WSP USA, Inc.
100 Apollo Drive, 3rd Floor
Chelmsford, MA 01824

October 9, 2023

Mr. Joseph T. Martella II, Senior Engineer
Rhode Island Department of Environmental Management
Office of Land Revitalization and Sustainable Materials Management
Site Remediation Program
235 Promenade Street
Providence, Rhode Island 02908

RE: Parcel C Groundwater Sampling – August 28, 2023
Former Gorham Manufacturing Facility
333 Adelaide Avenue, Providence, Rhode Island
WSP Project No. 3652220351

Dear Mr. Martella:

This letter summarizes the August 28, 2023, collection and analysis of a groundwater sample from monitoring well MW-D within Parcel C at the Former Gorham Manufacturing Site in Providence, Rhode Island (Figure 1). This activity was performed to supplement historic periodic groundwater testing done between July 2015 and September 2017. The groundwater sampling and review was conducted in accordance with the Remedial Action Work Plan (RAWP) dated March 11, 2015, and the corresponding Rhode Island Department of Environmental Management (RIDEM) July 9, 2015, Order of Approval (Order of Approval).

Background

Extensive groundwater investigations were previously conducted throughout the upland portions of the Former Gorham Manufacturing Site property, including Parcel C, and within the Mashapaug Inner and Outer Coves. The groundwater investigations identified low levels of volatile organic compounds (VOCs) in groundwater immediately upgradient of and along the southern shore of the Inner Cove (Parcels C and C-1).

Based on 2006-2010 groundwater data, tetrachloroethylene (PCE) and trichloroethylene (TCE) were present at low levels in groundwater from the northwestern corner of Parcel C. Groundwater and Inner Cove sediment data collected during the same period (2006-2010) demonstrated that a clear trend of decreasing contaminant concentrations within the groundwater had occurred over time.

RIDEM's Order of Approval required Textron to monitor Parcel C/C-1 groundwater following completion of the remedial action in December 2015, by sampling six wells (MW-235S, MW-236S, MW-237S, MW-D, MW-241, and MW-FS) until data from three consecutive sampling rounds demonstrate that Parcel C groundwater is compliant with RIDEM's GB Groundwater Objectives with no increasing concentrations of VOCs, and that Parcel C-1 groundwater is compliant with the Massachusetts Department of Environmental Protection (MassDEP) GW-3 Standards with no increasing concentrations of VOCs.

The April 2016 sampling event confirmed that both MW-FS and MW-237S met the required criteria of three consecutive decreasing rounds of groundwater concentrations that were below the MassDEP GW-3 Standards.

These two wells were eliminated from the groundwater monitoring program (April 2016 groundwater monitoring report). Three more wells were eliminated from monitoring following the July 2016 sampling round, specifically MW-235S, MW-236S, and MW-241, in accordance with the Order of Approval. Starting in September 2016, only MW-D has been sampled; it has been sampled fourteen times semi-annually in the late winter/early spring and summer/early fall of each year.

At the time of the Parcel C Closure Report submittal in May 2017, TCE and 1,1-dichloroethene (1,1-DCE) were the only analytes present above their respective GB Groundwater Objectives in MW-D. In 2016 and 2017, TCE had been detected at concentrations ranging from 0.499 milligrams per liter (mg/L) to 3.32 mg/L; most results were above its GB Groundwater Objective of 0.54 mg/L. Concentrations of 1,1-DCE ranged from 0.0019 mg/L to 0.0149 mg/L; some of these results exceeded the GB Groundwater Criteria of 0.007 mg/L. Concentration trends for both analytes were generally decreasing during 2017. Other chemicals that have been detected in MW-D since May 2017 are detected at concentrations well below their respective applicable standards and are not discussed further herein.

APTIM continues to sample monitoring well MW-D semi-annually, and reported concentrations of VOCs, specifically 1,1-DCE and TCE, have continued to trend downward. However, concentrations of TCE typically remain above the GB Groundwater Objective and below the MassDEP GW-3 standards. Previously collected results have been presented in a semi-annual letter report to RIDEM since 2015.

August 2023 Activities

On August 28, 2023, APTIM, of Canton, Massachusetts sampled groundwater monitoring well, MW-D (Figure 2), using the U.S. Environmental Protection Agency (USEPA) low-flow methodology. The one groundwater sample was submitted under chain-of-custody control to an off-site laboratory for VOC analysis by USEPA Method 8260B. Stabilization parameters for this groundwater sampling event are included in Appendix A.

Groundwater Sampling Results

Table 1 summarizes the historic VOC concentrations detected in MW-D including the August 2023 groundwater sampling event. VOC concentrations detected in Parcel C (including MW-D) are compared to the GB Groundwater Objectives, as well as the MassDEP GW-3 Standards (per the 2015 Order of Approval). The analytical laboratory report for the August 2023 groundwater sampling event is included in Appendix B.

As shown in Table 1, results from the August 2023 sampling round show that TCE and cis-1,2-dichloroethene were detected. The TCE concentration of 1.4 mg/L was above its GB Groundwater Objective and its MassDEP GW-3 Standard. The concentration of TCE is consistent with historic sampling event results. The concentration of cis-1,2-dichloroethene was below both the GB Groundwater Objective and MassDEP GW-3 Groundwater Standard. No other compounds were detected in MW-D above the applicable laboratory detection limits.

Groundwater Monitoring Approach

Based on the extensive groundwater data collected, VOC concentrations within the northwestern area of Parcel C have been reduced. In 2016 and 2017, only MW-D continued to exhibit exceedances of GB Groundwater Objectives, specifically for TCE and 1,1-DCE. Concentrations of 1,1-DCE had reduced to below their respective criteria by April 2019, likely as a result of continued biodegradation and natural attenuation in the groundwater. After concentrations of 1,1-DCE rebounded slightly above the criteria in October 2019, concentrations decreased in the subsequent sampling rounds in March 2020, September 2020, and March 2021, and 1,1-DCE has not detected since August 2021. Furthermore, TCE concentrations have also been trending downward since the September 2016 sampling event. In this most recent sampling event (in August 2023, the concentration of TCE is consistent with results observed since March 2020. However, WSP still concludes that the results continue to show an overall downward trend in all analytes since 2016.

The Parcel C/C-1 area is currently being used by the City of Providence School Department as a recreational field. No buildings are planned in the area of MW-D which is located within the woods. The final Environmental Land Use Restrictions (ELUR) and Soil Management Plan (SMP) has been signed by the City of Providence and filed in the Providence Land Evidence Records. A copy of this signed ELUR and SMP was submitted to RIDEM for their records. The ELUR includes the provision preventing the use of the groundwater for potable and non-potable use, and that no subsurface structures can be constructed over the groundwater without prior approval from RIDEM. This provision addresses the potential future vapor intrusion issue associated with the RIDEM GB Groundwater Objective.

