1G-20  
 Sample Location: BARNSTABLE MA

Date Collected: 03/12/20 15:00  
 Date Received: 03/12/20  
 Field Prep: Refer to COC

Sample Depth:  
 Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab</b>											
Aluminum, Total	ND		mg/l	0.100	--	1	03/13/20 20:18	03/19/20 08:17	EPA 3005A	19,200.7	BV
Antimony, Total	ND		mg/l	0.0040	--	1	03/13/20 20:18	03/18/20 11:10	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.0010	--	1	03/13/20 20:18	03/18/20 11:10	EPA 3005A	3,200.8	AM
Barium, Total	0.0014		mg/l	0.0010	--	1	03/13/20 20:18	03/18/20 11:10	EPA 3005A	3,200.8	AM
Beryllium, Total	ND		mg/l	0.0010	--	1	03/13/20 20:18	03/18/20 11:10	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.0002	--	1	03/13/20 20:18	03/18/20 11:10	EPA 3005A	3,200.8	AM
Calcium, Total	2.40		mg/l	0.100	--	1	03/13/20 20:18	03/19/20 07:19	EPA 3005A	19,200.7	PS
Chromium, Total	ND		mg/l	0.0010	--	1	03/13/20 20:18	03/18/20 11:10	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.010	--	1	03/13/20 20:18	03/19/20 08:17	EPA 3005A	19,200.7	BV
Iron, Total	ND		mg/l	0.050	--	1	03/13/20 20:18	03/19/20 08:17	EPA 3005A	19,200.7	BV
Lead, Total	ND		mg/l	0.0010	--	1	03/13/20 20:18	03/18/20 11:10	EPA 3005A	3,200.8	AM
Magnesium, Total	1.47		mg/l	0.100	--	1	03/13/20 20:18	03/19/20 07:19	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	03/13/20 20:18	03/19/20 08:17	EPA 3005A	19,200.7	BV
Mercury, Total	ND		mg/l	0.0002	--	1	03/13/20 20:22	03/14/20 15:11	EPA 245.1	3,245.1	AL
Nickel, Total	ND		mg/l	0.0020	--	1	03/13/20 20:18	03/18/20 11:10	EPA 3005A	3,200.8	AM
Potassium, Total	ND		mg/l	2.50	--	1	03/13/20 20:18	03/19/20 08:17	EPA 3005A	19,200.7	BV
Selenium, Total	ND		mg/l	0.0050	--	1	03/13/20 20:18	03/18/20 11:10	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.007	--	1	03/13/20 20:18	03/19/20 08:17	EPA 3005A	19,200.7	BV
Sodium, Total	9.12		mg/l	2.00	--	1	03/13/20 20:18	03/19/20 08:17	EPA 3005A	19,200.7	BV
Thallium, Total	ND		mg/l	0.0010	--	1	03/13/20 20:18	03/18/20 11:10	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.050	--	1	03/13/20 20:18	03/19/20 08:17	EPA 3005A	19,200.7	BV
<b>Total Hardness by SM 2340B - Mansfield Lab</b>											
Hardness	12.0		mg/l	0.660	NA	1	03/13/20 20:18	03/19/20 07:19	EPA 3005A	19,200.7	PS



**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1350757-1									
Antimony, Total	ND	mg/l	0.0040	--	1	03/13/20 20:18	03/18/20 10:41	3,200.8	AM
Arsenic, Total	ND	mg/l	0.0010	--	1	03/13/20 20:18	03/18/20 10:41	3,200.8	AM
Barium, Total	ND	mg/l	0.0010	--	1	03/13/20 20:18	03/18/20 10:41	3,200.8	AM
Beryllium, Total	ND	mg/l	0.0010	--	1	03/13/20 20:18	03/18/20 10:41	3,200.8	AM
Cadmium, Total	ND	mg/l	0.0002	--	1	03/13/20 20:18	03/18/20 10:41	3,200.8	AM
Chromium, Total	ND	mg/l	0.0010	--	1	03/13/20 20:18	03/18/20 10:41	3,200.8	AM
Lead, Total	ND	mg/l	0.0010	--	1	03/13/20 20:18	03/18/20 10:41	3,200.8	AM
Nickel, Total	ND	mg/l	0.0020	--	1	03/13/20 20:18	03/18/20 10:41	3,200.8	AM
Selenium, Total	ND	mg/l	0.0050	--	1	03/13/20 20:18	03/18/20 10:41	3,200.8	AM
Thallium, Total	ND	mg/l	0.0010	--	1	03/13/20 20:18	03/18/20 10:41	3,200.8	AM

