



January 30, 2017

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

**RE: Parcel C-1 Phase II Area – Mashapaug Pond and Cove, Phase III Area – Northeast Upland and Parcel C Remedial Action Work Plan - Parcel C Groundwater Sampling Former Gorham Manufacturing Facility
333 Adelaide Avenue, Providence, Rhode Island
AMEC Project No. 3652150040.03**

Dear Mr. Martella:

This letter summarizes the December 9, 2016 collection of groundwater samples from Parcel C/C-1 at the Former Gorham Manufacturing Site in Providence, Rhode Island (Figure 1). This activity was performed to supplement groundwater testing done in July and December 2015, and February, April, July and September 2016. This groundwater sampling 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 (MACTEC, 2006a). 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 low-level tetrachloroethylene and trichloroethylene (PCE/TCE) groundwater impacts are present in 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 (AMEC 2014, 2015).

RIDEM's Order of Approval requires Textron to monitor Parcel C/C-1 groundwater following completion of the remedial action, 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 data and data below the MassDEP GW-3 Standards. These two wells were eliminated from the groundwater monitoring program, as stated in our April 2016 groundwater monitoring report dated May 24, 2016. Three more wells were eliminated from monitoring following the July 2016 sampling round, including MW-235S, MW-236S, and MW-241, in accordance with the Order of Approval. The September and December 2016 rounds of groundwater sampling were exclusive to the one remaining groundwater monitoring well MW-D located on Parcel C.

Work Activities Conducted

Amec Foster Wheeler Environment and Infrastructure, Inc., (Amec Foster Wheeler) gauged the depth to water in 13 monitoring wells located along the southern shoreline of the Inner Cove on December 9, 2016. These well locations and the groundwater contours for December 9, 2016 are shown on Figure 2 and include MW-235S, MW-236S, MW-237S, MW-238S/D, MW-231S/D, MW-244, MW-D, MW-241, MW-FS, GZA-3 and MW-109D.

Amec Foster Wheeler then sampled the one remaining groundwater monitoring well, MW-D (Figure 2), using the U.S. Environmental Protection Agency (USEPA) low-flow methodology. Sample collection included a duplicate groundwater sample from MW-D. Samples from this December 9, 2016 round were submitted under chain-of-custody control to an off-site laboratory for VOC analysis by USEPA Method 8260B. Field data records 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 December 2016 groundwater sampling event. VOC concentrations detected in Parcel C (MW-D) are measured against the RIDEM GB standards. The analytical laboratory report for the December 2016 groundwater sampling event is included in Appendix B.

As shown in Table 1, both 1,1-dichloroethene (DCE) and TCE exceeded the GB criteria in December 2016. 1,1-DCE was below the GB criteria through July 2016, but increased in September; it has again dropped in concentration so that it is now just above the GB criteria (0.009 vs 0.007 mg/L). The concentration of TCE within MW-D was at its highest concentration in September 2016 (2.81D/3.32D mg/L), but in December 2016 it decreased (2.19/2.20 vs 0.54 mg/L). The December 2016 concentrations of 1,1-DCE and TCE are both lower than those measured in MW-D in December 2015 that followed the October 2015 completion of the Parcel C construction (0.0114 mg/L and 3.06D mg/L, respectively).

Groundwater Monitoring Approach

Based on the extensive groundwater data collected, VOC concentrations within the northwestern area of Parcel C have been reduced. Only MW-D exceeds the RIDEM GB criteria for TCE and 1,1-DCE. As shown in Table 1, continued biodegradation of VOCs via natural attenuation is occurring in the groundwater. Planned reuse of the Parcel C/C-1 area by the City of Providence School Department is a soccer field. No buildings are planned in the area of MW-D and it is currently located within the woods on the downhill side of a detention basin. The Draft Environmental Land Use Restrictions (ELUR) within the February 2016 Remedial Action

Textron, Inc.
Former Gorham Manufacturing Facility, Providence, RI
Remedial Action Work Plan – Phase II Area- Mashapaug Pond and Cove, Phase III Area – Northeast Upland and Parcel C
Groundwater Sampling
January 30, 2017
Project No.: 3652150040.03

Completion Report includes the provision restricting 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 ELUR will be signed and filed by the City of Providence within the Providence Land Use Records, pending RIDEM approval of the ELUR.

Textron will continue to monitor the groundwater quality at MW-D on a quarterly basis with the next scheduled sampling event in March 2017, pending compliance with RIDEM's GB Groundwater Objectives and no increasing trends of VOCs. A report will be prepared and submitted to the RIDEM in March 2017 to update the status of this monitoring well.

Please contact the Greg Simpson (401-457-2635) or David Heislein (978-392-5327) if we can provide additional information or answer any questions concerning these groundwater monitoring data and planned sampling of MW-D in December 2016 and March 2017.

Sincerely,

Amec Foster Wheeler Environment & Infrastructure, Inc.