Textron proposes to continue monitoring the groundwater quality at MW-D on a semi-annual basis, pending continued compliance with RIDEM's GB Groundwater Objectives. The next scheduled sampling event will tentatively be in February 2024. A report will be prepared and submitted to RIDEM in April/May 2024 to update the status of this one monitoring well and provide an annual recommendation concerning the continuation of the semi-annual monitoring of this well.

Please contact Amy Fiorellino, Textron, (401-328-6684) or Mykel Mendes, WSP, (951-312-8756) if we can provide additional information or answer any questions concerning these groundwater monitoring data and planned future sampling of MW-D.

Sincerely,
WSP USA, Inc.

Mykel Mendes	Jane Parkin Kullmann, PhD, CPH, DABT
Project Manager	Lead Consultant - Risk Assessor

Enclosures: Table 1 – Summary of Parcel C/C-1 Groundwater Results 1989 – 2023
Figure 1 – Site Location Map
Figure 2 – Parcel C/C-1 Site Map
Appendix A – Stabilization Parameters August 2023 Sampling Event
Appendix B – Laboratory Report August 2023 Sampling Event

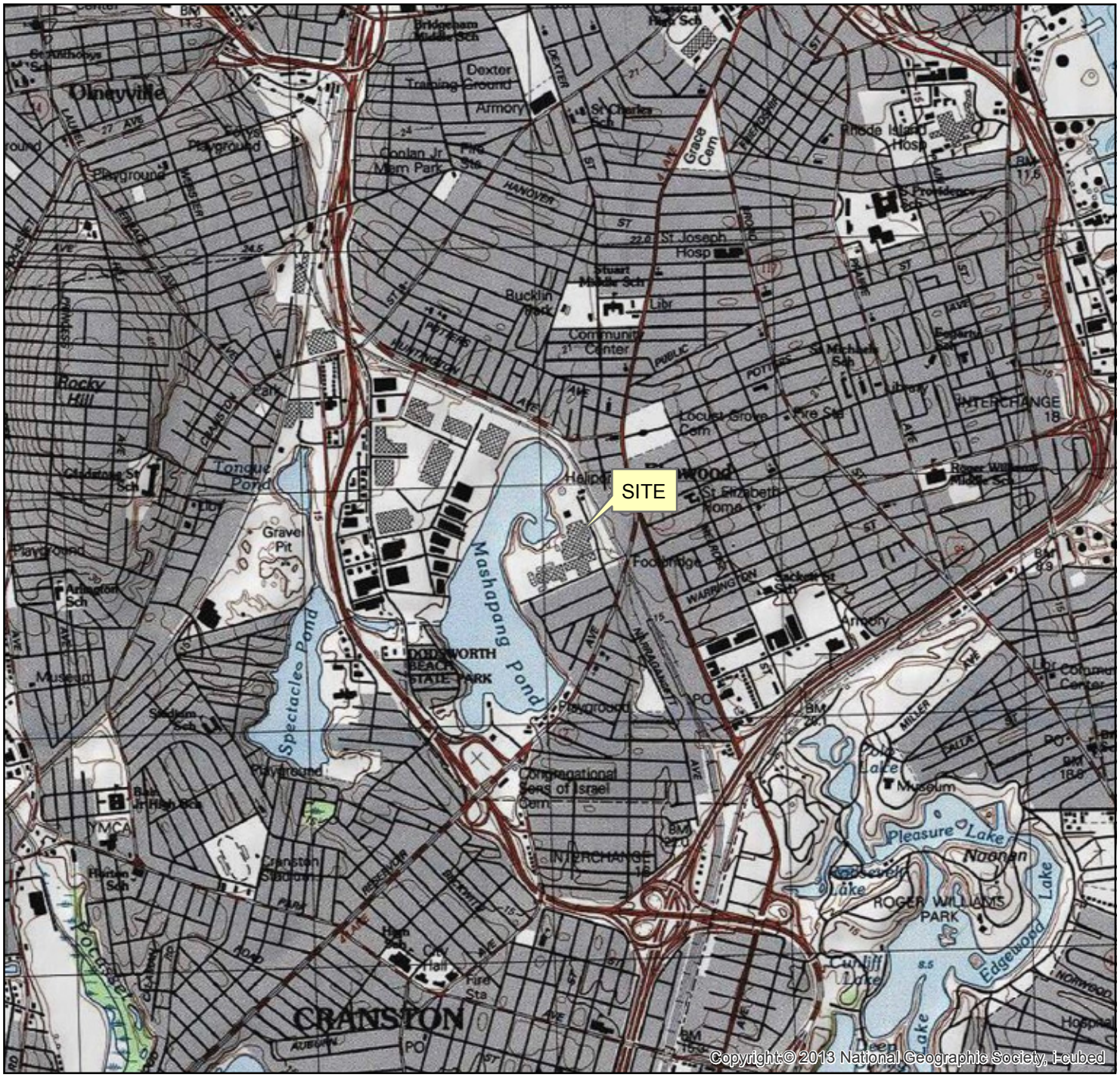
cc: Robert Azar, Deputy Director - Providence Planning & Development (Electronic)
A. Fiorellino, Textron, Inc. (Electronic)
G. Simpson, Textron, Inc. (Electronic)
Knight Memorial Library Repository

Tables

Table 1
MW-D/B-4
Groundwater Results 1989 - 2023
Former Gorham Manufacturing Site
Providence, RI