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1350758-1									
Aluminum, Total	ND	mg/l	0.100	--	1	03/13/20 20:18	03/19/20 06:25	19,200.7	BV
Calcium, Total	ND	mg/l	0.100	--	1	03/13/20 20:18	03/19/20 06:52	19,200.7	PS
Copper, Total	ND	mg/l	0.010	--	1	03/13/20 20:18	03/19/20 06:25	19,200.7	BV
Iron, Total	ND	mg/l	0.050	--	1	03/13/20 20:18	03/19/20 06:25	19,200.7	BV
Magnesium, Total	ND	mg/l	0.100	--	1	03/13/20 20:18	03/19/20 06:52	19,200.7	PS
Manganese, Total	ND	mg/l	0.010	--	1	03/13/20 20:18	03/19/20 06:25	19,200.7	BV
Potassium, Total	ND	mg/l	2.50	--	1	03/13/20 20:18	03/19/20 06:25	19,200.7	BV
Silver, Total	ND	mg/l	0.007	--	1	03/13/20 20:18	03/19/20 06:25	19,200.7	BV
Sodium, Total	ND	mg/l	2.00	--	1	03/13/20 20:18	03/19/20 06:25	19,200.7	BV
Zinc, Total	ND	mg/l	0.050	--	1	03/13/20 20:18	03/19/20 06:25	19,200.7	BV

### Prep Information

Digestion Method: EPA 3005A



Project Name: BARNSTABLE MA

Lab Number: L2011300

Project Number: 2170766

Report Date: 04/07/20

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1350758-1									
Hardness	ND	mg/l	0.660	NA	1	03/13/20 20:18	03/19/20 06:52	19,200.7	PS

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1350764-1									
Mercury, Total	ND	mg/l	0.0002	--	1	03/13/20 20:22	03/14/20 15:08	3,245.1	AL

### Prep Information

Digestion Method: EPA 245.1

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** BARNSTABLE MA

**Project Number:** 2170766

**Lab Number:** L2011300

**Report Date:** 04/07/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1350757-2								
Antimony, Total	96		-		85-115	-		
Arsenic, Total	106		-		85-115	-		
Barium, Total	107		-		85-115	-		
Beryllium, Total	106		-		85-115	-		
Cadmium, Total	114		-		85-115	-		
Chromium, Total	106		-		85-115	-		
Lead, Total	107		-		85-115	-		
Nickel, Total	107		-		85-115	-		
Selenium, Total	107		-		85-115	-		
Thallium, Total	106		-		85-115	-		

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE MA

Project Number: 2170766

Lab Number: L2011300

Report Date: 04/07/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
<b>Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1350758-2</b>					
Aluminum, Total	108	-	85-115	-	
Calcium, Total	95	-	85-115	-	
Copper, Total	98	-	85-115	-	
Iron, Total	109	-	85-115	-	
Magnesium, Total	102	-	85-115	-	
Manganese, Total	99	-	85-115	-	
Potassium, Total	107	-	85-115	-	
Silver, Total	101	-	85-115	-	
Sodium, Total	106	-	85-115	-	
Zinc, Total	109	-	85-115	-	
<b>Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1350758-2</b>					
Hardness	99	-	85-115	-	
<b>Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1350764-2</b>					
Mercury, Total	99	-	85-115	-	



### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1350757-3    QC Sample: L2010871-01    Client ID: MS Sample												
Antimony, Total	ND	0.5	0.5424	108	-	-	-	-	70-130	-	-	20
Arsenic, Total	ND	0.12	0.1231	102	-	-	-	-	70-130	-	-	20
Barium, Total	0.0291	2	2.175	107	-	-	-	-	70-130	-	-	20
Beryllium, Total	ND	0.05	0.0531	106	-	-	-	-	70-130	-	-	20
Cadmium, Total	ND	0.051	0.0580	114	-	-	-	-	70-130	-	-	20
Chromium, Total	ND	0.2	0.2104	105	-	-	-	-	70-130	-	-	20
Lead, Total	ND	0.51	0.5443	107	-	-	-	-	70-130	-	-	20
Nickel, Total	ND	0.5	0.5123	102	-	-	-	-	70-130	-	-	20
Selenium, Total	ND	0.12	0.1258	105	-	-	-	-	70-130	-	-	20
Thallium, Total	ND	0.12	0.1272	106	-	-	-	-	70-130	-	-	20
Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1350758-3    QC Sample: L2010871-01    Client ID: MS Sample												
Aluminum, Total	ND	2	2.13	106	-	-	-	-	75-125	-	-	20
Calcium, Total	74.1	10	82.0	79	-	-	-	-	75-125	-	-	20
Copper, Total	ND	0.25	0.257	103	-	-	-	-	75-125	-	-	20
Iron, Total	0.095	1	1.15	105	-	-	-	-	75-125	-	-	20
Magnesium, Total	41.0	10	50.6	96	-	-	-	-	75-125	-	-	20
Manganese, Total	ND	0.5	0.479	96	-	-	-	-	75-125	-	-	20
Potassium, Total	ND	10	13.1	131	Q	-	-	-	75-125	-	-	20
Silver, Total	ND	0.05	0.051	102	-	-	-	-	75-125	-	-	20
Sodium, Total	59.9	10	68.5	86	-	-	-	-	75-125	-	-	20
Zinc, Total	ND	0.5	0.548	110	-	-	-	-	75-125	-	-	20

### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
<b>Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1350758-3    QC Sample: L2010871-01    Client ID: MS Sample</b>									
Hardness	354	66.2	413	89	-	-	75-125	-	20
<b>Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1350758-7    QC Sample: L2010873-01    Client ID: MS Sample</b>									
Aluminum, Total	ND	2	ND	0	Q	-	75-125	-	20
Calcium, Total	79.9	10	81.4	15	Q	-	75-125	-	20
Copper, Total	0.10	0.25	0.102	1	Q	-	75-125	-	20
Iron, Total	0.154	1	0.160	1	Q	-	75-125	-	20
Magnesium, Total	42.3	10	43.0	7	Q	-	75-125	-	20
Manganese, Total	ND	0.5	ND	0	Q	-	75-125	-	20
Potassium, Total	ND	10	ND	0	Q	-	75-125	-	20
Silver, Total	ND	0.05	ND	0	Q	-	75-125	-	20
Sodium, Total	35.4	10	36.0	6	Q	-	75-125	-	20
Zinc, Total	ND	0.5	ND	0	Q	-	75-125	-	20
<b>Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1350758-7    QC Sample: L2010873-01    Client ID: MS Sample</b>									
Hardness	374	66.2	380	9	Q	-	75-125	-	20
<b>Total Metals - Mansfield Lab Associated sample(s): 01    QC Batch ID: WG1350764-3    QC Sample: L2011300-01    Client ID: TW-1G-20</b>									
Mercury, Total	ND	0.005	0.0047	95	-	-	70-130	-	20



## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: BARNSTABLE MA

Project Number: 2170766

Lab Number: L2011300

Report Date: 04/07/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1350757-4 QC Sample: L2010871-01 Client ID: DUP Sample</b>						
Arsenic, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1350758-4 QC Sample: L2010871-01 Client ID: DUP Sample</b>						
Iron, Total	0.095	0.093	mg/l	2		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1350758-8 QC Sample: L2010873-01 Client ID: DUP Sample</b>						
Iron, Total	0.154	0.183	mg/l	17		20
<b>Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1350764-4 QC Sample: L2011300-01 Client ID: TW-1G-20</b>						
Mercury, Total	ND	0.0016	mg/l	NC		20

# **INORGANICS & MISCELLANEOUS**

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

**SAMPLE RESULTS**

**Lab ID:** L2011300-01  
**Client ID:** TW-1G-20  
**Sample Location:** BARNSTABLE MA

**Date Collected:** 03/12/20 15:00  
**Date Received:** 03/12/20  
**Field Prep:** Refer to COC

**Sample Depth:**  
**Matrix:** Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Perchlorate by IC-MS-MS - Westborough Lab</b>										
Perchlorate	ND		ug/l	0.050	--	1	-	03/13/20 16:38	71,332.0	AM
<b>General Chemistry - Westborough Lab</b>										
Turbidity	0.24		NTU	0.20	--	1	-	03/14/20 07:23	44,180.1	JA
Odor @ 60 C	NO ODOR		TON	1	--	1	-	03/12/20 23:12	121,2150B	AS
Color, Apparent	ND		A.P.C.U.	5.0	--	1	-	03/13/20 11:48	121,2120B	JA
Alkalinity, Total	10.2		mg CaCO3/L	2.00	NA	1	-	03/14/20 04:31	121,2320B	MA
Solids, Total Dissolved	29.		mg/l	10	--	1	-	03/13/20 12:00	121,2540C	DW
Cyanide, Total	ND		mg/l	0.005	--	1	03/15/20 14:50	03/16/20 11:43	121,4500CN-CE	LH
Fluoride	ND		mg/l	0.20	--	1	-	03/14/20 08:00	121,4500F-C	CW
pH (H)	6.0		SU	-	NA	1	-	03/13/20 04:53	121,4500H+-B	CB
Nitrogen, Nitrite	ND		mg/l	0.050	--	1	-	03/13/20 08:21	44,353.2	MR
Nitrogen, Nitrate	ND		mg/l	0.10	--	1	-	03/13/20 08:21	44,353.2	MR
<b>Bacteria in Water - Westborough Lab</b>										
Coliform, Total	Negative		col/100ml	-	NA	1	-	03/13/20 10:35	121,9223B	AA
Escherichia Coli	Negative		col/100ml	-	NA	1	-	03/13/20 10:35	121,9223B	AA
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	13.1		mg/l	0.500	--	1	-	03/17/20 16:45	44,300.0	DP
Sulfate	6.61		mg/l	1.00	--	1	-	03/17/20 16:45	44,300.0	DP