Lauren Gosnell
Project Scientist



David E. Heislein
Senior Project Manager

Enclosures: Table 1 – Summary of Parcel C/C-1 Groundwater Results 1989 – 2016
Figure 1 – Site Location Map
Figure 2 – Parcel C/C-1 Groundwater Contours December 2016
Appendix A – Field Data Record December 2016 Sampling Event
Appendix B – Laboratory Reports – December 2016 Sampling Event

cc: Robert Azar, Deputy Director - Providence Planning & Development
G. Simpson, Textron, Inc. (Electronic)
Knight Memorial Library Repository
Amec Foster Wheeler Project File

P:\BOS\Textron\3652150040 - Textron Gorham GW Sampling\8.0 Proj Deliverables\8.1 Reports\Final Dec 2016 GW Sampling Ltr 013017.docx

TABLE 1

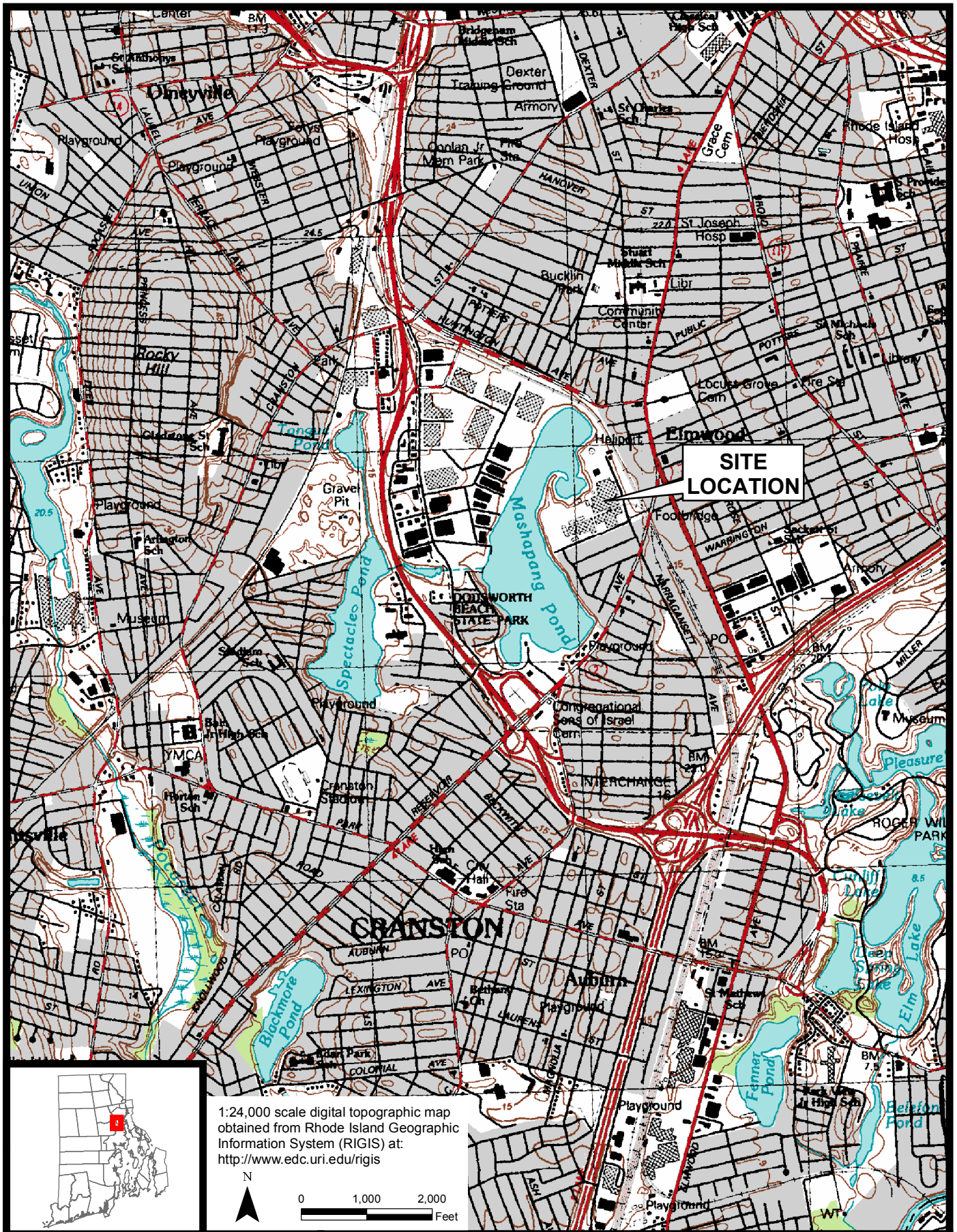
Summary of Parcel C/C-1 Groundwater Results 1989 – 2016

Table 1
Groundwater Results 1989 - 2016
Former Goreham Manufacturing Site
Providence, RI