| Location: | | | | MW-D/B-4 | | | |

Figures



Location of Site

SITE LOCATION MAP

Former Gorham
Manufacturing Site

333 Adelaide Avenue
Providence, Rhode Island

Notes & Sources

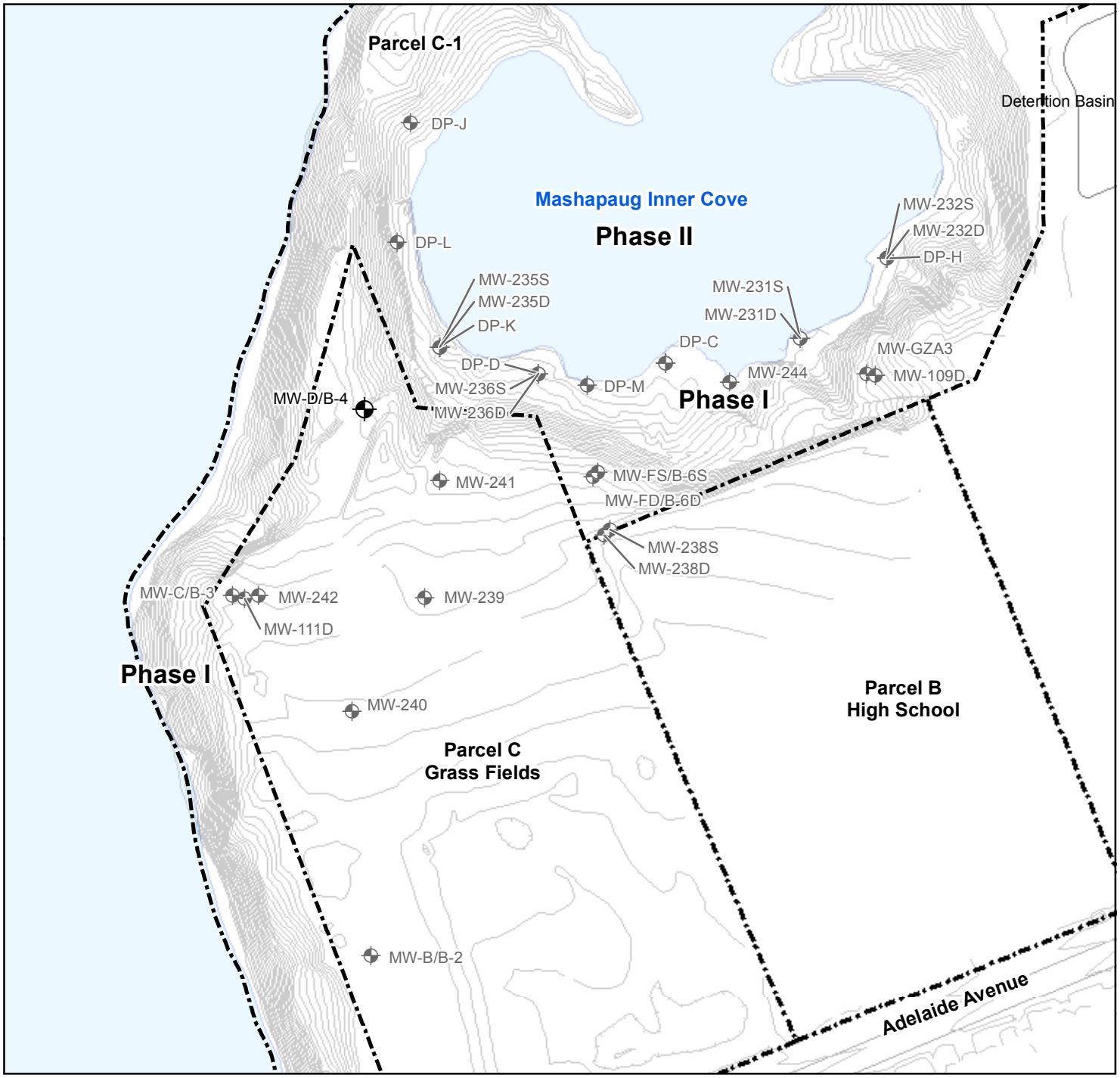
0 1,000 2,000
Feet

N

WSP USA, Inc.
100 Apollo Road
Chelmsford, MA 01824

FIGURE
1

H:\Textron-Gorham\Providence_RI\Task7\MXD\Fig1_ParcelC_MW-D.mxd May 08, 2019 DWN: emily.gardiner CHKD: AKN, Rev: MDM 11.02.22



PARCEL C: MW-D

Former Gorham Manufacturing Site

333 Adelaide Avenue
Providence, Rhode Island

Legend

- Existing Monitoring Well
- Abandoned Monitoring Well
- Approximate Site Boundary
- Mashapaug Pond
- Elevation Contour

Location of Site

Notes & Sources

0 140 Feet

N

WSP USA, Inc.
100 Apollo Road
Chelmsford, MA 01824

FIGURE 2

H:\Textron-Gorham\Providence_RI\Task7\MXD\Fig1_ParcelC_MW-D.mxd May 08, 2019 DWN: emily.gardiner CHKD: HWC, Rev: MDM 11.02.22

Appendix A

Stabilization Parameters August 2023 Sampling Event

Appendix A - Stabilization Parameters for MW-D, August 2023 Sampling Event				
Date	Feb-22	Aug-22	Feb-23	Aug-23
pH	6.94	6.36	7.9	6.21
Temp (°C)	9.26	13.32	10.78	13.16
Conductivity (µS/cm)	313	375	302	339
DO (mg/L)	3.36	0.93	4.61	1.02
ORP (mV)	-35.2	115.6	123.1	-153.4
Turbidity (NTU)	0.5	0.4	0.4	0.6
Depth to Water (ft)	20.18	21.18	19.97	20.97
Depth to Bottom (ft)	22*	33.75	33.85	33.78

* Possible obstruction noted at 22 ft.

Prepared by: MDM 09/29/23
Checked by: JPK 10/6/2023

Appendix B

Laboratory Report, August 2023 Sampling Event

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September 8, 2023

Catherine Joe Mainville
APTIM - MA
150 Royall Street
Canton, MA 02021

Project Location: 333 Adelaide Avenue, Providence, RI
Client Job Number:
Project Number: 631010697
Laboratory Work Order Number: 23H4127

Enclosed are results of analyses for samples as received by the laboratory on August 29, 2023. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Theresa L. Ferrentino
Project Manager

Table of Contents

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

APTIM - MA
150 Royall Street
Canton, MA 02021
ATTN: Catherine Joe Mainville

REPORT DATE: 9/8/2023

PURCHASE ORDER NUMBER: 216859 CO 002

PROJECT NUMBER: 631010697

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 23H4127

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: 333 Adelaide Avenue, Providence, RI

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-D	23H4127-01	Ground Water		SW-846 8260D	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8260D

Qualifications:

RL-11

Elevated reporting limit due to high concentration of target compounds.