**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1350489-1										
Odor	NO ODOR		TON	1	--	1	-	03/12/20 23:12	121,2150B	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1350540-1										
Nitrogen, Nitrate	ND		mg/l	0.10	--	1	-	03/13/20 06:38	44,353.2	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1350541-1										
Nitrogen, Nitrite	ND		mg/l	0.050	--	1	-	03/13/20 06:40	44,353.2	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1350552-1										
Solids, Total Dissolved	ND		mg/l	10	--	1	-	03/13/20 12:00	121,2540C	DW
Bacteria in Water - Westborough Lab for sample(s): 01 Batch: WG1350698-1										
Coliform, Total	Negative		col/100ml	-	NA	1	-	03/13/20 10:35	121,9223B	AA
Escherichia Coli	Negative		col/100ml	-	NA	1	-	03/13/20 10:35	121,9223B	AA
Perchlorate by IC-MS-MS - Westborough Lab for sample(s): 01 Batch: WG1350806-1										
Perchlorate	ND		ug/l	0.050	--	1	-	03/13/20 15:50	71,332.0	AM
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1350967-1										
Fluoride	ND		mg/l	0.20	--	1	-	03/14/20 08:00	121,4500F-C	CW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1351005-1										
Turbidity	ND		NTU	0.20	--	1	-	03/14/20 07:23	44,180.1	JA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1351056-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	03/14/20 04:31	121,2320B	MA
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1351228-1										
Cyanide, Total	ND		mg/l	0.005	--	1	03/15/20 14:50	03/16/20 11:09	121,4500CN-CE	LH
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1352224-1										
Chloride	ND		mg/l	0.500	--	1	-	03/17/20 16:23	44,300.0	DP
Sulfate	ND		mg/l	1.00	--	1	-	03/17/20 16:23	44,300.0	DP

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: BARNSTABLE MA

Project Number: 2170766

Lab Number: L2011300

Report Date: 04/07/20

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1350536-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1350540-2								
Nitrogen, Nitrate	94		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1350541-2								
Nitrogen, Nitrite	96		-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1350552-2								
Solids, Total Dissolved	89		-		80-120	-		
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 Batch: WG1350806-2								
Perchlorate	104		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1350967-2								
Fluoride	91		-		78-115	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1351005-2								
Turbidity	105		-		90-110	-		

## Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE MA

Project Number: 2170766

Lab Number: L2011300

Report Date: 04/07/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1351056-2					
Alkalinity, Total	103	-	90-110	-	10
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1351228-2					
Cyanide, Total	98	-	90-110	-	
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1352224-2					
Chloride	102	-	90-110	-	
Sulfate	100	-	90-110	-	



### Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1350540-4 QC Sample: L2011300-01 Client ID: TW-1G-20												
Nitrogen, Nitrate	ND	4	3.6	90	-	-	-	-	83-113	-	-	6
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1350541-4 QC Sample: L2011300-01 Client ID: TW-1G-20												
Nitrogen, Nitrite	ND	4	3.4	85	-	-	-	-	80-120	-	-	20
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1350806-3 QC Sample: L2011300-01 Client ID: TW-1G-20												
Perchlorate	ND	0.05	0.073	75	Q	-	-	-	80-120	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1350967-4 QC Sample: L2011300-01 Client ID: TW-1G-20												
Fluoride	ND	2	1.8	92	-	-	-	-	69-124	-	-	13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1351056-4 QC Sample: L2010991-07 Client ID: MS Sample												
Alkalinity, Total	226	100	325	99	-	-	-	-	86-116	-	-	10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1351228-4 QC Sample: L2011506-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.202	101	-	-	-	-	90-110	-	-	30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1352224-3 QC Sample: L2011231-03 Client ID: MS Sample												
Chloride	18.9	4	22.9	99	-	-	-	-	90-110	-	-	18
Sulfate	9.26	8	17.0	97	-	-	-	-	90-110	-	-	20

## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: BARNSTABLE MA

Project Number: 2170766

Lab Number: L2011300

Report Date: 04/07/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1350489-2 QC Sample: L2011300-01 Client ID: TW-1G-20						
Odor	NO ODOR	NO ODOR	TON	NC		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1350536-2 QC Sample: L2011320-01 Client ID: DUP Sample						
pH	8.1	8.1	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1350540-3 QC Sample: L2011300-01 Client ID: TW-1G-20						
Nitrogen, Nitrate	ND	ND	mg/l	NC		6
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1350541-3 QC Sample: L2011300-01 Client ID: TW-1G-20						
Nitrogen, Nitrite	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1350552-3 QC Sample: L2010766-01 Client ID: DUP Sample						
Solids, Total Dissolved	13000	13000	mg/l	0		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1350724-1 QC Sample: L2011300-01 Client ID: TW-1G-20						
Color, Apparent	ND	ND	A.P.C.U.	NC		
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1350806-4 QC Sample: L2011300-01 Client ID: TW-1G-20						
Perchlorate	ND	ND	ug/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1350967-3 QC Sample: L2011300-01 Client ID: TW-1G-20						
Fluoride	ND	ND	mg/l	NC		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1351005-3 QC Sample: L2011300-01 Client ID: TW-1G-20						
Turbidity	0.24	0.23	NTU	4		13

