Clementine Dulieu

From: Clementine Dulieu
Sent: Monday, August 12, 2019 3:56 PM
To: David Costello
Cc: Larry Mastera; Julia Redden
Subject: Wayland Property Owner Data Transmittal - July 2019
Attachments: IESI Lab Report_July 2019.pdf; National Development BWSC-123 Form.pdf

Hi David,

Innovative Engineering Solutions, Inc. (IESI) collected groundwater samples from monitoring wells located on National Development property at the former Raytheon Facility located at 430 Boston Post Road in Wayland, MA in July 2019. The analytical results and BWSC-123 form are attached to this email.

These results are being sent for National Development's records.

Please let me know if you have any questions or require any additional information.

Thanks,

Clementine Dulieu
Project Geologist

ERM
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Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

3 - 13302

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: 430 Boston Post Road

City/Town: Wayland Zip Code: 01778

B. This notice is being provided to the following party:

1. Name: National Development

2. Street Address: 2310 Washington Street

City/Town: Newton Lower Falls Zip Code: 02462

C. This notice is being given to inform its recipient (the party listed in Section B):

☑ 1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.

☑ 2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.

☑ 3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: 430 Boston Post Road

City/Town: Wayland Zip Code: 01778

2. MCP phase of work during which the sampling will be/has been conducted:

☐ Immediate Response Action
☐ Release Abatement Measure
☐ Utility-related Abatement Measure
☐ Phase I Initial Site Investigation
☐ Phase II Comprehensive Site Assessment
☐ Phase III Feasibility Evaluation
☐ Phase IV Remedy Implementation Plan
☑ Phase V/Remedy Operation Status
☐ Post-Temporary Solution Operation, Maintenance and Monitoring
☐ Other _____ (specify)

3. Description of property where sampling will be/has been conducted:

☐ residential ☑ commercial ☐ industrial ☐ school/playground ☐ Other _____ (specify)

4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

Collection of groundwater samples from existing monitoring wells

E. Contact information related to the party providing this notice:

Contact Name: Jonathan Hone, Raytheon Company

Street Address: 366 Lowell Street

City/Town: Andover Zip Code: 01810

Telephone: (978) 474-5753 Email: Jonathan_R_Hone@raytheon.com

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

3 - 13302

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at http://www.mass.gov/eea/agencies/massdep/cleanup. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See http://public.dep.state.ma.us/SearchableSites2/Search.aspx to view site-specific files on-line or http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

ANALYTICAL REPORT

Lab Number:	L1929451
Client:	Innovative Engineering Solutions, Inc. 37 Pearl Street #1 Braintree, MA 02184
ATTN:	Vicki Pariyar
Phone:	(508) 623-1224
Project Name:	RAYTHEON WAYLAND
Project Number:	RA-008
Report Date:	07/15/19

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

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1929451
Report Date: 07/15/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1929451-01	MW-267S-20190708	WATER	WAYLAND, MA	07/08/19 09:20	07/08/19
L1929451-02	MW-267M-20190708	WATER	WAYLAND, MA	07/08/19 10:10	07/08/19
L1929451-03	MW-268S-20190708	WATER	WAYLAND, MA	07/08/19 06:45	07/08/19
L1929451-04	MW-268M-20190708	WATER	WAYLAND, MA	07/08/19 07:35	07/08/19
L1929451-05	REW-7-20190708	WATER	WAYLAND, MA	07/08/19 11:00	07/08/19
L1929451-06	REW-11-20190708	WATER	WAYLAND, MA	07/08/19 08:25	07/08/19
L1929451-07	DUP-20190708	WATER	WAYLAND, MA	07/08/19 00:00	07/08/19
L1929451-08	TRIP BLANKS	WATER	WAYLAND, MA	07/08/19 00:00	07/08/19

Project Name:	RAYTHEON WAYLAND	**Lab Number:**	L1929451
Project Number:	RA-008	**Report Date:**	07/15/19

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:	RAYTHEON WAYLAND	**Lab Number:**	L1929451
Project Number:	RA-008	**Report Date:**	07/15/19

Case Narrative (continued)

Sample Receipt

L1929451-01 and -06: The sample was received above the appropriate pH for the Total Metals analysis. The laboratory added additional HNO3 to a pH <2.

Volatile Organics

L1929451-01, -03, and -06: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

L1929451-05: Differences were noted between the results of the analyses which have been attributed to vial discrepancies. Further re-analysis could not be performed due to the existing vials being compromised.

Dissolved Gases

L1929451-06: The sample was collected in a pre-preserved vial; however, the pH of the sample was determined to be greater than two.

The WG1259854-5 MS recovery, performed on L1929451-01, is outside the acceptance criteria for methane (0%). The unacceptable percent recovery is attributed to the elevated concentration of target compound present in the native sample.

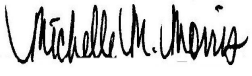
Sulfate

The WG1258092-4 MS recovery (0%), performed on L1929451-01, is outside the acceptance criteria; however, the associated LCS recovery is within criteria. No further action was taken.

Anions by Ion Chromatography

The WG1259597-3 MS recovery for Chloride (120%), performed on L1929451-03, does not apply because the 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:  Michelle M. Morris

Title: Technical Director/Representative Date: 07/15/19

ORGANICS

VOLATILES

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-01
Client ID: MW-267S-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 09:20
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 07/15/19 09:28
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	20000	E	ug/l	1.00	--	1	A
Ethene	5.16		ug/l	0.500	--	1	A
Ethane	0.788		ug/l	0.500	--	1	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-01 D
Client ID: MW-267S-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 09:20
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/11/19 23:55
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	30	--	10
1,1-Dichloroethane	ND		ug/l	7.5	--	10
Chloroform	ND		ug/l	7.5	--	10
Carbon tetrachloride	ND		ug/l	5.0	--	10
1,2-Dichloropropane	ND		ug/l	18	--	10
Dibromochloromethane	ND		ug/l	5.0	--	10
1,1,2-Trichloroethane	ND		ug/l	7.5	--	10
Tetrachloroethene	ND		ug/l	5.0	--	10
Chlorobenzene	ND		ug/l	5.0	--	10
Trichlorofluoromethane	ND		ug/l	25	--	10
1,2-Dichloroethane	ND		ug/l	5.0	--	10
1,1,1-Trichloroethane	ND		ug/l	5.0	--	10
Bromodichloromethane	ND		ug/l	5.0	--	10
trans-1,3-Dichloropropene	ND		ug/l	5.0	--	10
cis-1,3-Dichloropropene	ND		ug/l	5.0	--	10
1,3-Dichloropropene, Total	ND		ug/l	5.0	--	10
1,1-Dichloropropene	ND		ug/l	25	--	10
Bromoform	ND		ug/l	20	--	10
1,1,2,2-Tetrachloroethane	ND		ug/l	5.0	--	10
Benzene	ND		ug/l	5.0	--	10
Toluene	110		ug/l	7.5	--	10
Ethylbenzene	ND		ug/l	5.0	--	10
Chloromethane	ND		ug/l	25	--	10
Bromomethane	ND		ug/l	10	--	10
Vinyl chloride	22		ug/l	10	--	10
Chloroethane	ND		ug/l	10	--	10
1,1-Dichloroethene	ND		ug/l	5.0	--	10
trans-1,2-Dichloroethene	ND		ug/l	7.5	--	10

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-01 D
Client ID: MW-267S-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 09:20
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	31		ug/l	5.0	--	10
Trichloroethene	ND		ug/l	5.0	--	10
1,2-Dichlorobenzene	ND		ug/l	25	--	10
1,3-Dichlorobenzene	ND		ug/l	25	--	10
1,4-Dichlorobenzene	ND		ug/l	25	--	10
Methyl tert butyl ether	ND		ug/l	10	--	10
p/m-Xylene	ND		ug/l	10	--	10
o-Xylene	ND		ug/l	10	--	10
Xylenes, Total	ND		ug/l	10	--	10
cis-1,2-Dichloroethene	31		ug/l	5.0	--	10
Dibromomethane	ND		ug/l	50	--	10
1,4-Dichlorobutane	ND		ug/l	50	--	10
1,2,3-Trichloropropane	ND		ug/l	50	--	10
Styrene	ND		ug/l	10	--	10
Dichlorodifluoromethane	ND		ug/l	50	--	10
Acetone	120		ug/l	50	--	10
Carbon disulfide	ND		ug/l	50	--	10
2-Butanone	340		ug/l	50	--	10
Vinyl acetate	ND		ug/l	50	--	10
4-Methyl-2-pentanone	ND		ug/l	50	--	10
2-Hexanone	ND		ug/l	50	--	10
Ethyl methacrylate	ND		ug/l	50	--	10
Acrylonitrile	ND		ug/l	50	--	10
Bromochloromethane	ND		ug/l	25	--	10
Tetrahydrofuran	ND		ug/l	50	--	10
2,2-Dichloropropane	ND		ug/l	25	--	10
1,2-Dibromoethane	ND		ug/l	20	--	10
1,3-Dichloropropane	ND		ug/l	25	--	10
1,1,1,2-Tetrachloroethane	ND		ug/l	5.0	--	10
Bromobenzene	ND		ug/l	25	--	10
n-Butylbenzene	ND		ug/l	5.0	--	10
sec-Butylbenzene	ND		ug/l	5.0	--	10
tert-Butylbenzene	ND		ug/l	25	--	10
o-Chlorotoluene	ND		ug/l	25	--	10
p-Chlorotoluene	ND		ug/l	25	--	10
1,2-Dibromo-3-chloropropane	ND		ug/l	25	--	10
Hexachlorobutadiene	ND		ug/l	5.0	--	10