Analyte & Samples(s) Qualified:

23H4127-01[MW-D]

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

trans-1,4-Dichloro-2-butene
23H4127-01[MW-D], B350738-BLK1, B350738-BS1, B350738-BSD1, S092974-CCV1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

Methyl Acetate
S092974-CCV1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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Project Location: 333 Adelaide Avenue, Providence Sample Description: Work Order: 23H4127

Date Received: 8/29/2023

Field Sample #: MW-D Sampled: 8/28/2023 08:30

Sample ID: 23H4127-01

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	1000	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Acrylonitrile	ND	100	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
tert-Amyl Methyl Ether (TAME)	ND	10	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Benzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Bromobenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Bromochloromethane	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Bromodichloromethane	ND	10	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Bromoform	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Bromomethane	ND	40	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
2-Butanone (MEK)	ND	400	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
tert-Butyl Alcohol (TBA)	ND	400	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
n-Butylbenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
sec-Butylbenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
tert-Butylbenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
tert-Butyl Ethyl Ether (TBEE)	ND	10	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Carbon Disulfide	ND	100	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Carbon Tetrachloride	ND	100	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Chlorobenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Chlorodibromomethane	ND	10	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Chloroethane	ND	40	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Chloroform	ND	40	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Chloromethane	ND	40	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
2-Chlorotoluene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
4-Chlorotoluene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,2-Dibromo-3-chloropropane (DBCP)	ND	100	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,2-Dibromoethane (EDB)	ND	10	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Dibromomethane	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,2-Dichlorobenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,3-Dichlorobenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,4-Dichlorobenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
trans-1,4-Dichloro-2-butene	ND	40	µg/L	20	V-05	SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Dichlorodifluoromethane (Freon 12)	ND	40	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,1-Dichloroethane	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,2-Dichloroethane	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,1-Dichloroethylene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
cis-1,2-Dichloroethylene	88	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
trans-1,2-Dichloroethylene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,2-Dichloropropane	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,3-Dichloropropane	ND	10	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
2,2-Dichloropropane	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,1-Dichloropropene	ND	40	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
cis-1,3-Dichloropropene	ND	10	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
trans-1,3-Dichloropropene	ND	10	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Diethyl Ether	ND	40	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD

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Project Location: 333 Adelaide Avenue, Providence Sample Description: Work Order: 23H4127

Date Received: 8/29/2023

Field Sample #: MW-D Sampled: 8/28/2023 08:30

Sample ID: 23H4127-01

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	10	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,4-Dioxane	ND	1000	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Ethylbenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Hexachlorobutadiene	ND	12	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
2-Hexanone (MBK)	ND	200	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Isopropylbenzene (Cumene)	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
p-Isopropyltoluene (p-Cymene)	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Methyl Acetate	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Methyl tert-Butyl Ether (MTBE)	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Methyl Cyclohexane	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Methylene Chloride	ND	100	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
4-Methyl-2-pentanone (MIBK)	ND	200	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Naphthalene	ND	40	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
n-Propylbenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Styrene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,1,1,2-Tetrachloroethane	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,1,2,2-Tetrachloroethane	ND	10	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Tetrachloroethylene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Tetrahydrofuran	ND	200	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Toluene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,2,3-Trichlorobenzene	ND	100	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,2,4-Trichlorobenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,3,5-Trichlorobenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,1,1-Trichloroethane	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,1,2-Trichloroethane	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Trichloroethylene	1400	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Trichlorofluoromethane (Freon 11)	ND	40	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,2,3-Trichloropropane	ND	40	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,2,4-Trimethylbenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
1,3,5-Trimethylbenzene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Vinyl Chloride	ND	40	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
m+p Xylene	ND	40	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
o-Xylene	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD
Xylenes (total)	ND	20	µg/L	20		SW-846 8260D	8/31/23	9/2/23 5:38	LBD

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	90.5	70-130		9/2/23 5:38
Toluene-d8	102	70-130		9/2/23 5:38
4-Bromofluorobenzene	99.4	70-130		9/2/23 5:38

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Sample Extraction Data

Prep Method:SW-846 5030B **Analytical Method:SW-846 8260D**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
23H4127-01 [MW-D]	B350738	0.25	5.00	08/31/23