## Lab Duplicate Analysis

*Batch Quality Control*

Project Name: BARNSTABLE MA

Project Number: 2170766

Lab Number: L2011300

Report Date: 04/07/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1351056-3 QC Sample: L2010991-07 Client ID: DUP Sample					
Alkalinity, Total	226	234	mg CaCO3/L	3	10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1351228-3 QC Sample: L2011506-01 Client ID: DUP Sample					
Cyanide, Total	0.005	ND	mg/l	NC	30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1352224-4 QC Sample: L2011231-03 Client ID: DUP Sample					
Chloride	18.9	19.4	mg/l	3	18
Sulfate	9.26	9.44	mg/l	2	20

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

Serial\_No:04072017:35  
**Lab Number:** L2011300  
**Report Date:** 04/07/20

**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

**Cooler Information**

<b>Cooler</b>	<b>Custody Seal</b>
A	Absent
B	Absent

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2011300-01A	Vial HCl preserved	A	NA		4.0	Y	Absent		524.2(14)
L2011300-01B	Vial HCl preserved	A	NA		4.0	Y	Absent		524.2(14)
L2011300-01C	Vial unpreserved	A	7	7	4.0	Y	Absent		SUB-RADON(4)
L2011300-01D	Vial unpreserved	A	7	7	4.0	Y	Absent		SUB-RADON(4)
L2011300-01E	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		SUB-531.1(28)
L2011300-01F	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		SUB-515.3(14)
L2011300-01G	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		SUB-515.3(14)
L2011300-01H	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		SUB-515.3(14)
L2011300-01I	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		SUB-505(14),SUB-504.1(14)
L2011300-01J	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		SUB-505(14),SUB-504.1(14)
L2011300-01K	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		SUB-505(14),SUB-504.1(14)
L2011300-01L	Bacteria Cup Na2S2O3 preserved	A	NA		4.0	Y	Absent		T-COLI-C(1.25)
L2011300-01M	Bacteria Cup Na2S2O3 preserved	A	NA		4.0	Y	Absent		T-COLI-C(1.25)
L2011300-01N	Bacteria Cup unpreserved	A	NA		4.0	Y	Absent		PERC-332(28)
L2011300-01O	Plastic 250ml unpreserved	A	NA		4.0	Y	Absent		PERC-332(28)
L2011300-01P	Plastic 250ml unpreserved/No Headspace	A	NA		4.0	Y	Absent		ALK-T-2320(14)
L2011300-01Q	Plastic 250ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-UI(180),CA-UI(180),AG-UI(180),K-UI(180),BE-2008T(180),HARDU(180),MG-UI(180),FE-UI(180),AS-2008T(180),HG-U(28),SE-2008T(180),AL-UI(180),BA-2008T(180),NA-UI(180),MN-UI(180),SB-2008T(180),CR-2008T(180),CU-UI(180),TL-2008T(180),PB-2008T(180)

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Serial\_No:**04072017:35  
**Lab Number:** L2011300  
**Report Date:** 04/07/20