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-01 D
Client ID: MW-267S-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 09:20
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	5.0	--	10
p-Isopropyltoluene	ND		ug/l	5.0	--	10
Naphthalene	ND		ug/l	25	--	10
n-Propylbenzene	ND		ug/l	5.0	--	10
1,2,3-Trichlorobenzene	ND		ug/l	25	--	10
1,2,4-Trichlorobenzene	ND		ug/l	25	--	10
1,3,5-Trimethylbenzene	ND		ug/l	25	--	10
1,2,4-Trimethylbenzene	ND		ug/l	25	--	10
trans-1,4-Dichloro-2-butene	ND		ug/l	25	--	10
Ethyl ether	ND		ug/l	25	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	102		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-01 D
Client ID: MW-267S-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 09:20
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 07/15/19 16:40
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	15300		ug/l	2.50	--	2.5	A

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-02 Date Collected: 07/08/19 10:10
Client ID: MW-267M-20190708 Date Received: 07/08/19
Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/12/19 00:23
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-02 Date Collected: 07/08/19 10:10

Client ID: MW-267M-20190708 Date Received: 07/08/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	0.59		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	1.3		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	1.3		ug/l	1.0	--	1
cis-1,2-Dichloroethene	0.59		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-02 Date Collected: 07/08/19 10:10

Client ID: MW-267M-20190708 Date Received: 07/08/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	104		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-02
Client ID: MW-267M-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 10:10
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 07/15/19 09:46
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	33000	E	ug/l	1.00	--	1	A
Ethene	ND		ug/l	0.500	--	1	A
Ethane	7.06		ug/l	0.500	--	1	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-02 D
Client ID: MW-267M-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 10:10
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 07/15/19 12:49
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	29800		ug/l	5.00	--	5	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-03
Client ID: MW-268S-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 06:45
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 07/15/19 10:04
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	22800	E	ug/l	1.00	--	1	A
Ethene	1.65		ug/l	0.500	--	1	A
Ethane	1.89		ug/l	0.500	--	1	A

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-03 D
Client ID: MW-268S-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 06:45
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/12/19 00:51
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	60	--	20
1,1-Dichloroethane	ND		ug/l	15	--	20
Chloroform	ND		ug/l	15	--	20
Carbon tetrachloride	ND		ug/l	10	--	20
1,2-Dichloropropane	ND		ug/l	35	--	20
Dibromochloromethane	ND		ug/l	10	--	20
1,1,2-Trichloroethane	ND		ug/l	15	--	20
Tetrachloroethene	ND		ug/l	10	--	20
Chlorobenzene	ND		ug/l	10	--	20
Trichlorofluoromethane	ND		ug/l	50	--	20
1,2-Dichloroethane	ND		ug/l	10	--	20
1,1,1-Trichloroethane	ND		ug/l	10	--	20
Bromodichloromethane	ND		ug/l	10	--	20
trans-1,3-Dichloropropene	ND		ug/l	10	--	20
cis-1,3-Dichloropropene	ND		ug/l	10	--	20
1,3-Dichloropropene, Total	ND		ug/l	10	--	20
1,1-Dichloropropene	ND		ug/l	50	--	20
Bromoform	ND		ug/l	40	--	20
1,1,2,2-Tetrachloroethane	ND		ug/l	10	--	20
Benzene	ND		ug/l	10	--	20
Toluene	310		ug/l	15	--	20
Ethylbenzene	ND		ug/l	10	--	20
Chloromethane	ND		ug/l	50	--	20
Bromomethane	ND		ug/l	20	--	20
Vinyl chloride	ND		ug/l	20	--	20
Chloroethane	ND		ug/l	20	--	20
1,1-Dichloroethene	ND		ug/l	10	--	20
trans-1,2-Dichloroethene	ND		ug/l	15	--	20

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-03 D
Client ID: MW-268S-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 06:45
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	360		ug/l	10	--	20
Trichloroethene	110		ug/l	10	--	20
1,2-Dichlorobenzene	ND		ug/l	50	--	20
1,3-Dichlorobenzene	ND		ug/l	50	--	20
1,4-Dichlorobenzene	ND		ug/l	50	--	20
Methyl tert butyl ether	ND		ug/l	20	--	20
p/m-Xylene	ND		ug/l	20	--	20
o-Xylene	ND		ug/l	20	--	20
Xylenes, Total	ND		ug/l	20	--	20
cis-1,2-Dichloroethene	360		ug/l	10	--	20
Dibromomethane	ND		ug/l	100	--	20
1,4-Dichlorobutane	ND		ug/l	100	--	20
1,2,3-Trichloropropane	ND		ug/l	100	--	20
Styrene	ND		ug/l	20	--	20
Dichlorodifluoromethane	ND		ug/l	100	--	20
Acetone	ND		ug/l	100	--	20
Carbon disulfide	ND		ug/l	100	--	20
2-Butanone	ND		ug/l	100	--	20
Vinyl acetate	ND		ug/l	100	--	20
4-Methyl-2-pentanone	ND		ug/l	100	--	20
2-Hexanone	ND		ug/l	100	--	20
Ethyl methacrylate	ND		ug/l	100	--	20
Acrylonitrile	ND		ug/l	100	--	20
Bromochloromethane	ND		ug/l	50	--	20
Tetrahydrofuran	ND		ug/l	100	--	20
2,2-Dichloropropane	ND		ug/l	50	--	20
1,2-Dibromoethane	ND		ug/l	40	--	20
1,3-Dichloropropane	ND		ug/l	50	--	20
1,1,1,2-Tetrachloroethane	ND		ug/l	10	--	20
Bromobenzene	ND		ug/l	50	--	20
n-Butylbenzene	ND		ug/l	10	--	20
sec-Butylbenzene	ND		ug/l	10	--	20
tert-Butylbenzene	ND		ug/l	50	--	20
o-Chlorotoluene	ND		ug/l	50	--	20
p-Chlorotoluene	ND		ug/l	50	--	20
1,2-Dibromo-3-chloropropane	ND		ug/l	50	--	20
Hexachlorobutadiene	ND		ug/l	10	--	20

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-03 D
Client ID: MW-268S-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 06:45
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	10	--	20
p-Isopropyltoluene	ND		ug/l	10	--	20
Naphthalene	ND		ug/l	50	--	20
n-Propylbenzene	ND		ug/l	10	--	20
1,2,3-Trichlorobenzene	ND		ug/l	50	--	20
1,2,4-Trichlorobenzene	ND		ug/l	50	--	20
1,3,5-Trimethylbenzene	ND		ug/l	50	--	20
1,2,4-Trimethylbenzene	ND		ug/l	50	--	20
trans-1,4-Dichloro-2-butene	ND		ug/l	50	--	20
Ethyl ether	ND		ug/l	50	--	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	102		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-03 D
Client ID: MW-268S-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 06:45
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 07/15/19 13:05
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	20500		ug/l	5.00	--	5	A

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-04 Date Collected: 07/08/19 07:35
Client ID: MW-268M-20190708 Date Received: 07/08/19
Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/11/19 10:40
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	0.98		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	0.77		ug/l	0.50	--	1
Toluene	2.8		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	14		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-04 Date Collected: 07/08/19 07:35

Client ID: MW-268M-20190708 Date Received: 07/08/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	1.9		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	1.9		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-04 Date Collected: 07/08/19 07:35

Client ID: MW-268M-20190708 Date Received: 07/08/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	103		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-04
Client ID: MW-268M-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 07:35
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 07/15/19 10:21
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	32300	E	ug/l	1.00	--	1	A
Ethene	6.56		ug/l	0.500	--	1	A
Ethane	13.9		ug/l	0.500	--	1	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-04 D
Client ID: MW-268M-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 07:35
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 07/15/19 13:22
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	28900		ug/l	5.00	--	5	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-05
Client ID: REW-7-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 11:00
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 07/15/19 10:39
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	33300	E	ug/l	1.00	--	1	A
Ethene	ND		ug/l	0.500	--	1	A
Ethane	11.5		ug/l	0.500	--	1	A

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-05 D2 Date Collected: 07/08/19 11:00
Client ID: REW-7-20190708 Date Received: 07/08/19
Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/14/19 18:25
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	30	--	10
1,1-Dichloroethane	ND		ug/l	7.5	--	10
Chloroform	ND		ug/l	7.5	--	10
Carbon tetrachloride	ND		ug/l	5.0	--	10
1,2-Dichloropropane	ND		ug/l	18	--	10
Dibromochloromethane	ND		ug/l	5.0	--	10
1,1,2-Trichloroethane	ND		ug/l	7.5	--	10
Tetrachloroethene	ND		ug/l	5.0	--	10
Chlorobenzene	ND		ug/l	5.0	--	10
Trichlorofluoromethane	ND		ug/l	25	--	10
1,2-Dichloroethane	ND		ug/l	5.0	--	10
1,1,1-Trichloroethane	ND		ug/l	5.0	--	10
Bromodichloromethane	ND		ug/l	5.0	--	10
trans-1,3-Dichloropropene	ND		ug/l	5.0	--	10
cis-1,3-Dichloropropene	ND		ug/l	5.0	--	10
1,3-Dichloropropene, Total	ND		ug/l	5.0	--	10
1,1-Dichloropropene	ND		ug/l	25	--	10
Bromoform	ND		ug/l	20	--	10
1,1,2,2-Tetrachloroethane	ND		ug/l	5.0	--	10
Benzene	ND		ug/l	5.0	--	10
Toluene	ND		ug/l	7.5	--	10
Ethylbenzene	ND		ug/l	5.0	--	10
Chloromethane	ND		ug/l	25	--	10
Bromomethane	ND		ug/l	10	--	10
Vinyl chloride	ND		ug/l	10	--	10
Chloroethane	ND		ug/l	10	--	10
1,1-Dichloroethene	ND		ug/l	5.0	--	10
trans-1,2-Dichloroethene	ND		ug/l	7.5	--	10