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B350738 - SW-846 5030B										
Blank (B350738-BLK1)				Prepared: 08/31/23 Analyzed: 09/01/23						
Acetone	ND	50	µg/L							
Acrylonitrile	ND	5.0	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
Bromobenzene	ND	1.0	µg/L							
Bromochloromethane	ND	1.0	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	1.0	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	20	µg/L							
tert-Butyl Alcohol (TBA)	ND	20	µg/L							
n-Butylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	1.0	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	5.0	µg/L							
Chlorobenzene	ND	1.0	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	2.0	µg/L							
Chloroform	ND	2.0	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	1.0	µg/L							
4-Chlorotoluene	ND	1.0	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	1.0	µg/L							
1,4-Dichlorobenzene	ND	1.0	µg/L							
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L							V-05
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L							
1,1-Dichloroethane	ND	1.0	µg/L							
1,2-Dichloroethane	ND	1.0	µg/L							
1,1-Dichloroethylene	ND	1.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
trans-1,2-Dichloroethylene	ND	1.0	µg/L							
1,2-Dichloropropane	ND	1.0	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	1.0	µg/L							
1,1-Dichloropropene	ND	2.0	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	50	µg/L							
Ethylbenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	0.60	µg/L							
2-Hexanone (MBK)	ND	10	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl Acetate	ND	1.0	µg/L							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B350738 - SW-846 5030B										
Blank (B350738-BLK1)				Prepared: 08/31/23 Analyzed: 09/01/23						
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							
Methyl Cyclohexane	ND	1.0	µg/L							
Methylene Chloride	ND	5.0	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L							
Naphthalene	ND	2.0	µg/L							
n-Propylbenzene	ND	1.0	µg/L							
Styrene	ND	1.0	µg/L							
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L							
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L							
Tetrachloroethylene	ND	1.0	µg/L							
Tetrahydrofuran	ND	10	µg/L							
Toluene	ND	1.0	µg/L							
1,2,3-Trichlorobenzene	ND	5.0	µg/L							
1,2,4-Trichlorobenzene	ND	1.0	µg/L							
1,3,5-Trichlorobenzene	ND	1.0	µg/L							
1,1,1-Trichloroethane	ND	1.0	µg/L							
1,1,2-Trichloroethane	ND	1.0	µg/L							
Trichloroethylene	ND	1.0	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L							
1,2,3-Trichloropropane	ND	2.0	µg/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L							
1,2,4-Trimethylbenzene	ND	1.0	µg/L							
1,3,5-Trimethylbenzene	ND	1.0	µg/L							
Vinyl Chloride	ND	2.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	1.0	µg/L							
Xylenes (total)	ND	1.0	µg/L							
Surrogate: 1,2-Dichloroethane-d4	*23.0*		µg/L	25.0		91.8	70-130			
Surrogate: Toluene-d8	*24.7*		µg/L	25.0		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	*24.8*		µg/L	25.0		99.2	70-130			
LCS (B350738-BS1)				Prepared: 08/31/23 Analyzed: 09/01/23						
Acetone	84.2	50	µg/L	100		84.2	70-160			†
Acrylonitrile	9.13	5.0	µg/L	10.0		91.3	70-130			
tert-Amyl Methyl Ether (TAME)	9.49	0.50	µg/L	10.0		94.9	70-130			
Benzene	9.70	1.0	µg/L	10.0		97.0	70-130			
Bromobenzene	10.0	1.0	µg/L	10.0		100	70-130			
Bromochloromethane	9.96	1.0	µg/L	10.0		99.6	70-130			
Bromodichloromethane	9.84	0.50	µg/L	10.0		98.4	70-130			
Bromoform	9.25	1.0	µg/L	10.0		92.5	70-130			
Bromomethane	8.66	2.0	µg/L	10.0		86.6	40-160			†
2-Butanone (MEK)	91.8	20	µg/L	100		91.8	40-160			†
tert-Butyl Alcohol (TBA)	84.6	20	µg/L	100		84.6	40-160			†
n-Butylbenzene	8.48	1.0	µg/L	10.0		84.8	70-130			
sec-Butylbenzene	8.67	1.0	µg/L	10.0		86.7	70-130			
tert-Butylbenzene	9.06	1.0	µg/L	10.0		90.6	70-130			
tert-Butyl Ethyl Ether (TBEE)	9.58	0.50	µg/L	10.0		95.8	70-130			
Carbon Disulfide	99.6	5.0	µg/L	100		99.6	70-130			
Carbon Tetrachloride	9.55	5.0	µg/L	10.0		95.5	70-130			
Chlorobenzene	9.73	1.0	µg/L	10.0		97.3	70-130			
Chlorodibromomethane	10.1	0.50	µg/L	10.0		101	70-130			
Chloroethane	9.46	2.0	µg/L	10.0		94.6	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B350738 - SW-846 5030B											
LCS (B350738-BS1)				Prepared: 08/31/23 Analyzed: 09/01/23							
Chloroform	9.48	2.0	µg/L	10.0		94.8	70-130				
Chloromethane	9.88	2.0	µg/L	10.0		98.8	40-160				†
2-Chlorotoluene	9.44	1.0	µg/L	10.0		94.4	70-130				
4-Chlorotoluene	9.41	1.0	µg/L	10.0		94.1	70-130				
1,2-Dibromo-3-chloropropane (DBCP)	8.74	5.0	µg/L	10.0		87.4	70-130				
1,2-Dibromoethane (EDB)	10.8	0.50	µg/L	10.0		108	70-130				
Dibromomethane	10.5	1.0	µg/L	10.0		105	70-130				
1,2-Dichlorobenzene	9.98	1.0	µg/L	10.0		99.8	70-130				
1,3-Dichlorobenzene	9.62	1.0	µg/L	10.0		96.2	70-130				
1,4-Dichlorobenzene	9.64	1.0	µg/L	10.0		96.4	70-130				
trans-1,4-Dichloro-2-butene	7.48	2.0	µg/L	10.0		74.8	70-130			V-05	
Dichlorodifluoromethane (Freon 12)	10.3	2.0	µg/L	10.0		103	40-160				†
1,1-Dichloroethane	9.60	1.0	µg/L	10.0		96.0	70-130				
1,2-Dichloroethane	10.4	1.0	µg/L	10.0		104	70-130				
1,1-Dichloroethylene	9.21	1.0	µg/L	10.0		92.1	70-130				
cis-1,2-Dichloroethylene	9.43	1.0	µg/L	10.0		94.3	70-130				
trans-1,2-Dichloroethylene	9.69	1.0	µg/L	10.0		96.9	70-130				
1,2-Dichloropropane	10.4	1.0	µg/L	10.0		104	70-130				
1,3-Dichloropropane	10.4	0.50	µg/L	10.0		104	70-130				
2,2-Dichloropropane	8.46	1.0	µg/L	10.0		84.6	40-130				†
1,1-Dichloropropene	9.75	2.0	µg/L	10.0		97.5	70-130				
cis-1,3-Dichloropropene	9.96	0.50	µg/L	10.0		99.6	70-130				
trans-1,3-Dichloropropene	9.94	0.50	µg/L	10.0		99.4	70-130				
Diethyl Ether	9.24	2.0	µg/L	10.0		92.4	70-130				
Diisopropyl Ether (DIPE)	9.48	0.50	µg/L	10.0		94.8	70-130				
1,4-Dioxane	89.0	50	µg/L	100		89.0	40-130				†
Ethylbenzene	9.69	1.0	µg/L	10.0		96.9	70-130				
Hexachlorobutadiene	8.62	0.60	µg/L	10.0		86.2	70-130				
2-Hexanone (MBK)	101	10	µg/L	100		101	70-160				†
Isopropylbenzene (Cumene)	9.46	1.0	µg/L	10.0		94.6	70-130				
p-Isopropyltoluene (p-Cymene)	8.76	1.0	µg/L	10.0		87.6	70-130				
Methyl Acetate	11.0	1.0	µg/L	10.0		110	70-130				
Methyl tert-Butyl Ether (MTBE)	9.62	1.0	µg/L	10.0		96.2	70-130				
Methyl Cyclohexane	9.40	1.0	µg/L	10.0		94.0	70-130				
Methylene Chloride	9.37	5.0	µg/L	10.0		93.7	70-130				
4-Methyl-2-pentanone (MIBK)	102	10	µg/L	100		102	70-160				†
Naphthalene	9.81	2.0	µg/L	10.0		98.1	40-130				†
n-Propylbenzene	9.32	1.0	µg/L	10.0		93.2	70-130				
Styrene	10.0	1.0	µg/L	10.0		100	70-130				
1,1,1,2-Tetrachloroethane	10.2	1.0	µg/L	10.0		102	70-130				
1,1,2,2-Tetrachloroethane	9.74	0.50	µg/L	10.0		97.4	70-130				
Tetrachloroethylene	10.3	1.0	µg/L	10.0		103	70-130				
Tetrahydrofuran	8.76	10	µg/L	10.0		87.6	70-130				
Toluene	9.97	1.0	µg/L	10.0		99.7	70-130				
1,2,3-Trichlorobenzene	10.3	5.0	µg/L	10.0		103	70-130				
1,2,4-Trichlorobenzene	10.2	1.0	µg/L	10.0		102	70-130				
1,3,5-Trichlorobenzene	9.67	1.0	µg/L	10.0		96.7	70-130				
1,1,1-Trichloroethane	9.83	1.0	µg/L	10.0		98.3	70-130				
1,1,2-Trichloroethane	10.8	1.0	µg/L	10.0		108	70-130				
Trichloroethylene	10.8	1.0	µg/L	10.0		108	70-130				
Trichlorofluoromethane (Freon 11)	9.43	2.0	µg/L	10.0		94.3	70-130				
1,2,3-Trichloropropane	10.2	2.0	µg/L	10.0		102	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B350738 - SW-846 5030B											
LCS (B350738-BS1)				Prepared: 08/31/23 Analyzed: 09/01/23							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	9.66	1.0	µg/L	10.0		96.6	70-130				
1,2,4-Trimethylbenzene	9.19	1.0	µg/L	10.0		91.9	70-130				
1,3,5-Trimethylbenzene	9.57	1.0	µg/L	10.0		95.7	70-130				
Vinyl Chloride	10.0	2.0	µg/L	10.0		100	40-160				†
m+p Xylene	19.0	2.0	µg/L	20.0		95.0	70-130				
o-Xylene	9.64	1.0	µg/L	10.0		96.4	70-130				
Xylenes (total)	28.6	1.0	µg/L	30.0		95.5	70-130				
Surrogate: 1,2-Dichloroethane-d4	*22.0*		µg/L	25.0		87.8	70-130				
Surrogate: Toluene-d8	*25.1*		µg/L	25.0		100	70-130				
Surrogate: 4-Bromofluorobenzene	*25.6*		µg/L	25.0		103	70-130				
LCS Dup (B350738-BSD1)				Prepared: 08/31/23 Analyzed: 09/01/23							
Acetone	83.6	50	µg/L	100		83.6	70-160	0.644	25		†
Acrylonitrile	9.24	5.0	µg/L	10.0		92.4	70-130	1.20	25		
tert-Amyl Methyl Ether (TAME)	9.48	0.50	µg/L	10.0		94.8	70-130	0.105	25		
Benzene	9.47	1.0	µg/L	10.0		94.7	70-130	2.40	25		
Bromobenzene	9.66	1.0	µg/L	10.0		96.6	70-130	3.56	25		
Bromochloromethane	9.77	1.0	µg/L	10.0		97.7	70-130	1.93	25		
Bromodichloromethane	9.91	0.50	µg/L	10.0		99.1	70-130	0.709	25		
Bromoform	9.38	1.0	µg/L	10.0		93.8	70-130	1.40	25		
Bromomethane	8.84	2.0	µg/L	10.0		88.4	40-160	2.06	25		†
2-Butanone (MEK)	91.8	20	µg/L	100		91.8	40-160	0.0218	25		†
tert-Butyl Alcohol (TBA)	84.3	20	µg/L	100		84.3	40-160	0.414	25		†
n-Butylbenzene	8.32	1.0	µg/L	10.0		83.2	70-130	1.90	25		
sec-Butylbenzene	8.56	1.0	µg/L	10.0		85.6	70-130	1.28	25		
tert-Butylbenzene	8.74	1.0	µg/L	10.0		87.4	70-130	3.60	25		
tert-Butyl Ethyl Ether (TBEE)	9.41	0.50	µg/L	10.0		94.1	70-130	1.79	25		
Carbon Disulfide	96.1	5.0	µg/L	100		96.1	70-130	3.53	25		
Carbon Tetrachloride	9.21	5.0	µg/L	10.0		92.1	70-130	3.62	25		
Chlorobenzene	9.68	1.0	µg/L	10.0		96.8	70-130	0.515	25		
Chlorodibromomethane	9.92	0.50	µg/L	10.0		99.2	70-130	2.09	25		
Chloroethane	9.36	2.0	µg/L	10.0		93.6	70-130	1.06	25		
Chloroform	9.31	2.0	µg/L	10.0		93.1	70-130	1.81	25		
Chloromethane	9.60	2.0	µg/L	10.0		96.0	40-160	2.87	25		†
2-Chlorotoluene	9.26	1.0	µg/L	10.0		92.6	70-130	1.93	25		
4-Chlorotoluene	9.31	1.0	µg/L	10.0		93.1	70-130	1.07	25		
1,2-Dibromo-3-chloropropane (DBCP)	9.28	5.0	µg/L	10.0		92.8	70-130	5.99	25		
1,2-Dibromoethane (EDB)	10.6	0.50	µg/L	10.0		106	70-130	1.69	25		
Dibromomethane	10.5	1.0	µg/L	10.0		105	70-130	0.286	25		
1,2-Dichlorobenzene	9.79	1.0	µg/L	10.0		97.9	70-130	1.92	25		
1,3-Dichlorobenzene	9.52	1.0	µg/L	10.0		95.2	70-130	1.04	25		
1,4-Dichlorobenzene	9.48	1.0	µg/L	10.0		94.8	70-130	1.67	25		
trans-1,4-Dichloro-2-butene	7.60	2.0	µg/L	10.0		76.0	70-130	1.59	25	V-05	
Dichlorodifluoromethane (Freon 12)	10.1	2.0	µg/L	10.0		101	40-160	2.65	25		†
1,1-Dichloroethane	9.44	1.0	µg/L	10.0		94.4	70-130	1.68	25		
1,2-Dichloroethane	9.60	1.0	µg/L	10.0		96.0	70-130	8.48	25		
1,1-Dichloroethylene	8.99	1.0	µg/L	10.0		89.9	70-130	2.42	25		
cis-1,2-Dichloroethylene	9.22	1.0	µg/L	10.0		92.2	70-130	2.25	25		
trans-1,2-Dichloroethylene	9.37	1.0	µg/L	10.0		93.7	70-130	3.36	25		
1,2-Dichloropropane	10.3	1.0	µg/L	10.0		103	70-130	1.26	25		
1,3-Dichloropropane	10.7	0.50	µg/L	10.0		107	70-130	2.47	25		
2,2-Dichloropropane	7.93	1.0	µg/L	10.0		79.3	40-130	6.47	25		†