**Container Information**

<b>Container ID</b>	<b>Container Type</b>	<b>Cooler</b>	<b>Initial pH</b>	<b>Final pH</b>	<b>Temp deg C</b>	<b>Pres</b>	<b>Seal</b>	<b>Frozen Date/Time</b>	<b>Analysis(*)</b>
L2011300-01Q1	Plastic 950ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		CD-2008T(180),ZN-UI(180),CA-UI(180),NI-2008T(180),AG-UI(180),K-UI(180),BE-2008T(180),MG-UI(180),FE-UI(180),HARDU(180),SE-2008T(180),AS-2008T(180),HG-U(28),BA-2008T(180),NA-UI(180),AL-UI(180),MN-UI(180),SB-2008T(180),CU-UI(180),TL-2008T(180),PB-2008T(180),CR-2008T(180)
L2011300-01Q2	Plastic 950ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		CD-2008T(180),ZN-UI(180),CA-UI(180),NI-2008T(180),AG-UI(180),K-UI(180),BE-2008T(180),MG-UI(180),FE-UI(180),HARDU(180),SE-2008T(180),AS-2008T(180),HG-U(28),BA-2008T(180),NA-UI(180),AL-UI(180),MN-UI(180),SB-2008T(180),CU-UI(180),TL-2008T(180),PB-2008T(180),CR-2008T(180)
L2011300-01R	Plastic 250ml NaOH preserved	A	>12	>12	4.0	Y	Absent		TCN-4500(14)
L2011300-01S	Plastic 950ml unpreserved	A	7	7	4.0	Y	Absent		F-4500(28),SO4-300(28),CL-300(28),TURB-180(2),NO2-353(2),TDS-2540(7),PH-4500(.01),NO3-353(2)
L2011300-01T	Amber 1000ml unpreserved	A	7	7	4.0	Y	Absent		COLOR-A-2120(2),ODOR-2150(1)
L2011300-01U	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	4.0	Y	Absent		A2-14DIOXANE-522(28)
L2011300-01U1	Amber 250ml unpreserved	A	7	7	4.0	Y	Absent		HOLD-SVOC(180)
L2011300-01V	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	4.0	Y	Absent		A2-14DIOXANE-522(28)
L2011300-01V1	Amber 250ml unpreserved	A	7	7	4.0	Y	Absent		HOLD-SVOC(180)
L2011300-01W	Amber 1000ml NaSulfite/HCL preserved	A	<2	<2	4.0	Y	Absent		SUB-525.2(14)
L2011300-01W1	Amber 1000ml NaSulfite/HCL preserved	A	<2	<2	4.0	Y	Absent		SUB-525.2(14)
L2011300-01X	Plastic 500ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		SUB-URANIUM(180)
L2011300-01Y	Plastic 950ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		SUB-RA228(180)
L2011300-01Y1	Plastic 950ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		SUB-RA228(180)
L2011300-01Y2	Plastic 950ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		SUB-RA228(180)
L2011300-01Y3	Plastic 950ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		SUB-ALPHA/BETA(180)
L2011300-01Z	Plastic 950ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		SUB-RA226(180)
L2011300-01Z1	Plastic 950ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		SUB-RA226(180)
L2011300-01Z2	Plastic 950ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		SUB-RA226(180)
L2011300-01Z3	Plastic 950ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		SUB-ALPHA/BETA(180)

**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

## GLOSSARY

### Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)  Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### Footnotes

Report Format: Data Usability Report



**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Difference:** With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**PAH Total:** With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

**PFAS Total:** With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report



**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

**Data Qualifiers**

than 5x the RL. (Metals only.)

- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.



**Project Name:** BARNSTABLE MA  
**Project Number:** 2170766

**Lab Number:** L2011300  
**Report Date:** 04/07/20

## REFERENCES

- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 16 Methods for the Determination of Organic Compounds in Drinking Water - Supplement II. EPA/600/R-92/129, August 1992.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 71 Determination of Perchlorate in Drinking Water by Ion Chromatography with Suppressed Conductivity and Electrospray Ionization Mass Spectrometry. EPA Method 332.0, EPA/600/R-05/049. Revision 1.0, March 2005.
- 120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624/624.1:** m/p-xylene, o-xylene

**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### Mansfield Facility

**SM 2540D:** TSS

**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**EPA TO-12** Non-methane organics

**EPA 3C** Fixed gases

**Biological Tissue Matrix:** EPA 3050B

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The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

**EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**

**EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

**SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.

**EPA 624.1:** Volatile Halocarbons & Aromatics,

**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.

**EPA 522.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

**EPA 245.1** Hg.

**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.









# GRANITE STATE

## ANALYTICAL SERVICES, LLC.

22 Manchester Road, Unit 2, Derry, NH 03038

Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 04/07/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2003-01526-001  
**SAMPLED BY:** Alpha Analytical  
**SAMPLE ADDRESS:** L2011300  
 TW-1G-20  
 MA

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	▽
Fails State Guideline	✗
Attention	⚠

**DATE AND TIME COLLECTED:** 03/12/2020 3:00PM  
**DATE AND TIME RECEIVED:** 03/13/2020 12:00PM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE 1.2° CELSIUS  
**CLIENT JOB #** L2011300