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-05 D2 Date Collected: 07/08/19 11:00

Client ID: REW-7-20190708 Date Received: 07/08/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	5.0	--	10
Trichloroethene	ND		ug/l	5.0	--	10
1,2-Dichlorobenzene	ND		ug/l	25	--	10
1,3-Dichlorobenzene	ND		ug/l	25	--	10
1,4-Dichlorobenzene	ND		ug/l	25	--	10
Methyl tert butyl ether	ND		ug/l	10	--	10
p/m-Xylene	ND		ug/l	10	--	10
o-Xylene	ND		ug/l	10	--	10
Xylenes, Total	ND		ug/l	10	--	10
cis-1,2-Dichloroethene	ND		ug/l	5.0	--	10
Dibromomethane	ND		ug/l	50	--	10
1,4-Dichlorobutane	ND		ug/l	50	--	10
1,2,3-Trichloropropane	ND		ug/l	50	--	10
Styrene	ND		ug/l	10	--	10
Dichlorodifluoromethane	ND		ug/l	50	--	10
Acetone	760		ug/l	50	--	10
Carbon disulfide	ND		ug/l	50	--	10
2-Butanone	570		ug/l	50	--	10
Vinyl acetate	ND		ug/l	50	--	10
4-Methyl-2-pentanone	ND		ug/l	50	--	10
2-Hexanone	ND		ug/l	50	--	10
Ethyl methacrylate	ND		ug/l	50	--	10
Acrylonitrile	ND		ug/l	50	--	10
Bromochloromethane	ND		ug/l	25	--	10
Tetrahydrofuran	3200	E	ug/l	50	--	10
2,2-Dichloropropane	ND		ug/l	25	--	10
1,2-Dibromoethane	ND		ug/l	20	--	10
1,3-Dichloropropane	ND		ug/l	25	--	10
1,1,1,2-Tetrachloroethane	ND		ug/l	5.0	--	10
Bromobenzene	ND		ug/l	25	--	10
n-Butylbenzene	ND		ug/l	5.0	--	10
sec-Butylbenzene	ND		ug/l	5.0	--	10
tert-Butylbenzene	ND		ug/l	25	--	10
o-Chlorotoluene	ND		ug/l	25	--	10
p-Chlorotoluene	ND		ug/l	25	--	10
1,2-Dibromo-3-chloropropane	ND		ug/l	25	--	10
Hexachlorobutadiene	ND		ug/l	5.0	--	10

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-05 D2 Date Collected: 07/08/19 11:00

Client ID: REW-7-20190708 Date Received: 07/08/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	5.0	--	10
p-Isopropyltoluene	ND		ug/l	5.0	--	10
Naphthalene	ND		ug/l	25	--	10
n-Propylbenzene	ND		ug/l	5.0	--	10
1,2,3-Trichlorobenzene	ND		ug/l	25	--	10
1,2,4-Trichlorobenzene	ND		ug/l	25	--	10
1,3,5-Trimethylbenzene	ND		ug/l	25	--	10
1,2,4-Trimethylbenzene	ND		ug/l	25	--	10
trans-1,4-Dichloro-2-butene	ND		ug/l	25	--	10
Ethyl ether	ND		ug/l	25	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	117		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-05 D
Client ID: REW-7-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 11:00
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/12/19 01:19
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Tetrahydrofuran	1800		ug/l	250	--	50

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	102		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-05 D
Client ID: REW-7-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 11:00
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 07/15/19 13:40
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	29400		ug/l	5.00	--	5	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-06
Client ID: REW-11-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 08:25
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 07/15/19 10:57
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	27400	E	ug/l	1.00	--	1	A
Ethene	6.12		ug/l	0.500	--	1	A
Ethane	19.8		ug/l	0.500	--	1	A

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-06 D
Client ID: REW-11-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 08:25
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/12/19 01:47
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	300	--	100
1,1-Dichloroethane	ND		ug/l	75	--	100
Chloroform	ND		ug/l	75	--	100
Carbon tetrachloride	ND		ug/l	50	--	100
1,2-Dichloropropane	ND		ug/l	180	--	100
Dibromochloromethane	ND		ug/l	50	--	100
1,1,2-Trichloroethane	ND		ug/l	75	--	100
Tetrachloroethene	ND		ug/l	50	--	100
Chlorobenzene	ND		ug/l	50	--	100
Trichlorofluoromethane	ND		ug/l	250	--	100
1,2-Dichloroethane	ND		ug/l	50	--	100
1,1,1-Trichloroethane	ND		ug/l	50	--	100
Bromodichloromethane	ND		ug/l	50	--	100
trans-1,3-Dichloropropene	ND		ug/l	50	--	100
cis-1,3-Dichloropropene	ND		ug/l	50	--	100
1,3-Dichloropropene, Total	ND		ug/l	50	--	100
1,1-Dichloropropene	ND		ug/l	250	--	100
Bromoform	ND		ug/l	200	--	100
1,1,2,2-Tetrachloroethane	ND		ug/l	50	--	100
Benzene	ND		ug/l	50	--	100
Toluene	ND		ug/l	75	--	100
Ethylbenzene	ND		ug/l	50	--	100
Chloromethane	ND		ug/l	250	--	100
Bromomethane	ND		ug/l	100	--	100
Vinyl chloride	ND		ug/l	100	--	100
Chloroethane	ND		ug/l	100	--	100
1,1-Dichloroethene	ND		ug/l	50	--	100
trans-1,2-Dichloroethene	ND		ug/l	75	--	100

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-06 D
Client ID: REW-11-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 08:25
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	50	--	100
Trichloroethene	ND		ug/l	50	--	100
1,2-Dichlorobenzene	ND		ug/l	250	--	100
1,3-Dichlorobenzene	ND		ug/l	250	--	100
1,4-Dichlorobenzene	ND		ug/l	250	--	100
Methyl tert butyl ether	ND		ug/l	100	--	100
p/m-Xylene	ND		ug/l	100	--	100
o-Xylene	ND		ug/l	100	--	100
Xylenes, Total	ND		ug/l	100	--	100
cis-1,2-Dichloroethene	ND		ug/l	50	--	100
Dibromomethane	ND		ug/l	500	--	100
1,4-Dichlorobutane	ND		ug/l	500	--	100
1,2,3-Trichloropropane	ND		ug/l	500	--	100
Styrene	ND		ug/l	100	--	100
Dichlorodifluoromethane	ND		ug/l	500	--	100
Acetone	ND		ug/l	500	--	100
Carbon disulfide	ND		ug/l	500	--	100
2-Butanone	730		ug/l	500	--	100
Vinyl acetate	ND		ug/l	500	--	100
4-Methyl-2-pentanone	ND		ug/l	500	--	100
2-Hexanone	ND		ug/l	500	--	100
Ethyl methacrylate	ND		ug/l	500	--	100
Acrylonitrile	ND		ug/l	500	--	100
Bromochloromethane	ND		ug/l	250	--	100
Tetrahydrofuran	1100		ug/l	500	--	100
2,2-Dichloropropane	ND		ug/l	250	--	100
1,2-Dibromoethane	ND		ug/l	200	--	100
1,3-Dichloropropane	ND		ug/l	250	--	100
1,1,1,2-Tetrachloroethane	ND		ug/l	50	--	100
Bromobenzene	ND		ug/l	250	--	100
n-Butylbenzene	ND		ug/l	50	--	100
sec-Butylbenzene	ND		ug/l	50	--	100
tert-Butylbenzene	ND		ug/l	250	--	100
o-Chlorotoluene	ND		ug/l	250	--	100
p-Chlorotoluene	ND		ug/l	250	--	100
1,2-Dibromo-3-chloropropane	ND		ug/l	250	--	100
Hexachlorobutadiene	ND		ug/l	50	--	100

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-06 D Date Collected: 07/08/19 08:25

Client ID: REW-11-20190708 Date Received: 07/08/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	50	--	100
p-Isopropyltoluene	ND		ug/l	50	--	100
Naphthalene	ND		ug/l	250	--	100
n-Propylbenzene	ND		ug/l	50	--	100
1,2,3-Trichlorobenzene	ND		ug/l	250	--	100
1,2,4-Trichlorobenzene	ND		ug/l	250	--	100
1,3,5-Trimethylbenzene	ND		ug/l	250	--	100
1,2,4-Trimethylbenzene	ND		ug/l	250	--	100
trans-1,4-Dichloro-2-butene	ND		ug/l	250	--	100
Ethyl ether	ND		ug/l	250	--	100

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	103		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-06 D
Client ID: REW-11-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 08:25
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 07/15/19 13:57
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	24300		ug/l	5.00	--	5	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-07 D2
Client ID: DUP-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 00:00
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/12/19 15:00
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Tetrahydrofuran	2100		ug/l	200	--	40

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	102		70-130

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-07 D
Client ID: DUP-20190708
Sample Location: WAYLAND, MA