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B350738 - SW-846 5030B										
LCS Dup (B350738-BSD1)				Prepared: 08/31/23 Analyzed: 09/01/23						
1,1-Dichloropropene	9.26	2.0	µg/L	10.0		92.6	70-130	5.16	25	
cis-1,3-Dichloropropene	10.0	0.50	µg/L	10.0		100	70-130	0.401	25	
trans-1,3-Dichloropropene	10.2	0.50	µg/L	10.0		102	70-130	2.58	25	
Diethyl Ether	9.13	2.0	µg/L	10.0		91.3	70-130	1.20	25	
Diisopropyl Ether (DIPE)	9.20	0.50	µg/L	10.0		92.0	70-130	3.00	25	
1,4-Dioxane	89.0	50	µg/L	100		89.0	40-130	0.0337	50	† ‡
Ethylbenzene	9.55	1.0	µg/L	10.0		95.5	70-130	1.46	25	
Hexachlorobutadiene	8.70	0.60	µg/L	10.0		87.0	70-130	0.924	25	
2-Hexanone (MBK)	101	10	µg/L	100		101	70-160	0.723	25	†
Isopropylbenzene (Cumene)	9.13	1.0	µg/L	10.0		91.3	70-130	3.55	25	
p-Isopropyltoluene (p-Cymene)	8.72	1.0	µg/L	10.0		87.2	70-130	0.458	25	
Methyl Acetate	10.6	1.0	µg/L	10.0		106	70-130	4.35	25	
Methyl tert-Butyl Ether (MTBE)	9.41	1.0	µg/L	10.0		94.1	70-130	2.21	25	
Methyl Cyclohexane	9.16	1.0	µg/L	10.0		91.6	70-130	2.59	25	
Methylene Chloride	9.26	5.0	µg/L	10.0		92.6	70-130	1.18	25	
4-Methyl-2-pentanone (MIBK)	102	10	µg/L	100		102	70-160	0.481	25	†
Naphthalene	9.65	2.0	µg/L	10.0		96.5	40-130	1.64	25	†
n-Propylbenzene	9.12	1.0	µg/L	10.0		91.2	70-130	2.17	25	
Styrene	9.84	1.0	µg/L	10.0		98.4	70-130	1.91	25	
1,1,1,2-Tetrachloroethane	9.89	1.0	µg/L	10.0		98.9	70-130	2.79	25	
1,1,2,2-Tetrachloroethane	9.62	0.50	µg/L	10.0		96.2	70-130	1.24	25	
Tetrachloroethylene	10.2	1.0	µg/L	10.0		102	70-130	0.779	25	
Tetrahydrofuran	8.66	10	µg/L	10.0		86.6	70-130	1.15	25	
Toluene	9.93	1.0	µg/L	10.0		99.3	70-130	0.402	25	
1,2,3-Trichlorobenzene	9.82	5.0	µg/L	10.0		98.2	70-130	4.77	25	
1,2,4-Trichlorobenzene	10.0	1.0	µg/L	10.0		100	70-130	1.38	25	
1,3,5-Trichlorobenzene	9.33	1.0	µg/L	10.0		93.3	70-130	3.58	25	
1,1,1-Trichloroethane	9.50	1.0	µg/L	10.0		95.0	70-130	3.41	25	
1,1,2-Trichloroethane	10.5	1.0	µg/L	10.0		105	70-130	2.54	25	
Trichloroethylene	10.8	1.0	µg/L	10.0		108	70-130	0.0927	25	
Trichlorofluoromethane (Freon 11)	9.50	2.0	µg/L	10.0		95.0	70-130	0.740	25	
1,2,3-Trichloropropane	9.90	2.0	µg/L	10.0		99.0	70-130	3.08	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	9.31	1.0	µg/L	10.0		93.1	70-130	3.69	25	
1,2,4-Trimethylbenzene	9.03	1.0	µg/L	10.0		90.3	70-130	1.76	25	
1,3,5-Trimethylbenzene	9.28	1.0	µg/L	10.0		92.8	70-130	3.08	25	
Vinyl Chloride	9.74	2.0	µg/L	10.0		97.4	40-160	2.63	25	†
m+p Xylene	18.6	2.0	µg/L	20.0		93.0	70-130	2.07	25	
o-Xylene	9.49	1.0	µg/L	10.0		94.9	70-130	1.57	25	
Xylenes (total)	28.1	1.0	µg/L	30.0		93.7	70-130	1.90	25	
Surrogate: 1,2-Dichloroethane-d4	*22.2*		µg/L	25.0		88.9	70-130			
Surrogate: Toluene-d8	*25.3*		µg/L	25.0		101	70-130			
Surrogate: 4-Bromofluorobenzene	*25.4*		µg/L	25.0		102	70-130			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
RL-11	Elevated reporting limit due to high concentration of target compounds.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260D in Water	
Acetone	CT,ME,NH,VA,NY
Acrylonitrile	CT,ME,NH,VA,NY
tert-Amyl Methyl Ether (TAME)	ME,NH,VA,NY
Benzene	CT,ME,NH,VA,NY
Bromobenzene	ME,NY
Bromochloromethane	ME,NH,VA,NY
Bromodichloromethane	CT,ME,NH,VA,NY
Bromoform	CT,ME,NH,VA,NY
Bromomethane	CT,ME,NH,VA,NY
2-Butanone (MEK)	CT,ME,NH,VA,NY
tert-Butyl Alcohol (TBA)	ME,NH,VA,NY
n-Butylbenzene	ME,VA,NY
sec-Butylbenzene	ME,VA,NY
tert-Butylbenzene	ME,VA,NY
tert-Butyl Ethyl Ether (TBEE)	ME,NH,VA,NY
Carbon Disulfide	CT,ME,NH,VA,NY
Carbon Tetrachloride	CT,ME,NH,VA,NY
Chlorobenzene	CT,ME,NH,VA,NY
Chlorodibromomethane	CT,ME,NH,VA,NY
Chloroethane	CT,ME,NH,VA,NY
Chloroform	CT,ME,NH,VA,NY
Chloromethane	CT,ME,NH,VA,NY
2-Chlorotoluene	ME,NH,VA,NY
4-Chlorotoluene	ME,NH,VA,NY
1,2-Dibromo-3-chloropropane (DBCP)	ME,NY
1,2-Dibromoethane (EDB)	ME,NY
Dibromomethane	ME,NH,VA,NY
1,2-Dichlorobenzene	CT,ME,NH,VA,NY
1,3-Dichlorobenzene	CT,ME,NH,VA,NY
1,4-Dichlorobenzene	CT,ME,NH,VA,NY
trans-1,4-Dichloro-2-butene	ME,NH,VA,NY
Dichlorodifluoromethane (Freon 12)	ME,NH,VA,NY
1,1-Dichloroethane	CT,ME,NH,VA,NY
1,2-Dichloroethane	CT,ME,NH,VA,NY
1,1-Dichloroethylene	CT,ME,NH,VA,NY
cis-1,2-Dichloroethylene	ME,NY
trans-1,2-Dichloroethylene	CT,ME,NH,VA,NY
1,2-Dichloropropane	CT,ME,NH,VA,NY
1,3-Dichloropropane	ME,VA,NY
2,2-Dichloropropane	ME,NH,VA,NY
1,1-Dichloropropene	ME,NH,VA,NY
cis-1,3-Dichloropropene	CT,ME,NH,VA,NY
trans-1,3-Dichloropropene	CT,ME,NH,VA,NY
Diethyl Ether	ME,NY
Diisopropyl Ether (DIPE)	ME,NH,VA,NY
1,4-Dioxane	ME,NY
Ethylbenzene	CT,ME,NH,VA,NY