Location:		MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	MW-D/B-4	
Sample ID:		MW-D	GMMWXXDXXX01XX	MW-D	MW-D	GWMWD	MW-D	DUP-01	MW-D	MW-D	DUP-1	MW-D	Dup-01	MW-D	Dup-01	MW-D	Dup-01	MW-D	Dup-01	MW-D	Dup-01
Sample Date:		4/13/1989	9/21/1994	10/15/1997	12/9/1998	2/19/2010	7/15/2015	7/15/2015	12/17/2015	2/10/2016	2/10/2016	4/28/2016	4/28/2016	7/6/2016	7/6/2016	9/26/2016	9/26/2016	12/9/2016	12/9/2016		
Parameter Name	Units	GB	GW-3																		
Trichloroethene	MG/L	0.54	5	0.28	0.298	0.37	0.272	0.761 D	0.826 D	0.851 D	3.06 D	1.73 D	1.71 D	0.499 D	0.514 D	1.36 D	1.68 D	2.81 D	3.32 D	2.19 D	2.2 D
Trichlorofluoromethane	MG/L	NS	NS				0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trihalomethanes, Total	MG/L	NS	NS				0.0036 U	0.001 U	0.001 U												
Vinyl acetate	MG/L	NS	NS				0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Vinyl chloride	MG/L	NS	50	0.02 U	0.02 U	0.01 U	0.003	0.003	0.0033	0.003	0.0034	0.0024	0.001 U	0.001	0.001	0.0045	0.0045	0.0062	0.006	0.0043	0.0041
Xylenes, Total	MG/L	NS	5	0.01 U	0.02 U	0.005 U	0.001 U	0.003 U	0.002 U	0.002 U								0.002 U	0.002 U	0.002 U	0.002 U
Aluminum	MG/L	NS	NS		0.3																
Antimony	MG/L	NS	8		0.1 U																
Arsenic	MG/L	NS	0.9		0.01 U																
Barium	MG/L	NS	50		0.2 U																
Beryllium	MG/L	NS	0.2		0.01 U																
Cadmium	MG/L	NS	0.004		0.005 U																
Calcium	MG/L	NS	NS		49.3																
Chromium	MG/L	NS	0.3		0.05 U																
Cobalt	MG/L	NS	NS		0.05 U																
Copper	MG/L	NS	NS		0.02 U																
Iron	MG/L	NS	NS		0.1 U																
Lead	MG/L	NS	0.01		0.016		0.005 U														
Magnesium	MG/L	NS	NS		15.7																
Manganese	MG/L	NS	NS		0.47																
Mercury	MG/L	NS	0.02		0.0005 U																
Nickel	MG/L	NS	0.2		0.04 U																
Potassium	MG/L	NS	NS		1.8																
Selenium	MG/L	NS	0.1		0.01 U																
Silver	MG/L	NS	0.007		0.01 U																
Sodium	MG/L	NS	NS		25.1																
Thallium	MG/L	NS	3		0.01 U																
Vanadium	MG/L	NS	4		0.05 U																
Zinc	MG/L	NS	0.9		0.05																
Total Cyanide	MG/L	NS	0.03		0.01 U																

Notes:
mg/L - milligrams per liter
NS - No Standard Established
U - Not detected
J - Estimated Value
D - Dilution
Ambient Water Quality Criteria (AWQC) does not apply to the above
volatile organic compounds.
Yellow highlighted cells exceed the applicable GB Criteria

FIGURES



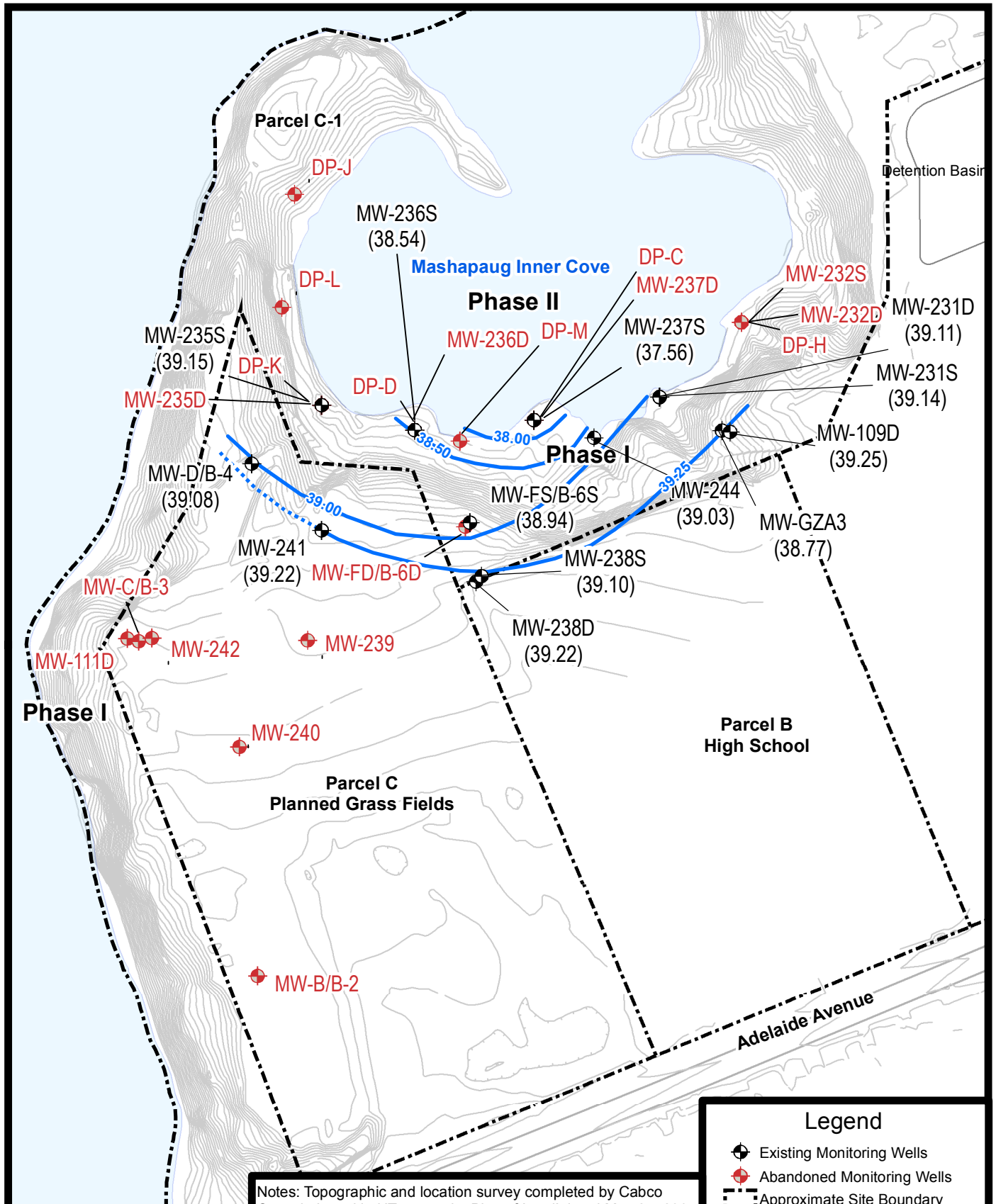
Former Gorham Manufacturing Site
 333 Adelaide Avenue
 Providence, RI