Date Collected: 07/08/19 00:00
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/11/19 14:52
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	30	--	10
1,1-Dichloroethane	ND		ug/l	7.5	--	10
Chloroform	ND		ug/l	7.5	--	10
Carbon tetrachloride	ND		ug/l	5.0	--	10
1,2-Dichloropropane	ND		ug/l	18	--	10
Dibromochloromethane	ND		ug/l	5.0	--	10
1,1,2-Trichloroethane	ND		ug/l	7.5	--	10
Tetrachloroethene	ND		ug/l	5.0	--	10
Chlorobenzene	ND		ug/l	5.0	--	10
Trichlorofluoromethane	ND		ug/l	25	--	10
1,2-Dichloroethane	ND		ug/l	5.0	--	10
1,1,1-Trichloroethane	ND		ug/l	5.0	--	10
Bromodichloromethane	ND		ug/l	5.0	--	10
trans-1,3-Dichloropropene	ND		ug/l	5.0	--	10
cis-1,3-Dichloropropene	ND		ug/l	5.0	--	10
1,3-Dichloropropene, Total	ND		ug/l	5.0	--	10
1,1-Dichloropropene	ND		ug/l	25	--	10
Bromoform	ND		ug/l	20	--	10
1,1,2,2-Tetrachloroethane	ND		ug/l	5.0	--	10
Benzene	ND		ug/l	5.0	--	10
Toluene	ND		ug/l	7.5	--	10
Ethylbenzene	ND		ug/l	5.0	--	10
Chloromethane	ND		ug/l	25	--	10
Bromomethane	ND		ug/l	10	--	10
Vinyl chloride	ND		ug/l	10	--	10
Chloroethane	ND		ug/l	10	--	10
1,1-Dichloroethene	ND		ug/l	5.0	--	10
trans-1,2-Dichloroethene	ND		ug/l	7.5	--	10

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-07 D Date Collected: 07/08/19 00:00
Client ID: DUP-20190708 Date Received: 07/08/19
Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	5.0	--	10
Trichloroethene	ND		ug/l	5.0	--	10
1,2-Dichlorobenzene	ND		ug/l	25	--	10
1,3-Dichlorobenzene	ND		ug/l	25	--	10
1,4-Dichlorobenzene	ND		ug/l	25	--	10
Methyl tert butyl ether	ND		ug/l	10	--	10
p/m-Xylene	ND		ug/l	10	--	10
o-Xylene	ND		ug/l	10	--	10
Xylenes, Total	ND		ug/l	10	--	10
cis-1,2-Dichloroethene	ND		ug/l	5.0	--	10
Dibromomethane	ND		ug/l	50	--	10
1,4-Dichlorobutane	ND		ug/l	50	--	10
1,2,3-Trichloropropane	ND		ug/l	50	--	10
Styrene	ND		ug/l	10	--	10
Dichlorodifluoromethane	ND		ug/l	50	--	10
Acetone	710		ug/l	50	--	10
Carbon disulfide	ND		ug/l	50	--	10
2-Butanone	490		ug/l	50	--	10
Vinyl acetate	ND		ug/l	50	--	10
4-Methyl-2-pentanone	ND		ug/l	50	--	10
2-Hexanone	ND		ug/l	50	--	10
Ethyl methacrylate	ND		ug/l	50	--	10
Acrylonitrile	ND		ug/l	50	--	10
Bromochloromethane	ND		ug/l	25	--	10
Tetrahydrofuran	2500	E	ug/l	50	--	10
2,2-Dichloropropane	ND		ug/l	25	--	10
1,2-Dibromoethane	ND		ug/l	20	--	10
1,3-Dichloropropane	ND		ug/l	25	--	10
1,1,1,2-Tetrachloroethane	ND		ug/l	5.0	--	10
Bromobenzene	ND		ug/l	25	--	10
n-Butylbenzene	ND		ug/l	5.0	--	10
sec-Butylbenzene	ND		ug/l	5.0	--	10
tert-Butylbenzene	ND		ug/l	25	--	10
o-Chlorotoluene	ND		ug/l	25	--	10
p-Chlorotoluene	ND		ug/l	25	--	10
1,2-Dibromo-3-chloropropane	ND		ug/l	25	--	10
Hexachlorobutadiene	ND		ug/l	5.0	--	10

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-07 D Date Collected: 07/08/19 00:00

Client ID: DUP-20190708 Date Received: 07/08/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	5.0	--	10
p-Isopropyltoluene	ND		ug/l	5.0	--	10
Naphthalene	ND		ug/l	25	--	10
n-Propylbenzene	ND		ug/l	5.0	--	10
1,2,3-Trichlorobenzene	ND		ug/l	25	--	10
1,2,4-Trichlorobenzene	ND		ug/l	25	--	10
1,3,5-Trimethylbenzene	ND		ug/l	25	--	10
1,2,4-Trimethylbenzene	ND		ug/l	25	--	10
trans-1,4-Dichloro-2-butene	ND		ug/l	25	--	10
Ethyl ether	ND		ug/l	25	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	112		70-130

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-08 Date Collected: 07/08/19 00:00
Client ID: TRIP BLANKS Date Received: 07/08/19
Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/11/19 10:14
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-08 Date Collected: 07/08/19 00:00

Client ID: TRIP BLANKS Date Received: 07/08/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-08 Date Collected: 07/08/19 00:00

Client ID: TRIP BLANKS Date Received: 07/08/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	103		70-130

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/11/19 08:58
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04,07-08 Batch: WG1258750-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/11/19 08:58
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04,07-08 Batch: WG1258750-5					
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrolein	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/11/19 08:58
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04,07-08 Batch: WG1258750-5					
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Halothane	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Methyl Acetate	ND		ug/l	10	--
Ethyl Acetate	ND		ug/l	10	--
Isopropyl Ether	ND		ug/l	2.0	--
Cyclohexane	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	10	--

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/11/19 08:58
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04,07-08 Batch: WG1258750-5					
Methyl cyclohexane	ND		ug/l	10	--
p-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	99		70-130

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/11/19 19:43
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03,05-06 Batch: WG1259146-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/11/19 19:43
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03,05-06 Batch: WG1259146-5					
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrolein	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/11/19 19:43
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03,05-06 Batch: WG1259146-5					
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Halothane	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Methyl Acetate	ND		ug/l	10	--
Ethyl Acetate	ND		ug/l	10	--
Isopropyl Ether	ND		ug/l	2.0	--
Cyclohexane	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	10	--

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/11/19 19:43
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03,05-06 Batch: WG1259146-5					
Methyl cyclohexane	ND		ug/l	10	--
p-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	81		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	102		70-130

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 117,-
Analytical Date: 07/15/19 08:45
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	
Dissolved Gases by GC - Mansfield Lab for sample(s): 01-06 Batch: WG1259854-3						
Methane	ND		ug/l	1.00	--	A
Ethene	ND		ug/l	0.500	--	A
Ethane	ND		ug/l	0.500	--	A

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/14/19 10:56
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1259973-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
2-Chloroethylvinyl ether	ND		ug/l	10	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/14/19 10:56
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1259973-5					
1,2-Dichloroethene, Total	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrolein	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/14/19 10:56
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1259973-5					
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Halothane	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Methyl Acetate	ND		ug/l	10	--
Ethyl Acetate	ND		ug/l	10	--
Isopropyl Ether	ND		ug/l	2.0	--
Cyclohexane	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/14/19 10:56
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1259973-5					
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	10	--
Methyl cyclohexane	ND		ug/l	10	--
p-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	99		70-130

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/12/19 10:44
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1260008-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/12/19 10:44
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1260008-5					
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrolein	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--

Project Name: RAYTHEON WAYLAND **Lab Number:** L1929451

Project Number: RA-008 **Report Date:** 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/12/19 10:44
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1260008-5					
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Halothane	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Methyl Acetate	ND		ug/l	10	--
Ethyl Acetate	ND		ug/l	10	--
Isopropyl Ether	ND		ug/l	2.0	--
Cyclohexane	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	10	--