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260D in Water	
Hexachlorobutadiene	CT,ME,NH,VA,NY
2-Hexanone (MBK)	CT,ME,NH,VA,NY
Isopropylbenzene (Cumene)	ME,VA,NY
p-Isopropyltoluene (p-Cymene)	CT,ME,NH,VA,NY
Methyl Acetate	ME,NY
Methyl tert-Butyl Ether (MTBE)	CT,ME,NH,VA,NY
Methyl Cyclohexane	NY
Methylene Chloride	CT,ME,NH,VA,NY
4-Methyl-2-pentanone (MIBK)	CT,ME,NH,VA,NY
Naphthalene	ME,NH,VA,NY
n-Propylbenzene	CT,ME,NH,VA,NY
Styrene	CT,ME,NH,VA,NY
1,1,1,2-Tetrachloroethane	CT,ME,NH,VA,NY
1,1,2,2-Tetrachloroethane	CT,ME,NH,VA,NY
Tetrachloroethylene	CT,ME,NH,VA,NY
Toluene	CT,ME,NH,VA,NY
1,2,3-Trichlorobenzene	ME,NH,VA,NY
1,2,4-Trichlorobenzene	CT,ME,NH,VA,NY
1,3,5-Trichlorobenzene	ME
1,1,1-Trichloroethane	CT,ME,NH,VA,NY
1,1,2-Trichloroethane	CT,ME,NH,VA,NY
Trichloroethylene	CT,ME,NH,VA,NY
Trichlorofluoromethane (Freon 11)	CT,ME,NH,VA,NY
1,2,3-Trichloropropane	ME,NH,VA,NY
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	VA,NY
1,2,4-Trimethylbenzene	ME,VA,NY
1,3,5-Trimethylbenzene	ME,VA,NY
Vinyl Chloride	CT,ME,NH,VA,NY
m+p Xylene	CT,ME,NH,VA,NY
o-Xylene	CT,ME,NH,VA,NY
Xylenes (total)	ME,NY