Site Location Map

Project 3652-15-0040

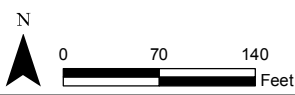
Figure 1



Notes: Topographic and location survey completed by Cabco Consult, Inc. titled 'Topographic Plan of Land' dated May 24, 2007. Parcel B topography and field survey completed by Edward Rowse Architects Titled "Providence High School, Gorham Mills, Providence Rhode Island, Site Plan" dated 2007.

Legend

- Existing Monitoring Wells
- Abandoned Monitoring Wells
- Approximate Site Boundary
- Elevation
- Groundwater Contour
- Inferred Groundwater Contour



Former Gorham Manufacturing Site
333 Adelaide Avenue
Providence, RI



Parcel C/C-1 Groundwater Contours
December 9, 2016
Project 3652-15-0040 Figure 2

APPENDIX A

Field Data Record December 2016 Sampling Event

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

PROJECT: Toxston Gashorn WELL ID: MW-10
 SAMPLE ID: MW-10 SITE TYPE: Industrial DATE: 12-9-16
 TIME START: 9:05 END: 9:55 JOB NUMBER: 3652150040 BOTTLE TIME: 9:15

WATER LEVEL / PUMP SETTINGS

QC SAMPLE COLLECTED: Dp-1, M3, M80

MEASUREMENT POINT: TOP OF WELL RISER TOP OF PROTECTIVE CASING OTHER _____

PROTECTIVE CASING STICKUP (FROM GROUND): _____ FT.

PROTECTIVE CASING / WELL DIFFERENCE: _____ FT.

INITIAL DEPTH TO WATER: 21.15 FT.

WELL DEPTH (TOR): 32 FT.

PID AMBIENT AIR: _____ PPMV

WELL DIAMETER: 2 IN.

FINAL DEPTH TO WATER: 21.15 FT.

SCREEN LENGTH: 10 FT.

PID WELL MOUTH: _____ PPMV

WELL INTEGRITY: CAP YES ✓ NO _____ N/A _____

DRAWDOWN VOLUME (initial - final x 0.16 [2-inch] or x 0.65 [4-inch]): 0 GAL.

RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: 60.01

PRESSURE TO PUMP: _____ PSI

CASING LOCKED YES ✓ NO _____ N/A _____

COLLAR YES ✓ NO _____ N/A _____

TOTAL VOL. PURGED: 1.4 GAL.

REFILL TIMER SETTING: _____ SEC.

DISCHARGE TIMER SETTING: _____ SEC.

(purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/ml)

PURGE DATA

TIME (5 min.)	DEPTH TO WATER (ft.) (0.3 ft.)	PURGE RATE (ml/min) (100-400)	TEMP. (deg. C) (3%)	SPEC. COND. (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS. O2 (mg/L) (10%) (>0.5)	TURBIDITY (NTU) (10%) (>5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS
9:05	21.15	130 - start purge							30	
9:15	21.15	130	10.61	634	6.14	2.83	4.0	190.4		
9:25	21.15	130	11.04	603	6.13	2.81	1.90	172		
9:33	21.15	130	11.22	597	6.12	1.57	1.41	161		
9:38	21.15	130	11.24	596	6.11	1.50	1.47	158		
9:43	21.15	130	11.28	554	6.10	1.48	1.0	152		
9:55	collect sample									

EQUIPMENT DOCUMENTATION

TYPE OF PUMP QED BLADDER SIMCO BLADDER GEOPUMP

TYPE OF TUBING TEFLON OR TEFLON LINED HIGH DENSITY POLYETHYLENE LDPE

TYPE OF PUMP MATERIAL POLYVINYL CHLORIDE STAINLESS STEEL SILICON (Dedicated)