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/12/19 10:44
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1260008-5					
Methyl cyclohexane	ND		ug/l	10	--
p-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04,07-08 Batch: WG1258750-3 WG1258750-4								
Methylene chloride	83		91		70-130	9		20
1,1-Dichloroethane	83		91		70-130	9		20
Chloroform	88		93		70-130	6		20
Carbon tetrachloride	100		100		63-132	0		20
1,2-Dichloropropane	88		88		70-130	0		20
Dibromochloromethane	96		92		63-130	4		20
1,1,2-Trichloroethane	96		92		70-130	4		20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	97		96		75-130	1		25
Trichlorofluoromethane	120		120		62-150	0		20
1,2-Dichloroethane	89		88		70-130	1		20
1,1,1-Trichloroethane	95		99		67-130	4		20
Bromodichloromethane	90		89		67-130	1		20
trans-1,3-Dichloropropene	82		78		70-130	5		20
cis-1,3-Dichloropropene	83		82		70-130	1		20
1,1-Dichloropropene	94		97		70-130	3		20
Bromoform	81		78		54-136	4		20
1,1,2,2-Tetrachloroethane	90		86		67-130	5		20
Benzene	94		94		70-130	0		25
Toluene	95		96		70-130	1		25
Ethylbenzene	96		96		70-130	0		20
Chloromethane	78		78		64-130	0		20
Bromomethane	88		81		39-139	8		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1929451
Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04,07-08 Batch: WG1258750-3 WG1258750-4								
Vinyl chloride	90		88		55-140	2		20
Chloroethane	100		100		55-138	0		20
1,1-Dichloroethene	91		100		61-145	9		25
trans-1,2-Dichloroethene	87		95		70-130	9		20
Trichloroethene	91		90		70-130	1		25
1,2-Dichlorobenzene	97		96		70-130	1		20
1,3-Dichlorobenzene	97		97		70-130	0		20
1,4-Dichlorobenzene	96		95		70-130	1		20
Methyl tert butyl ether	84		88		63-130	5		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
cis-1,2-Dichloroethene	87		95		70-130	9		20
Dibromomethane	92		90		70-130	2		20
1,4-Dichlorobutane	88		85		70-130	3		20
1,2,3-Trichloropropane	89		86		64-130	3		20
Styrene	100		100		70-130	0		20
Dichlorodifluoromethane	96		94		36-147	2		20
Acetone	74		82		58-148	10		20
Carbon disulfide	87		96		51-130	10		20
2-Butanone	87		84		63-138	4		20
Vinyl acetate	75		79		70-130	5		20
4-Methyl-2-pentanone	80		74		59-130	8		20
2-Hexanone	73		67		57-130	9		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04,07-08 Batch: WG1258750-3 WG1258750-4								
Ethyl methacrylate	83		80		70-130	4		20
Acrolein	73		81		70-130	10		20
Acrylonitrile	76		82		70-130	8		20
Bromochloromethane	90		97		70-130	7		20
Tetrahydrofuran	74		77		58-130	4		20
2,2-Dichloropropane	98		98		63-133	0		20
1,2-Dibromoethane	95		92		70-130	3		20
1,3-Dichloropropane	93		90		70-130	3		20
1,1,1,2-Tetrachloroethane	97		97		64-130	0		20
Bromobenzene	95		96		70-130	1		20
n-Butylbenzene	100		98		53-136	2		20
sec-Butylbenzene	100		100		70-130	0		20
tert-Butylbenzene	100		100		70-130	0		20
o-Chlorotoluene	95		96		70-130	1		20
p-Chlorotoluene	97		97		70-130	0		20
1,2-Dibromo-3-chloropropane	81		74		41-144	9		20
Hexachlorobutadiene	100		100		63-130	0		20
Isopropylbenzene	100		100		70-130	0		20
p-Isopropyltoluene	100		100		70-130	0		20
Naphthalene	83		76		70-130	9		20
n-Propylbenzene	100		100		69-130	0		20
1,2,3-Trichlorobenzene	100		92		70-130	8		20
1,2,4-Trichlorobenzene	98		92		70-130	6		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04,07-08 Batch: WG1258750-3 WG1258750-4								
1,3,5-Trimethylbenzene	99		99		64-130	0		20
1,3,5-Trichlorobenzene	99		97		70-130	2		20
1,2,4-Trimethylbenzene	99		100		70-130	1		20
trans-1,4-Dichloro-2-butene	78		**66**	Q	70-130	17		20
Halothane	91		98		70-130	7		20
Ethyl ether	100		100		59-134	0		20
Methyl Acetate	75		80		70-130	6		20
Ethyl Acetate	**69**	Q	**68**	Q	70-130	1		20
Isopropyl Ether	76		84		70-130	10		20
Cyclohexane	95		100		70-130	5		20
Tert-Butyl Alcohol	78		74		70-130	5		20
Ethyl-Tert-Butyl-Ether	83		88		70-130	6		20
Tertiary-Amyl Methyl Ether	91		88		66-130	3		20
1,4-Dioxane	84		76		56-162	10		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	100		110		70-130	10		20
Methyl cyclohexane	110		100		70-130	10		20
p-Diethylbenzene	100		99		70-130	1		20
4-Ethyltoluene	100		100		70-130	0		20
1,2,4,5-Tetramethylbenzene	91		89		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04,07-08 Batch: WG1258750-3 WG1258750-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		96		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	94		94		70-130
Dibromofluoromethane	94		100		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1929451
Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03,05-06 Batch: WG1259146-3 WG1259146-4								
Methylene chloride	110		110		70-130	0		20
1,1-Dichloroethane	96		93		70-130	3		20
Chloroform	93		94		70-130	1		20
Carbon tetrachloride	84		83		63-132	1		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	97		98		63-130	1		20
1,1,2-Trichloroethane	110		110		70-130	0		20
Tetrachloroethene	99		98		70-130	1		20
Chlorobenzene	100		100		75-130	0		25
Trichlorofluoromethane	76		77		62-150	1		20
1,2-Dichloroethane	80		80		70-130	0		20
1,1,1-Trichloroethane	85		86		67-130	1		20
Bromodichloromethane	91		93		67-130	2		20
trans-1,3-Dichloropropene	98		97		70-130	1		20
cis-1,3-Dichloropropene	87		90		70-130	3		20
1,1-Dichloropropene	92		92		70-130	0		20
Bromoform	100		98		54-136	2		20
1,1,2,2-Tetrachloroethane	110		110		67-130	0		20
Benzene	110		110		70-130	0		25
Toluene	100		100		70-130	0		25
Ethylbenzene	100		100		70-130	0		20
Chloromethane	70		70		64-130	0		20
Bromomethane	78		75		39-139	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03,05-06 Batch: WG1259146-3 WG1259146-4								
Vinyl chloride	82		81		55-140	1		20
Chloroethane	89		89		55-138	0		20
1,1-Dichloroethene	100		100		61-145	0		25
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	100		100		70-130	0		25
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	100		100		63-130	0		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	105		105		70-130	0		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Dibromomethane	94		96		70-130	2		20
1,4-Dichlorobutane	96		93		70-130	3		20
1,2,3-Trichloropropane	100		100		64-130	0		20
Styrene	100		100		70-130	0		20
Dichlorodifluoromethane	65		67		36-147	3		20
Acetone	100		100		58-148	0		20
Carbon disulfide	100		100		51-130	0		20
2-Butanone	92		92		63-138	0		20
Vinyl acetate	84		83		70-130	1		20
4-Methyl-2-pentanone	100		98		59-130	2		20
2-Hexanone	89		90		57-130	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03,05-06 Batch: WG1259146-3 WG1259146-4								
Ethyl methacrylate	100		100		70-130	0		20
Acrolein	93		95		70-130	2		20
Acrylonitrile	98		100		70-130	2		20
Bromochloromethane	110		110		70-130	0		20
Tetrahydrofuran	88		82		58-130	7		20
2,2-Dichloropropane	94		90		63-133	4		20
1,2-Dibromoethane	110		110		70-130	0		20
1,3-Dichloropropane	110		110		70-130	0		20
1,1,1,2-Tetrachloroethane	96		96		64-130	0		20
Bromobenzene	100		100		70-130	0		20
n-Butylbenzene	98		98		53-136	0		20
sec-Butylbenzene	79		79		70-130	0		20
tert-Butylbenzene	100		100		70-130	0		20
o-Chlorotoluene	110		110		70-130	0		20
p-Chlorotoluene	100		100		70-130	0		20
1,2-Dibromo-3-chloropropane	100		100		41-144	0		20
Hexachlorobutadiene	91		86		63-130	6		20
Isopropylbenzene	100		100		70-130	0		20
p-Isopropyltoluene	100		100		70-130	0		20
Naphthalene	110		100		70-130	10		20
n-Propylbenzene	100		100		69-130	0		20
1,2,3-Trichlorobenzene	98		95		70-130	3		20
1,2,4-Trichlorobenzene	100		97		70-130	3		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03,05-06 Batch: WG1259146-3 WG1259146-4								
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,3,5-Trichlorobenzene	100		100		70-130	0		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20
trans-1,4-Dichloro-2-butene	91		84		70-130	8		20
Halothane	100		100		70-130	0		20
Ethyl ether	110		110		59-134	0		20
Methyl Acetate	97		96		70-130	1		20
Ethyl Acetate	**51**	Q	**53**	Q	70-130	4		20
Isopropyl Ether	87		89		70-130	2		20
Cyclohexane	88		85		70-130	3		20
Tert-Butyl Alcohol	110		100		70-130	10		20
Ethyl-Tert-Butyl-Ether	91		91		70-130	0		20
Tertiary-Amyl Methyl Ether	94		97		66-130	3		20
1,4-Dioxane	**186**	Q	**188**	Q	56-162	1		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	92		95		70-130	3		20
Methyl cyclohexane	89		88		70-130	1		20
p-Diethylbenzene	100		98		70-130	2		20
4-Ethyltoluene	110		100		70-130	10		20
1,2,4,5-Tetramethylbenzene	100		98		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03,05-06 Batch: WG1259146-3 WG1259146-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	77		78		70-130
Toluene-d8	102		103		70-130
4-Bromofluorobenzene	101		100		70-130
Dibromofluoromethane	94		96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Dissolved Gases by GC - Mansfield Lab Associated sample(s): 01-06 Batch: WG1259854-2									
Methane	90		-		80-120	-		25	A
Ethene	96		-		80-120	-		25	A
Ethane	104		-		80-120	-		25	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1929451
Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1259973-3 WG1259973-4								