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
CT	Connecticut Department of Public Health	PH-0821	12/31/2024
NY	New York State Department of Health	10899 NELAP	04/1/2024
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2024
ME	State of Maine	MA00100	06/9/2025
VA	Commonwealth of Virginia	460217	12/14/2023

23H4127 TLF

con-test ANALYTICAL LABORATORY

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

Doc # 381 Rev 0 5 8 2015

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Company Name:	Aptim Environmental & Infrastructure, Inc.
Address:	150 Royall Street, Canton, MA 02021
Phone:	617-794-1767
Project Name:	Textron Providence
Project Location:	333 Adelaide Avenue, Providence, RI
Project Number:	631010697
Project Manager:	Catherine Joe
Con-Test Bid:	PO 216859 CO 002
Invoice Recipient:	Catherine Joe
Sampled By:	DANIEL C. CENTY

Requested Turnaround Time
7-Day ☐ 10-Day ☑
Other:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☑ EXCEL ☐
Other: Equis format
Enhanced Data Package Required: ☐
Email To: catherine.joe@aptim.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	[1]Matrix Code	Conc Code	# of Containers	EPA 8260C (VOCs)
1	MW-D	8/8/23	0830		G	GW	U	3	2
						GW	U	H	
						GW	U	V	

[2] Preservation Code
[3] Container Code

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

[1] **Matrix Codes:**
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil/Solid
SL = Sludge
O = Other (please define)

[2] **Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

[3] **Container Codes:**
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define)

Comments: GIS Key to Catherine.joe@aptim.com

Please use the following codes to indicate possible sample concentration within the **Conc Code** column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time: 8/8/23 1245
Received by: (signature)	Date/Time: 8/9/23 1138
Relinquished by: (signature)	Date/Time: 8/9/23 1522
Received by: (signature)	Date/Time: 8/10/23 1522
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Detection Limit Requirements
MA
CT
Other:

Program Information

○ MCP Analytical Certification Form Required
○ RCP Analysis Certification Form Required
○ MA State DW Form Required
PWSID # _____

NELAC and AIHA-LAP, LLC Accredited

TURNAROUND TIME (BUSINESS DAYS) STARTS AT 9:00 AM THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON THIS CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME CANNOT START UNTIL ALL QUESTIONS HAVE BEEN ANSWERED.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

Table of Contents

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-ELON-0001 v07_Sample Receiving Checklist
	Effective Date: 07/13/2023

Log In Back-Sheet

Client Aptim Environmental Infrastructure

Project Textron Providence

MCP/RCP Required N/A

Deliverable Package Requirement N/A

Location 333 Adelaide Ave Providence

PWSID# (When Applicable) N/A

Arrival Method:

Courier ☑ Fed Ex ☐ Walk In ☐ Other ☐

Received By / Date / Time EGR / 8-29-23 / 1522

Back-Sheet By / Date / Time AAM / 8-30-23 / 0930

Temperature Method Temp. Gun # 5

Temp ✓ < 6° C Actual Temperature 3.1°C

Rush Samples: Yes / (No) Notify

Short Hold: Yes / (No) Notify

Notes regarding Samples/COC outside of SOP:

Login Sample Receipt Checklist – (Rejection Criteria Listing – Using Acceptance Policy) Any False statement will be brought to the attention of the Client – True or False

	True	False
Received on Ice	☑	☐
Received in Cooler	☑	☐
Custody Seal: DATE TIME	☐	☑
COC Relinquished	☑	☐
COC/Samples Labels Agree	☑	☐
All Samples in Good Condition	☑	☐
Samples Received within Holding Time	☑	☐
Is there enough Volume	☑	☐
Proper Media/Container Used	☑	☐
Splitting Samples Required	☐	☑
MS/MSD	☐	☑
Trip Blanks	☐	☑
Lab to Filters	☐	☑
COC Legible	☑	☐

COC Included: (Check all included)

Client ☑ Analysis ☑ Sampler Name ☑

Project ☑ IDs ☑ Collection Date/Time ☑

All Samples Proper pH: (N/A) ☐ ☐

Additional Container Notes

Note: West Virginia requires all samples to have their temperature taken. Note any outliers.

Qualtrax ID: 120836

Quaitrax ID: 120836

Sample	Soils Jars (Circle Amb/Clear)				Ambers					Plastics												VOA Vials				Other / Fill in					
	16oz Amb/Clear	8oz Amb/Clear	4oz Amb/Clear	2oz Amb/Clear	1 Liter			250mL		100mL	1 Liter		500mL		250mL							Unpreserved	HCl	MeOH	D.I. Water	Bisulfate	Col/Bact				
					Unpreserved	HCL	Sulfuric	Sulfuric	Phosphoric	HCl	Unpreserved	Unpreserved	Sulfuric	Unpreserved	Sulfuric	Unpreserved	Trizma	Sulfuric	Nitric	NaOH	Ammonium Acetate	NaOH/Zinc									
1																							2								
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Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-ELON-0001 v07_Sample Receiving Checklist
	Effective Date: 07/13/2023