TYPE OF BLADDER MATERIAL TEFLON OTHER _____

ANALYTICAL PARAMETERS

To Be Collected


	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
<input checked="" type="checkbox"/> VOCs	8260B	HCL / 4 DEG. C	3 X 40 mL VOA Vial	<input checked="" type="checkbox"/> VOCs
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES C NO _____

NUMBER OF GALLONS GENERATED 1.5

NOTES:

amec foster wheeler 

SIGNATURE: 

Prepared by: _____
Checked by: _____

APPENDIX B

Laboratory Reports – December 2016 Sampling Event



CERTIFICATE OF ANALYSIS

Denise King
AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

RE: Textron Gorham - Groundwater (3652150040)
ESS Laboratory Work Order Number: 1612265

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 4:00 pm, Dec 16, 2016

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state tandards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1612265

SAMPLE RECEIPT

The following samples were received on December 09, 2016 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
1612265-01	MW-D	Ground Water	8260B
1612265-02	DUP-01	Ground Water	8260B



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1612265

PROJECT NARRATIVE

8260B Volatile Organic Compounds

- CL61324-BS1 [Blank Spike recovery is above upper control limit \(B+\).](#)
Hexachloroethane (142% @ 70-130%)
- CL61324-BSD1 [Blank Spike recovery is above upper control limit \(B+\).](#)
Hexachloroethane (136% @ 70-130%)
- CL61324-MS1 [Due to high target values, matrix spike analyte\(s\) is masked \(MT\).](#)
cis-1,2-Dichloroethene (-83% @ 70-130%), Trichloroethene (-7830% @ 70-130%)
- CL61324-MS1 [Reported above the quantitation limit; Estimated value \(E\).](#)
cis-1,2-Dichloroethene , Trichloroethene
- CL61324-MSD1 [Due to high target values, matrix spike analyte\(s\) is masked \(MT\).](#)
cis-1,2-Dichloroethene (-52% @ 70-130%), Trichloroethene (-7020% @ 70-130%)
- CL61324-MSD1 [Reported above the quantitation limit; Estimated value \(E\).](#)
cis-1,2-Dichloroethene , Trichloroethene
- CZL0219-CCV1 [Continuing Calibration %Diff/Drift is below control limit \(CD-\).](#)
Diethyl Ether (36% @ 30%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

- [Definitions of Quality Control Parameters](#)
- [Semivolatile Organics Internal Standard Information](#)
- [Semivolatile Organics Surrogate Information](#)
- [Volatile Organics Internal Standard Information](#)
- [Volatile Organics Surrogate Information](#)
- [EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1612265

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015C - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater
Client Sample ID: MW-D
Date Sampled: 12/09/16 09:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1612265
ESS Laboratory Sample ID: 1612265-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,1-Dichloroethane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,1-Dichloroethene	0.0093 (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/13/16 14:28	CZL0178	CL61324
1-Chlorohexane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
2-Butanone	ND (0.0100)		8260B		1	12/13/16 14:28	CZL0178	CL61324
2-Chlorotoluene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
2-Hexanone	ND (0.0100)		8260B		1	12/13/16 14:28	CZL0178	CL61324
4-Chlorotoluene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Acetone	ND (0.0100)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Benzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Bromobenzene	ND (0.0020)		8260B		1	12/13/16 14:28	CZL0178	CL61324



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater
Client Sample ID: MW-D
Date Sampled: 12/09/16 09:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1612265
ESS Laboratory Sample ID: 1612265-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Bromodichloromethane	ND (0.0006)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Bromoform	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Bromomethane	ND (0.0020)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Carbon Disulfide	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Chlorobenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Chloroethane	ND (0.0020)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Chloroform	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Chloromethane	ND (0.0020)		8260B		1	12/13/16 14:28	CZL0178	CL61324
cis-1,2-Dichloroethene	0.0990 (0.0500)		8260B		50	12/15/16 13:33	CZL0178	CL61324
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Dibromochloromethane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Dibromomethane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Diethyl Ether	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Di-isopropyl ether	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Ethylbenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Hexachloroethane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Isopropylbenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Methylene Chloride	ND (0.0020)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Naphthalene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
n-Butylbenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
n-Propylbenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
sec-Butylbenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Styrene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
tert-Butylbenzene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Tetrachloroethene	0.0051 (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater
Client Sample ID: MW-D
Date Sampled: 12/09/16 09:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1612265
ESS Laboratory Sample ID: 1612265-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Toluene	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
trans-1,2-Dichloroethene	0.0046 (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Trichloroethene	2.19 (0.0500)		8260B		50	12/15/16 13:33	CZL0178	CL61324
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Vinyl Acetate	ND (0.0050)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Vinyl Chloride	0.0043 (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Xylene O	ND (0.0010)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Xylene P,M	ND (0.0020)		8260B		1	12/13/16 14:28	CZL0178	CL61324
Xylenes (Total)	ND (0.0020)		8260B		1	12/13/16 14:28		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>93 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>100 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater
Client Sample ID: DUP-01
Date Sampled: 12/09/16 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1612265
ESS Laboratory Sample ID: 1612265-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,1-Dichloroethane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,1-Dichloroethene	0.0089 (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/13/16 14:02	CZL0178	CL61324
1-Chlorohexane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
2-Butanone	ND (0.0100)		8260B		1	12/13/16 14:02	CZL0178	CL61324
2-Chlorotoluene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
2-Hexanone	ND (0.0100)		8260B		1	12/13/16 14:02	CZL0178	CL61324
4-Chlorotoluene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Acetone	ND (0.0100)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Benzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Bromobenzene	ND (0.0020)		8260B		1	12/13/16 14:02	CZL0178	CL61324