Methylene chloride	98		93		70-130	5		20
1,1-Dichloroethane	97		90		70-130	7		20
Chloroform	99		93		70-130	6		20
Carbon tetrachloride	110		99		63-132	11		20
1,2-Dichloropropane	94		88		70-130	7		20
Dibromochloromethane	100		100		63-130	0		20
1,1,2-Trichloroethane	97		96		70-130	1		20
2-Chloroethylvinyl ether	75		76		70-130	1		20
Tetrachloroethene	100		98		70-130	2		20
Chlorobenzene	100		100		75-130	0		25
Trichlorofluoromethane	110		110		62-150	0		20
1,2-Dichloroethane	87		88		70-130	1		20
1,1,1-Trichloroethane	98		96		67-130	2		20
Bromodichloromethane	96		92		67-130	4		20
trans-1,3-Dichloropropene	92		90		70-130	2		20
cis-1,3-Dichloropropene	95		91		70-130	4		20
1,1-Dichloropropene	90		87		70-130	3		20
Bromoform	110		100		54-136	10		20
1,1,2,2-Tetrachloroethane	93		94		67-130	1		20
Benzene	100		94		70-130	6		25
Toluene	100		98		70-130	2		25
Ethylbenzene	100		96		70-130	4		20
Chloromethane	79		75		64-130	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1929451
Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1259973-3 WG1259973-4								
Bromomethane	**140**	Q	**150**	Q	39-139	7		20
Vinyl chloride	98		92		55-140	6		20
Chloroethane	120		120		55-138	0		20
1,1-Dichloroethene	96		96		61-145	0		25
trans-1,2-Dichloroethene	99		90		70-130	10		20
Trichloroethene	100		96		70-130	4		25
1,2-Dichlorobenzene	100		95		70-130	5		20
1,3-Dichlorobenzene	110		97		70-130	13		20
1,4-Dichlorobenzene	100		98		70-130	2		20
Methyl tert butyl ether	82		87		63-130	6		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	100		95		70-130	5		20
cis-1,2-Dichloroethene	100		95		70-130	5		20
Dibromomethane	96		96		70-130	0		20
1,4-Dichlorobutane	84		84		70-130	0		20
1,2,3-Trichloropropane	91		92		64-130	1		20
Styrene	100		95		70-130	5		20
Dichlorodifluoromethane	95		89		36-147	7		20
Acetone	79		84		58-148	6		20
Carbon disulfide	100		100		51-130	0		20
2-Butanone	68		72		63-138	6		20
Vinyl acetate	72		80		70-130	11		20
4-Methyl-2-pentanone	75		84		59-130	11		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1929451
Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1259973-3 WG1259973-4								
2-Hexanone	63		66		57-130	5		20
Ethyl methacrylate	76		76		70-130	0		20
Acrolein	88		82		70-130	7		20
Acrylonitrile	**68**	Q	76		70-130	11		20
Bromochloromethane	100		99		70-130	1		20
Tetrahydrofuran	68		76		58-130	11		20
2,2-Dichloropropane	97		90		63-133	7		20
1,2-Dibromoethane	91		93		70-130	2		20
1,3-Dichloropropane	94		95		70-130	1		20
1,1,1,2-Tetrachloroethane	100		100		64-130	0		20
Bromobenzene	100		98		70-130	2		20
n-Butylbenzene	100		99		53-136	1		20
sec-Butylbenzene	100		98		70-130	2		20
tert-Butylbenzene	88		82		70-130	7		20
o-Chlorotoluene	100		95		70-130	5		20
p-Chlorotoluene	100		94		70-130	6		20
1,2-Dibromo-3-chloropropane	89		92		41-144	3		20
Hexachlorobutadiene	110		100		63-130	10		20
Isopropylbenzene	100		97		70-130	3		20
p-Isopropyltoluene	100		96		70-130	4		20
Naphthalene	78		79		70-130	1		20
n-Propylbenzene	110		100		69-130	10		20
1,2,3-Trichlorobenzene	93		92		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1259973-3 WG1259973-4								
1,2,4-Trichlorobenzene	99		94		70-130	5		20
1,3,5-Trimethylbenzene	100		96		64-130	4		20
1,3,5-Trichlorobenzene	110		100		70-130	10		20
1,2,4-Trimethylbenzene	100		95		70-130	5		20
trans-1,4-Dichloro-2-butene	87		75		70-130	15		20
Halothane	98		94		70-130	4		20
Ethyl ether	95		97		59-134	2		20
Methyl Acetate	74		75		70-130	1		20
Ethyl Acetate	**51**	Q	**42**	Q	70-130	19		20
Isopropyl Ether	80		71		70-130	12		20
Cyclohexane	86		84		70-130	2		20
Tert-Butyl Alcohol	86		98		70-130	13		20
Ethyl-Tert-Butyl-Ether	80		82		70-130	2		20
Tertiary-Amyl Methyl Ether	84		80		66-130	5		20
1,4-Dioxane	156		158		56-162	1		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	110		98		70-130	12		20
Methyl cyclohexane	95		87		70-130	9		20
p-Diethylbenzene	98		93		70-130	5		20
4-Ethyltoluene	100		97		70-130	3		20
1,2,4,5-Tetramethylbenzene	93		87		70-130	7		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1259973-3 WG1259973-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	92		94		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	98		96		70-130
Dibromofluoromethane	108		106		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1929451
Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1260008-3 WG1260008-4								
Methylene chloride	110		110		70-130	0		20
1,1-Dichloroethane	100		99		70-130	1		20
Chloroform	110		100		70-130	10		20
Carbon tetrachloride	110		110		63-132	0		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	110		110		63-130	0		20
1,1,2-Trichloroethane	110		110		70-130	0		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	110		110		75-130	0		25
Trichlorofluoromethane	100		98		62-150	2		20
1,2-Dichloroethane	100		98		70-130	2		20
1,1,1-Trichloroethane	110		110		67-130	0		20
Bromodichloromethane	110		100		67-130	10		20
trans-1,3-Dichloropropene	100		110		70-130	10		20
cis-1,3-Dichloropropene	98		100		70-130	2		20
1,1-Dichloropropene	110		100		70-130	10		20
Bromoform	100		100		54-136	0		20
1,1,2,2-Tetrachloroethane	110		110		67-130	0		20
Benzene	110		110		70-130	0		25
Toluene	110		110		70-130	0		25
Ethylbenzene	110		110		70-130	0		20
Chloromethane	75		73		64-130	3		20
Bromomethane	94		85		39-139	10		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1929451
Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1260008-3 WG1260008-4								
Vinyl chloride	91		88		55-140	3		20
Chloroethane	98		93		55-138	5		20
1,1-Dichloroethene	110		110		61-145	0		25
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	110		110		70-130	0		25
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	110		110		70-130	0		20
1,4-Dichlorobenzene	110		100		70-130	10		20
Methyl tert butyl ether	110		110		63-130	0		20
p/m-Xylene	110		110		70-130	0		20
o-Xylene	110		110		70-130	0		20
cis-1,2-Dichloroethene	120		110		70-130	9		20
Dibromomethane	100		100		70-130	0		20
1,4-Dichlorobutane	97		95		70-130	2		20
1,2,3-Trichloropropane	100		110		64-130	10		20
Styrene	105		105		70-130	0		20
Dichlorodifluoromethane	88		85		36-147	3		20
Acetone	120		100		58-148	18		20
Carbon disulfide	110		100		51-130	10		20
2-Butanone	97		100		63-138	3		20
Vinyl acetate	90		91		70-130	1		20
4-Methyl-2-pentanone	95		100		59-130	5		20
2-Hexanone	89		94		57-130	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1929451
Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1260008-3 WG1260008-4								
Ethyl methacrylate	100		100		70-130	0		20
Acrolein	100		94		70-130	6		20
Acrylonitrile	100		94		70-130	6		20
Bromochloromethane	120		110		70-130	9		20
Tetrahydrofuran	86		84		58-130	2		20
2,2-Dichloropropane	110		100		63-133	10		20
1,2-Dibromoethane	110		110		70-130	0		20
1,3-Dichloropropane	100		110		70-130	10		20
1,1,1,2-Tetrachloroethane	110		110		64-130	0		20
Bromobenzene	110		100		70-130	10		20
n-Butylbenzene	110		100		53-136	10		20
sec-Butylbenzene	89		88		70-130	1		20
tert-Butylbenzene	110		110		70-130	0		20
o-Chlorotoluene	110		110		70-130	0		20
p-Chlorotoluene	110		100		70-130	10		20
1,2-Dibromo-3-chloropropane	110		100		41-144	10		20
Hexachlorobutadiene	100		99		63-130	1		20
Isopropylbenzene	110		110		70-130	0		20
p-Isopropyltoluene	110		110		70-130	0		20
Naphthalene	100		100		70-130	0		20
n-Propylbenzene	110		100		69-130	10		20
1,2,3-Trichlorobenzene	100		100		70-130	0		20
1,2,4-Trichlorobenzene	100		100		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1260008-3 WG1260008-4								
1,3,5-Trimethylbenzene	110		110		64-130	0		20
1,3,5-Trichlorobenzene	110		100		70-130	10		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20
trans-1,4-Dichloro-2-butene	110		100		70-130	10		20
Halothane	110		100		70-130	10		20
Ethyl ether	110		110		59-134	0		20
Methyl Acetate	97		100		70-130	3		20
Ethyl Acetate	**55**	Q	**54**	Q	70-130	2		20
Isopropyl Ether	92		91		70-130	1		20
Cyclohexane	100		97		70-130	3		20
Tert-Butyl Alcohol	116		130		70-130	11		20
Ethyl-Tert-Butyl-Ether	100		98		70-130	2		20
Tertiary-Amyl Methyl Ether	110		110		66-130	0		20
1,4-Dioxane	160		**168**	Q	56-162	5		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	110		110		70-130	0		20
Methyl cyclohexane	100		100		70-130	0		20
p-Diethylbenzene	110		100		70-130	10		20
4-Ethyltoluene	110		110		70-130	0		20
1,2,4,5-Tetramethylbenzene	110		100		70-130	10		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1260008-3 WG1260008-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		96		70-130
Toluene-d8	102		104		70-130
4-Bromofluorobenzene	99		99		70-130
Dibromofluoromethane	101		101		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Dissolved Gases by GC - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1259854-5 QC Sample: L1929451-01 Client ID: MW-267S-20190708													
Methane	20000E	54.6	19800E	**0**	Q	-	-		80-120	-		25	A
Ethene	5.16	95.5	91.8	91		-	-		80-120	-		25	A
Ethane	0.788	102	99.4	96		-	-		80-120	-		25	A