**MORE LOC INFO:**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
1,2-Dibromo-3-chloropropane (DBCP)*	<0.02	ug/L	✓		0.02	0.2 ug/L	EPA 504.1	TA-NH	03/18/20 9:38PM
Date Extracted	-					No Limit	EPA 504.1	GQ-NH	03/18/20 2:35PM
Ethylene Dibromide (EDB)*	<0.02	ug/L	✓		0.02	0.05 ug/L	EPA 504.1	TA-NH	03/18/20 9:38PM
Aroclor 1016 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/18/20 11:41PM
Aroclor 1221 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/18/20 11:41PM
Aroclor 1232 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/18/20 11:41PM
Aroclor 1242 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/18/20 11:41PM
Aroclor 1248 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/18/20 11:41PM
Aroclor 1254 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/18/20 11:41PM
Aroclor 1260 Screen*	<0.2	ug/L			0.2	No Limit	EPA 505	GQ-NH	03/18/20 11:41PM
Chlordane*	<0.2	ug/L	✓		0.2	2 ug/L	EPA 505	GQ-NH	03/18/20 11:41PM
Date Extracted	-					No Limit	EPA 505	GQ-NH	03/18/20 2:35PM
Toxaphene*	<1.0	ug/L	✓		1.0	3 ug/L	EPA 505	GQ-NH	03/18/20 11:41PM
2,4,5-TP (Silvex)*	<0.25	ug/L	✓		0.25	50 ug/L	EPA 515.3	TA-NH	03/19/20 10:53PM
2,4-D*	<1	ug/L	✓		1	70 ug/L	EPA 515.3	TA-NH	03/19/20 10:53PM
Dalapon*	<1	ug/L	✓		1	200 ug/L	EPA 515.3	TA-NH	03/19/20 10:53PM
Date Extracted	-					No Limit	EPA 515.3	TA-NH	03/19/20 8:55AM
Dicamba*	<0.18	ug/L			0.18	No Limit	EPA 515.3	TA-NH	03/19/20 10:53PM
Dinoseb*	<0.5	ug/L	✓		0.5	7 ug/L	EPA 515.3	TA-NH	03/19/20 10:53PM
Pentachlorophenol*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 515.3	TA-NH	03/19/20 10:53PM
Picloram*	<1.3	ug/L	✓		1.3	500 ug/L	EPA 515.3	TA-NH	03/19/20 10:53PM
2,4-Dichlorophenylacetic acid	101	%	✓			70-130%	EPA 515.3 - SS	TA-NH	03/19/20 10:53PM
Alachlor*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
Aldrin*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/17/20 9:13PM
Atrazine*	<0.1	ug/L	✓		0.1	3 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
Benzo(a)pyrene*	<0.1	ug/L	✓		0.1	0.2 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
Butachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/17/20 9:13PM
Date Extracted	-					No Limit	EPA 525.2	GQ-NH	03/16/20 9:55AM
Di(2-ethylhexyl)adipate*	<0.6	ug/L	✓		0.6	400 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
Di(2-ethylhexyl)phthalate*	<3	ug/L	✓		3	6 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
Dieldrin*	<0.04	ug/L			0.04	No Limit	EPA 525.2	DD-NH	03/17/20 9:13PM



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website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 04/07/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581

**SAMPLE ID#:** 2003-01526-001  
**SAMPLED BY:** Alpha Analytical

**SAMPLE ADDRESS:** L2011300  
 TW-1G-20  
 MA

**MORE LOC INFO:**

**DATE AND TIME COLLECTED:** 03/12/2020 3:00PM  
**DATE AND TIME RECEIVED:** 03/13/2020 12:00PM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE 1.2° CELSIUS  
**CLIENT JOB #** L2011300

Legend	
Passes	
Fails EPA Primary	
Fails EPA Secondary	
Fails State Guideline	
Attention	

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Endrin*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
Heptachlor Epoxide*	<0.06	ug/L	✓		0.06	0.2 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
Heptachlor*	<0.04	ug/L	✓		0.04	0.4 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
Hexachlorobenzene*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
Hexachlorocyclopentadiene*	<0.1	ug/L	✓		0.1	50 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
Lindane*	<0.07	ug/L	✓		0.07	0.2 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
Methoxychlor*	<0.1	ug/L	✓		0.1	40 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
Metolachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/17/20 9:13PM
Metribuzin*	<0.1	ug/L	✓		0.1	70 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
Propachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	03/17/20 9:13PM
Simazine*	<0.1	ug/L	✓		0.1	4 ug/L	EPA 525.2	DD-NH	03/17/20 9:13PM
1,3-Dimethyl-2-nitrobenzene	102	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/17/20 9:13PM
Perylene-d12	88	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/17/20 9:13PM
Pyrene-d10	98	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/17/20 9:13PM
Triphenylphosphate	108	%	✓			70-130%	EPA 525.2 - SS	DD-NH	03/17/20 9:13PM
3-Hydroxycarbofuran*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	03/19/20 3:32AM
Aldicarb Sulfone*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	03/19/20 3:32AM
Aldicarb Sulfoxide*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	03/19/20 3:32AM
Aldicarb*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	03/19/20 3:32AM
Carbaryl*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	03/19/20 3:32AM
Carbofuran*	<0.9	ug/L	✓		0.9	40 ug/L	EPA 531.1	KV-NH	03/19/20 3:32AM
Date Extracted	-					No Limit	EPA 531.1	KV-NH	03/18/20 2:53PM
Methiocarb*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	03/19/20 3:32AM
Methomyl*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	03/19/20 3:32AM
Oxamyl (Vydate)*	<1	ug/L	✓		1	200 ug/L	EPA 531.1	KV-NH	03/19/20 3:32AM
Propoxur (Baygon)*	<1	ug/L			1	No Limit	EPA 531.1	KV-NH	03/19/20 3:32AM