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater
Client Sample ID: DUP-01
Date Sampled: 12/09/16 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1612265
ESS Laboratory Sample ID: 1612265-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Bromodichloromethane	ND (0.0006)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Bromoform	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Bromomethane	ND (0.0020)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Carbon Disulfide	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Chlorobenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Chloroethane	ND (0.0020)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Chloroform	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Chloromethane	ND (0.0020)		8260B		1	12/13/16 14:02	CZL0178	CL61324
cis-1,2-Dichloroethene	0.0965 (0.0500)		8260B		50	12/15/16 14:24	CZL0178	CL61324
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Dibromochloromethane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Dibromomethane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Diethyl Ether	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Di-isopropyl ether	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Ethylbenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Hexachloroethane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Isopropylbenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Methylene Chloride	ND (0.0020)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Naphthalene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
n-Butylbenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
n-Propylbenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
sec-Butylbenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Styrene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
tert-Butylbenzene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Tetrachloroethene	0.0047 (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater
Client Sample ID: DUP-01
Date Sampled: 12/09/16 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1612265
ESS Laboratory Sample ID: 1612265-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Toluene	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
trans-1,2-Dichloroethene	0.0043 (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Trichloroethene	2.20 (0.0500)		8260B		50	12/15/16 14:24	CZL0178	CL61324
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Vinyl Acetate	ND (0.0050)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Vinyl Chloride	0.0041 (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Xylene O	ND (0.0010)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Xylene P,M	ND (0.0020)		8260B		1	12/13/16 14:02	CZL0178	CL61324
Xylenes (Total)	ND (0.0020)		8260B		1	12/13/16 14:02		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>93 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>99 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1612265

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL61324 - 5030B

Blank

1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1612265

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL61324 - 5030B

Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Xylenes (Total)	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0246		mg/L	0.02500		98	70-130			
Surrogate: 4-Bromofluorobenzene	0.0211		mg/L	0.02500		84	70-130			
Surrogate: Dibromofluoromethane	0.0259		mg/L	0.02500		104	70-130			
Surrogate: Toluene-d8	0.0249		mg/L	0.02500		99	70-130			

LCS

1,1,1,2-Tetrachloroethane	10.4		ug/L	10.00		104	70-130			
1,1,1-Trichloroethane	10.9		ug/L	10.00		109	70-130			
1,1,2,2-Tetrachloroethane	11.4		ug/L	10.00		114	70-130			
1,1,2-Trichloroethane	10.8		ug/L	10.00		108	70-130			
1,1-Dichloroethane	10.4		ug/L	10.00		104	70-130			
1,1-Dichloroethene	12.6		ug/L	10.00		126	70-130			
1,1-Dichloropropene	10.5		ug/L	10.00		105	70-130			
1,2,3-Trichlorobenzene	11.9		ug/L	10.00		119	70-130			
1,2,3-Trichloropropane	10.3		ug/L	10.00		103	70-130			



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1612265

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL61324 - 5030B

1,2,4-Trichlorobenzene	10.9		ug/L	10.00		109	70-130			
1,2,4-Trimethylbenzene	9.40		ug/L	10.00		94	70-130			
1,2-Dibromo-3-Chloropropane	12.6		ug/L	10.00		126	70-130			
1,2-Dibromoethane	10.2		ug/L	10.00		102	70-130			
1,2-Dichlorobenzene	10.0		ug/L	10.00		100	70-130			
1,2-Dichloroethane	9.98		ug/L	10.00		100	70-130			
1,2-Dichloropropane	10.7		ug/L	10.00		107	70-130			
1,3,5-Trimethylbenzene	9.46		ug/L	10.00		95	70-130			
1,3-Dichlorobenzene	9.63		ug/L	10.00		96	70-130			
1,3-Dichloropropane	10.5		ug/L	10.00		105	70-130			
1,4-Dichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,4-Dioxane - Screen	194		ug/L	200.0		97	0-332			
1-Chlorohexane	9.32		ug/L	10.00		93	70-130			
2,2-Dichloropropane	9.94		ug/L	10.00		99	70-130			
2-Butanone	55.3		ug/L	50.00		111	70-130			
2-Chlorotoluene	9.13		ug/L	10.00		91	70-130			
2-Hexanone	51.5		ug/L	50.00		103	70-130			
4-Chlorotoluene	9.25		ug/L	10.00		92	70-130			
4-Isopropyltoluene	10.1		ug/L	10.00		101	70-130			
4-Methyl-2-Pentanone	51.1		ug/L	50.00		102	70-130			
Acetone	56.6		ug/L	50.00		113	70-130			
Benzene	10.6		ug/L	10.00		106	70-130			
Bromobenzene	10.4		ug/L	10.00		104	70-130			
Bromochloromethane	10.9		ug/L	10.00		109	70-130			
Bromodichloromethane	10.8		ug/L	10.00		108	70-130			
Bromoform	11.6		ug/L	10.00		116	70-130			
Bromomethane	12.8		ug/L	10.00		128	70-130			
Carbon Disulfide	11.7		ug/L	10.00		117	70-130			
Carbon Tetrachloride	11.5		ug/L	10.00		115	70-130			
Chlorobenzene	9.80		ug/L	10.00		98	70-130			
Chloroethane	12.9		ug/L	10.00		129	70-130			
Chloroform	10.7		ug/L	10.00		107	70-130			
Chloromethane	12.5		ug/L	10.00		125	70-130			
cis-1,2-Dichloroethene	10.4		ug/L	10.00		104	70-130			
cis-1,3-Dichloropropene	9.68		ug/L	10.00		97	70-130			
Dibromochloromethane	10.9		ug/L	10.00		109	70-130			
Dibromomethane	10.4		ug/L	10.00		104	70-130			
Dichlorodifluoromethane	10.4		ug/L	10.00		104	70-130			
Diethyl Ether	11.0		ug/L	10.00		110	70-130			
Di-isopropyl ether	9.76		ug/L	10.00		98	70-130			
Ethyl tertiary-butyl ether	8.94		ug/L	10.00		89	70-130			
Ethylbenzene	9.54		ug/L	10.00		95	70-130			
Hexachlorobutadiene	11.9		ug/L	10.00		119	70-130			
Hexachloroethane	14.2		ug/L	10.00		142	70-130			B+
Isopropylbenzene	7.69		ug/L	10.00		77	70-130			