METALS

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-01
Client ID: MW-267S-20190708
Sample Location: WAYLAND, MA
Date Collected: 07/08/19 09:20
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	782		mg/l	0.500	--	10	07/13/19 10:30	07/15/19 15:09	EPA 3005A	1,6010D	AB

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-02
Client ID: MW-267M-20190708
Sample Location: WAYLAND, MA
Date Collected: 07/08/19 10:10
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	87.4		mg/l	0.050	--	1	07/13/19 10:30	07/15/19 13:25	EPA 3005A	1,6010D	LC

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-03
Client ID: MW-268S-20190708
Sample Location: WAYLAND, MA
Date Collected: 07/08/19 06:45
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	12.7		mg/l	0.050	--	1	07/13/19 10:30	07/15/19 13:30	EPA 3005A	1,6010D	LC

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-04
Client ID: MW-268M-20190708
Sample Location: WAYLAND, MA
Date Collected: 07/08/19 07:35
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	64.2		mg/l	0.050	--	1	07/13/19 10:30	07/15/19 13:35	EPA 3005A	1,6010D	LC

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-05
Client ID: REW-7-20190708
Sample Location: WAYLAND, MA
Date Collected: 07/08/19 11:00
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	1.22		mg/l	0.050	--	1	07/13/19 10:30	07/15/19 13:39	EPA 3005A	1,6010D	LC

Project Name: RAYTHEON WAYLAND
Lab Number: L1929451
Project Number: RA-008
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-06
Client ID: REW-11-20190708
Sample Location: WAYLAND, MA
Date Collected: 07/08/19 08:25
Date Received: 07/08/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	233		mg/l	0.050	--	1	07/13/19 10:30	07/15/19 13:44	EPA 3005A	1,6010D	LC

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

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): 01-06 Batch: WG1259508-1										
Iron, Total	ND		mg/l	0.050	--	1	07/13/19 10:30	07/15/19 12:19	1,6010D	LC

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG1259508-2								
Iron, Total	106		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1929451
Report Date: 07/15/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1259508-3 QC Sample: L1900007-92 Client ID: MS Sample												
Iron, Total	10.3	1	11.7	**140**	Q	-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1259508-4 QC Sample: L1900007-92 Client ID: DUP Sample						
Iron, Total	10.3	10.2	mg/l	1		20

INORGANICS
&
MISCELLANEOUS

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-01
Client ID: MW-267S-20190708
Sample Location: WAYLAND, MA
Sample Depth:
Matrix: Water
Date Collected: 07/08/19 09:20
Date Received: 07/08/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	0.217		mg/l	0.075	--	1	07/10/19 13:29	07/10/19 21:37	121,4500NH3-BH	ML
Nitrogen, Nitrate	0.157		mg/l	0.100	--	1	-	07/09/19 21:02	121,4500NO3-F	MR
Sulfate	ND		mg/l	10	--	1	07/10/19 12:00	07/10/19 12:00	1,9038	SD
Total Organic Carbon	2300		mg/l	200	--	400	-	07/09/19 15:03	1,9060A	DW
Anions by Ion Chromatography - Westborough Lab										
Chloride	45.8		mg/l	2.50	--	5	-	07/12/19 19:28	44,300.0	JT

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-02
Client ID: MW-267M-20190708
Sample Location: WAYLAND, MA
Sample Depth:
Matrix: Water

Date Collected: 07/08/19 10:10
Date Received: 07/08/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	0.512		mg/l	0.075	--	1	07/10/19 13:29	07/10/19 21:38	121,4500NH3-BH	ML
Nitrogen, Nitrate	0.101		mg/l	0.100	--	1	-	07/09/19 21:06	121,4500NO3-F	MR
Sulfate	ND		mg/l	10	--	1	07/10/19 12:00	07/10/19 12:00	1,9038	SD
Total Organic Carbon	17		mg/l	1.0	--	2	-	07/09/19 11:16	1,9060A	DW
Anions by Ion Chromatography - Westborough Lab										
Chloride	32.0		mg/l	0.500	--	1	-	07/12/19 15:20	44,300.0	JT

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-03
Client ID: MW-268S-20190708
Sample Location: WAYLAND, MA
Sample Depth:
Matrix: Water

Date Collected: 07/08/19 06:45
Date Received: 07/08/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	0.285		mg/l	0.075	--	1	07/10/19 13:29	07/10/19 21:41	121,4500NH3-BH	ML
Nitrogen, Nitrate	ND		mg/l	0.100	--	1	-	07/09/19 21:11	121,4500NO3-F	MR
Sulfate	ND		mg/l	10	--	1	07/10/19 12:00	07/10/19 12:00	1,9038	SD
Total Organic Carbon	5500		mg/l	400	--	800	-	07/09/19 18:15	1,9060A	DW
Anions by Ion Chromatography - Westborough Lab										
Chloride	24.0		mg/l	0.500	--	1	-	07/12/19 15:49	44,300.0	JT

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-04
Client ID: MW-268M-20190708
Sample Location: WAYLAND, MA
Sample Depth:
Matrix: Water

Date Collected: 07/08/19 07:35
Date Received: 07/08/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	07/10/19 13:29	07/10/19 21:42	121,4500NH3-BH	ML
Nitrogen, Nitrate	0.125		mg/l	0.100	--	1	-	07/09/19 21:12	121,4500NO3-F	MR
Sulfate	ND		mg/l	10	--	1	07/10/19 12:00	07/10/19 12:00	1,9038	SD
Total Organic Carbon	3.0		mg/l	1.0	--	2	-	07/09/19 12:33	1,9060A	DW
Anions by Ion Chromatography - Westborough Lab										
Chloride	30.2		mg/l	0.500	--	1	-	07/12/19 15:58	44,300.0	JT

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-05
Client ID: REW-7-20190708
Sample Location: WAYLAND, MA
Sample Depth:
Matrix: Water

Date Collected: 07/08/19 11:00
Date Received: 07/08/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	0.544		mg/l	0.075	--	1	07/10/19 13:29	07/10/19 21:43	121,4500NH3-BH	ML
Nitrogen, Nitrate	ND		mg/l	0.100	--	1	-	07/09/19 21:13	121,4500NO3-F	MR
Sulfate	ND		mg/l	10	--	1	07/10/19 12:00	07/10/19 12:00	1,9038	SD
Total Organic Carbon	3.8		mg/l	1.0	--	2	-	07/09/19 13:02	1,9060A	DW
Anions by Ion Chromatography - Westborough Lab										
Chloride	7.03		mg/l	0.500	--	1	-	07/12/19 16:07	44,300.0	JT

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

SAMPLE RESULTS

Lab ID: L1929451-06
Client ID: REW-11-20190708
Sample Location: WAYLAND, MA
Sample Depth:
Matrix: Water

Date Collected: 07/08/19 08:25
Date Received: 07/08/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	0.102		mg/l	0.075	--	1	07/10/19 13:29	07/10/19 21:44	121,4500NH3-BH	ML
Nitrogen, Nitrate	0.288		mg/l	0.100	--	1	-	07/09/19 21:15	121,4500NO3-F	MR
Sulfate	ND		mg/l	10	--	1	07/10/19 12:00	07/10/19 12:00	1,9038	SD
Total Organic Carbon	5500		mg/l	500	--	1000	-	07/09/19 17:48	1,9060A	DW
Anions by Ion Chromatography - Westborough Lab										
Chloride	52.4		mg/l	2.50	--	5	-	07/12/19 19:38	44,300.0	JT

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1929451
Report Date: 07/15/19

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): 01-06 Batch: WG1257380-1										
Total Organic Carbon	ND		mg/l	0.50	--	1	-	07/09/19 08:27	1,9060A	DW
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1257692-1										
Nitrogen, Nitrate	ND		mg/l	0.100	--	1	-	07/09/19 19:57	121,4500NO3-F	MR
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1258074-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	07/10/19 13:29	07/10/19 21:19	121,4500NH3-BH	ML
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1258092-1										
Sulfate	ND		mg/l	10	--	1	07/10/19 12:00	07/10/19 12:00	1,9038	SD
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-06 Batch: WG1259597-1										
Chloride	ND		mg/l	0.500	--	1	-	07/12/19 19:00	44,300.0	JT