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**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2003-01526-001  
**SAMPLED BY:** Alpha Analytical

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	▽
Fails State Guideline	✕
Attention	! (triangle)

**SAMPLE ADDRESS:** L2011300  
 TW-1G-20  
 MA  
**MORE LOC INFO:**

**DATE AND TIME COLLECTED:** 03/12/2020 3:00PM  
**DATE AND TIME RECEIVED:** 03/13/2020 12:00PM  
**ANALYSIS PACKAGE:** SOC GSA MA  
**RECEIPT TEMPERATURE:** ON ICE 1.2° CELSIUS  
**CLIENT JOB #** L2011300

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
------------------	---------	------------	------------	---------	----	-------	--------	---------	--------------------

The results presented in this report relate to the samples listed above in the condition in which they were received.  
 RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

Note: Analyst 2976 = Pace Analytical Services - Pittsburgh.

**\* MA Certified Analysis**

The Commonwealth of Massachusetts has set an Advisory Limit of 10,000 pCi/L for Radon in Water

---

 Donald A. D'Anjou, Ph. D.  
 Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.  
 State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |  
 This certificate shall not be reproduced, except in full, without the written approval of Granite State Analytical Services, LLC



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**DATE PRINTED:** 04/07/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2003-01526-002  
**SAMPLED BY:** Alpha Analytical

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	▽
Fails State Guideline	✕
Attention	! (in triangle)

**SAMPLE ADDRESS:** L2011300  
 TW-1G-20  
 MA

**DATE AND TIME COLLECTED:** 03/12/2020 3:00PM  
**DATE AND TIME RECEIVED:** 03/13/2020 12:00PM  
**ANALYSIS PACKAGE:** Rads Full+Beta-MA  
**RECEIPT TEMPERATURE:** ON ICE 1.2° CELSIUS

**MORE LOC INFO:**

**CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Uranium*	<1	ug/L	✓		1	30 ug/L	EPA 200.8	CW-NH	03/16/20 1:23PM
Uranium	<0.67	pCi/L	✓		0.67	20 pCi/L	EPA 200.8 Calc.	CW-NH	03/16/20 1:23PM
Analytical Gross Alpha*	<3	pCi/L			3	No Limit	EPA 900	2976	03/25/20 7:06AM
Gross Beta*	<3	pCi/L			3.0		EPA 900.0	2976	03/25/20 7:06AM
Radium 226*	<0.1	pCi/L				No Limit	EPA 903.1	2976	04/07/20 1:01PM
Radium 228*	<1	pCi/L			1	No Limit	EPA 904.0	2976	04/06/20 2:09PM
Combined Radium	<1	pCi/L	✓		1	5 pCi/L	N/A Calculation	2976	04/07/20 1:50PM
Compliance Gross Alpha*	<3	pCi/L	✓		3	15 pCi/L	N/A Calculation	ES-NH	03/25/20 7:06AM

The results presented in this report relate to the samples listed above in the condition in which they were received.

RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

Note: Analyst 2976 = Pace Analytical Services - Pittsburgh.

**\* MA Certified Analysis**

The Commonwealth of Massachusetts has set an Advisory Limit of 10,000 pCi/L for Radon in Water

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Donald A. D'Anjou, Ph. D.  
 Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.  
 State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |  
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# GRANITE STATE

## ANALYTICAL SERVICES, LLC.

22 Manchester Road, Unit 2, Derry, NH 03038

Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

### CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 04/07/2020  
**CLIENT NAME:** Alpha Analytical-Westborough  
**CLIENT ADDRESS:** 8 Walkup Dr.  
 Westborough, MA 01581  
**SAMPLE ID#:** 2003-01526-003  
**SAMPLED BY:** Alpha Analytical

**SAMPLE ADDRESS:** L2011300  
 TW-1G-20  
 MA

**MORE LOC INFO:**

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	▽
Fails State Guideline	✕
Attention	⚠

**DATE AND TIME COLLECTED:** 03/12/2020 3:00PM  
**DATE AND TIME RECEIVED:** 03/13/2020 12:00PM  
**ANALYSIS PACKAGE:** Radon Water  
**RECEIPT TEMPERATURE:** ON ICE 1.2° CELSIUS  
**CLIENT JOB #**

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Radon	224	pCi/L	✓		100	10000 pCi/L (NH Limit)	SM 7500 Rn B	KP-ME	03/14/20 4:20PM

The results presented in this report relate to the samples listed above in the condition in which they were received.

RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

Note: Analyst 2976 = Pace Analytical Services - Pittsburgh.

**\* MA Certified Analysis**

The Commonwealth of Massachusetts has set an Advisory Limit of 10,000 pCi/L for Radon in Water

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Donald A. D'Anjou, Ph. D.  
Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.  
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