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1612265

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL61324 - 5030B

Methyl tert-Butyl Ether	9.29		ug/L	10.00		93	70-130			
Methylene Chloride	12.6		ug/L	10.00		126	70-130			
Naphthalene	10.3		ug/L	10.00		103	70-130			
n-Butylbenzene	10.2		ug/L	10.00		102	70-130			
n-Propylbenzene	9.25		ug/L	10.00		92	70-130			
sec-Butylbenzene	10.1		ug/L	10.00		101	70-130			
Styrene	8.85		ug/L	10.00		88	70-130			
tert-Butylbenzene	9.35		ug/L	10.00		94	70-130			
Tertiary-amyl methyl ether	8.76		ug/L	10.00		88	70-130			
Tetrachloroethene	9.99		ug/L	10.00		100	70-130			
Tetrahydrofuran	10.3		ug/L	10.00		103	70-130			
Toluene	10.5		ug/L	10.00		105	70-130			
trans-1,2-Dichloroethene	10.6		ug/L	10.00		106	70-130			
trans-1,3-Dichloropropene	9.21		ug/L	10.00		92	70-130			
Trichloroethene	10.2		ug/L	10.00		102	70-130			
Trichlorofluoromethane	9.93		ug/L	10.00		99	70-130			
Vinyl Acetate	10.6		ug/L	10.00		106	70-130			
Vinyl Chloride	12.4		ug/L	10.00		124	70-130			
Xylene O	9.70		ug/L	10.00		97	70-130			
Xylene P,M	19.0		ug/L	20.00		95	70-130			
Xylenes (Total)	28.7		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0254		mg/L	0.02500		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0237		mg/L	0.02500		95	70-130			
Surrogate: Dibromofluoromethane	0.0272		mg/L	0.02500		109	70-130			
Surrogate: Toluene-d8	0.0260		mg/L	0.02500		104	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	9.94		ug/L	10.00		99	70-130	4	25	
1,1,1-Trichloroethane	10.4		ug/L	10.00		104	70-130	4	25	
1,1,2,2-Tetrachloroethane	10.9		ug/L	10.00		109	70-130	5	25	
1,1,2-Trichloroethane	10.5		ug/L	10.00		105	70-130	3	25	
1,1-Dichloroethane	10.1		ug/L	10.00		101	70-130	3	25	
1,1-Dichloroethene	11.9		ug/L	10.00		119	70-130	6	25	
1,1-Dichloropropene	10.6		ug/L	10.00		106	70-130	0.7	25	
1,2,3-Trichlorobenzene	10.4		ug/L	10.00		104	70-130	13	25	
1,2,3-Trichloropropane	9.90		ug/L	10.00		99	70-130	4	25	
1,2,4-Trichlorobenzene	9.25		ug/L	10.00		92	70-130	17	25	
1,2,4-Trimethylbenzene	9.13		ug/L	10.00		91	70-130	3	25	
1,2-Dibromo-3-Chloropropane	11.6		ug/L	10.00		116	70-130	8	25	
1,2-Dibromoethane	9.50		ug/L	10.00		95	70-130	7	25	
1,2-Dichlorobenzene	9.39		ug/L	10.00		94	70-130	6	25	
1,2-Dichloroethane	9.74		ug/L	10.00		97	70-130	2	25	
1,2-Dichloropropane	10.6		ug/L	10.00		106	70-130	0.5	25	
1,3,5-Trimethylbenzene	8.87		ug/L	10.00		89	70-130	6	25	
1,3-Dichlorobenzene	9.45		ug/L	10.00		94	70-130	2	25	
1,3-Dichloropropane	10.1		ug/L	10.00		101	70-130	4	25	