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1257380-2								
Total Organic Carbon	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1257692-2								
Nitrogen, Nitrate	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1258074-2								
Nitrogen, Ammonia	94		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1258092-2								
Sulfate	95		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-06 Batch: WG1259597-2								
Chloride	99		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1929451
Report Date: 07/15/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1257380-4 QC Sample: L1929451-05 Client ID: REW-7-20190708												
Total Organic Carbon	3.8	8	11	93		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1257692-4 QC Sample: L1929451-01 Client ID: MW-267S-20190708												
Nitrogen, Nitrate	0.157	4	3.83	92		-	-		83-113	-		17
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1258074-4 QC Sample: L1929451-02 Client ID: MW-267M-20190708												
Nitrogen, Ammonia	0.512	4	4.06	89		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1258092-4 QC Sample: L1929451-01 Client ID: MW-267S-20190708												
Sulfate	ND	20	ND	**0**	Q	-	-		55-147	-		14
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1259597-3 QC Sample: L1929451-03 Client ID: MW-268S-20190708												
Chloride	24.0	4	28.8	**120**	Q	-	-		90-110	-		18

Lab Duplicate Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1929451

Report Date: 07/15/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1257380-3 QC Sample: L1929451-05 Client ID: REW-7-20190708						
Total Organic Carbon	3.8	4.5	mg/l	17		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1257692-3 QC Sample: L1929451-01 Client ID: MW-267S-20190708						
Nitrogen, Nitrate	0.157	0.134	mg/l	16		17
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1258074-3 QC Sample: L1929451-02 Client ID: MW-267M-20190708						
Nitrogen, Ammonia	0.512	0.458	mg/l	11		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1258092-3 QC Sample: L1929451-01 Client ID: MW-267S-20190708						
Sulfate	ND	ND	mg/l	NC		14
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1259597-4 QC Sample: L1929451-03 Client ID: MW-268S-20190708						
Chloride	24.0	23.4	mg/l	3		18

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1929451
Report Date: 07/15/19

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(*)
L1929451-01A	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-01B	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-01C	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-01D	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-01E	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-01F	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-01G	20ml Vial HCl preserved	A	NA		3.3	Y	Absent		DISSGAS(14)
L1929451-01H	20ml Vial HCl preserved	A	NA		3.3	Y	Absent		DISSGAS(14)
L1929451-01I	Plastic 250ml unpreserved	A	7	7	3.3	Y	Absent		CL-300(28),SO4-9038(28),NO3-4500(2)
L1929451-01J	Plastic 250ml HNO3 preserved	A	5	<2	3.3	N	Absent		FE-TI(180)
L1929451-01K	Plastic 500ml H2SO4 preserved	A	<2	<2	3.3	Y	Absent		NH3-4500(28)
L1929451-02A	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-02B	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-02C	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-02D	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-02E	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-02F	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-02G	20ml Vial HCl preserved	A	NA		3.3	Y	Absent		DISSGAS(14)
L1929451-02H	20ml Vial HCl preserved	A	NA		3.3	Y	Absent		DISSGAS(14)
L1929451-02I	Plastic 250ml unpreserved	A	7	7	3.3	Y	Absent		CL-300(28),SO4-9038(28),NO3-4500(2)
L1929451-02J	Plastic 250ml HNO3 preserved	A	<2	<2	3.3	Y	Absent		FE-TI(180)
L1929451-02K	Plastic 500ml H2SO4 preserved	A	<2	<2	3.3	Y	Absent		NH3-4500(28)
L1929451-03A	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1929451-03B	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-03C	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-03D	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-03E	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-03F	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-03G	20ml Vial HCl preserved	A	NA		3.3	Y	Absent		DISSGAS(14)
L1929451-03H	20ml Vial HCl preserved	A	NA		3.3	Y	Absent		DISSGAS(14)
L1929451-03I	Plastic 250ml unpreserved	A	7	7	3.3	Y	Absent		CL-300(28),SO4-9038(28),NO3-4500(2)
L1929451-03J	Plastic 250ml HNO3 preserved	A	<2	<2	3.3	Y	Absent		FE-TI(180)
L1929451-03K	Plastic 500ml H2SO4 preserved	A	<2	<2	3.3	Y	Absent		NH3-4500(28)
L1929451-04A	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-04B	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-04C	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-04D	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-04E	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-04F	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-04G	20ml Vial HCl preserved	A	NA		3.3	Y	Absent		DISSGAS(14)
L1929451-04H	20ml Vial HCl preserved	A	NA		3.3	Y	Absent		DISSGAS(14)
L1929451-04I	Plastic 250ml unpreserved	A	7	7	3.3	Y	Absent		CL-300(28),SO4-9038(28),NO3-4500(2)
L1929451-04J	Plastic 250ml HNO3 preserved	A	<2	<2	3.3	Y	Absent		FE-TI(180)
L1929451-04K	Plastic 500ml H2SO4 preserved	A	<2	<2	3.3	Y	Absent		NH3-4500(28)
L1929451-05A	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-05B	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-05C	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-05D	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-05E	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-05F	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-05G	20ml Vial HCl preserved	A	NA		3.3	Y	Absent		DISSGAS(14)

*Values in parentheses indicate holding time in days

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1929451
Report Date: 07/15/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1929451-05H	20ml Vial HCl preserved	A	NA		3.3	Y	Absent		DISSGAS(14)
L1929451-05I	Plastic 250ml unpreserved	A	7	7	3.3	Y	Absent		CL-300(28),SO4-9038(28),NO3-4500(2)
L1929451-05J	Plastic 250ml HNO3 preserved	A	<2	<2	3.3	Y	Absent		FE-TI(180)
L1929451-05K	Plastic 500ml H2SO4 preserved	A	<2	<2	3.3	Y	Absent		NH3-4500(28)
L1929451-06A	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-06B	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-06C	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-06D	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-06E	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-06F	Vial H2SO4 preserved	A	NA		3.3	Y	Absent		TOC-9060(28)
L1929451-06G	20ml Vial HCl preserved	A	NA		3.3	Y	Absent		DISSGAS(14)
L1929451-06H	20ml Vial HCl preserved	A	NA		3.3	Y	Absent		DISSGAS(14)
L1929451-06I	Plastic 250ml unpreserved	A	7	7	3.3	Y	Absent		CL-300(28),SO4-9038(28),NO3-4500(2)
L1929451-06J	Plastic 250ml HNO3 preserved	A	5	<2	3.3	N	Absent		FE-TI(180)
L1929451-06K	Plastic 500ml H2SO4 preserved	A	<2	<2	3.3	Y	Absent		NH3-4500(28)
L1929451-07A	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-07B	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-07C	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-08A	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)
L1929451-08B	Vial HCl preserved	A	NA		3.3	Y	Absent		8260(14)

*Values in parentheses indicate holding time in days

Project Name:	RAYTHEON WAYLAND	**Lab Number:**	L1929451
Project Number:	RA-008	**Report Date:**	07/15/19

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:	RAYTHEON WAYLAND	**Lab Number:**	L1929451
Project Number:	RA-008	**Report Date:**	07/15/19

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.

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.

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 Condensation Product".

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 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.

Report Format: Data Usability Report

Project Name:	RAYTHEON WAYLAND	**Lab Number:**	L1929451
Project Number:	RA-008	**Report Date:**	07/15/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

117 Technical Guidance for the Natural Attenuation Indicators: Methane, Ethane, and Ethene, EPA-NE, Revision 1, February 21, 2002 and Sample Preparation & Calculations for Dissolved Gas Analysis in Water Samples using a GC Headspace Equilibration Technique, EPA RSKSOP-175, Revision 2, May 2004.

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

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), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

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.
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, SM4500Cl-D, SM2320B, SM2540C, SM4500H-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.

MANSFIELD CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 7/9/19

ALPHA Job #: L1929451

Client Information

Client: Innovative Engineering Solutions Inc
Address: 32 Penal St
Braintree MA 02184
Phone: 508-668-0033
Fax: 508-668-5175
Email: v.pariyar@IESsolutions.com
☒ These samples have been previously analyzed by Alpha

Project Information

Project Name: Raytheon Wayland
Project Location: Wayland Ma
Project #: RA-098
Project Manager: Vicki Pariyar
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: 5 Days 7/15/19 Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

PLEASE NOTE
MS/MSD (at unit cost) will be omitted unless you check here: ☐

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260C	9060A TOC	6010D Total Fe	SM4500 NH3	Dissolved Gases (RSK 175 Ethane, Ethene, Methane)	EPA 300.1 SM4500 NO3	EPA 300.1 SM4500 SO4 Cl	SAMPLE HANDLING	TOTAL # BOTTLES
2945/01	MW-267S-20190708	7/8/19	0920	GW	SB	X	X	X	X	X	X			11
02	MW-262M-20190708	7/8/19	1010	GW	SB	X	X	X	X	X	X			11
03	MW-268S-20190708	7/8/19	0645	GW	SB	X	X	X	X	X	X			11
04	MW-268M-20190708	7/8/19	0735	GW	SB	X	X	X	X	X	X			11
05	REW-7-20190708	7/8/19	1100	GW	SB	X	X	X	X	X	X			11
06	REW-11-20190708	7/8/19	0825	GW	SB	X	X	X	X	X	X			11
07	Dup-20190708	7/8/19	↓	GW	—	X								3
08	Trip Blanks	—	—	—	—	X								2
09	Temp Blank	—	—	—	—									1

SAMPLE HANDLING
Filtration
☐ Done ☐ Not needed ☐ Lab to do
Preservation
☐ Lab to do (Please specify below)

Container Type	V	V	P	P	V		P						
Preservative	B	D	C	D	B		A						

Relinquished By:	Date/Time	Received By:	Date/Time
	7/8/19 1240	-AAL	7/8/19 12:40
	7/9/19		7/9/19 1604
AAL	7/9/19 1707		7/9/19 1707

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.