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1612265

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL61324 - 5030B

1,4-Dichlorobenzene	10.2		ug/L	10.00		102	70-130	0.5	25	
1,4-Dioxane - Screen	183		ug/L	200.0		92	0-332	6	200	
1-Chlorohexane	9.07		ug/L	10.00		91	70-130	3	25	
2,2-Dichloropropane	9.52		ug/L	10.00		95	70-130	4	25	
2-Butanone	50.8		ug/L	50.00		102	70-130	9	25	
2-Chlorotoluene	9.05		ug/L	10.00		90	70-130	0.9	25	
2-Hexanone	49.3		ug/L	50.00		99	70-130	4	25	
4-Chlorotoluene	8.91		ug/L	10.00		89	70-130	4	25	
4-Isopropyltoluene	9.60		ug/L	10.00		96	70-130	5	25	
4-Methyl-2-Pentanone	48.4		ug/L	50.00		97	70-130	6	25	
Acetone	54.4		ug/L	50.00		109	70-130	4	25	
Benzene	10.5		ug/L	10.00		105	70-130	1	25	
Bromobenzene	10.2		ug/L	10.00		102	70-130	2	25	
Bromochloromethane	10.6		ug/L	10.00		106	70-130	2	25	
Bromodichloromethane	10.2		ug/L	10.00		102	70-130	6	25	
Bromoform	10.8		ug/L	10.00		108	70-130	8	25	
Bromomethane	12.0		ug/L	10.00		120	70-130	7	25	
Carbon Disulfide	11.2		ug/L	10.00		112	70-130	5	25	
Carbon Tetrachloride	10.8		ug/L	10.00		108	70-130	7	25	
Chlorobenzene	9.54		ug/L	10.00		95	70-130	3	25	
Chloroethane	11.6		ug/L	10.00		116	70-130	11	25	
Chloroform	10.1		ug/L	10.00		101	70-130	5	25	
Chloromethane	11.8		ug/L	10.00		118	70-130	5	25	
cis-1,2-Dichloroethene	9.83		ug/L	10.00		98	70-130	6	25	
cis-1,3-Dichloropropene	9.46		ug/L	10.00		95	70-130	2	25	
Dibromochloromethane	10.6		ug/L	10.00		106	70-130	3	25	
Dibromomethane	9.96		ug/L	10.00		100	70-130	4	25	
Dichlorodifluoromethane	10.3		ug/L	10.00		103	70-130	2	25	
Diethyl Ether	10.3		ug/L	10.00		103	70-130	6	25	
Di-isopropyl ether	9.35		ug/L	10.00		94	70-130	4	25	
Ethyl tertiary-butyl ether	8.79		ug/L	10.00		88	70-130	2	25	
Ethylbenzene	9.18		ug/L	10.00		92	70-130	4	25	
Hexachlorobutadiene	11.1		ug/L	10.00		111	70-130	7	25	
Hexachloroethane	13.6		ug/L	10.00		136	70-130	5	25	B+
Isopropylbenzene	7.58		ug/L	10.00		76	70-130	1	25	
Methyl tert-Butyl Ether	9.13		ug/L	10.00		91	70-130	2	25	
Methylene Chloride	11.3		ug/L	10.00		113	70-130	11	25	
Naphthalene	9.07		ug/L	10.00		91	70-130	13	25	
n-Butylbenzene	9.25		ug/L	10.00		92	70-130	9	25	
n-Propylbenzene	9.20		ug/L	10.00		92	70-130	0.5	25	
sec-Butylbenzene	9.61		ug/L	10.00		96	70-130	5	25	
Styrene	8.51		ug/L	10.00		85	70-130	4	25	
tert-Butylbenzene	9.02		ug/L	10.00		90	70-130	4	25	
Tertiary-amyl methyl ether	8.53		ug/L	10.00		85	70-130	3	25	
Tetrachloroethene	9.86		ug/L	10.00		99	70-130	1	25	



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1612265

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL61324 - 5030B

Tetrahydrofuran	9.86		ug/L	10.00		99	70-130	4	25	
Toluene	10.2		ug/L	10.00		102	70-130	3	25	
trans-1,2-Dichloroethene	10.4		ug/L	10.00		104	70-130	2	25	
trans-1,3-Dichloropropene	8.81		ug/L	10.00		88	70-130	4	25	
Trichloroethene	9.98		ug/L	10.00		100	70-130	2	25	
Trichlorofluoromethane	10.1		ug/L	10.00		101	70-130	1	25	
Vinyl Acetate	9.88		ug/L	10.00		99	70-130	7	25	
Vinyl Chloride	12.4		ug/L	10.00		124	70-130	0.6	25	
Xylene O	9.81		ug/L	10.00		98	70-130	1	25	
Xylene P,M	18.7		ug/L	20.00		94	70-130	1	25	
Xylenes (Total)	28.5		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0248		mg/L	0.02500		99	70-130			
Surrogate: 4-Bromofluorobenzene	0.0232		mg/L	0.02500		93	70-130			
Surrogate: Dibromofluoromethane	0.0268		mg/L	0.02500		107	70-130			
Surrogate: Toluene-d8	0.0261		mg/L	0.02500		104	70-130			

Matrix Spike Source: 1612265-01

1,1,1,2-Tetrachloroethane	9.47		ug/L	10.00	0.00	95	70-130			
1,1,1-Trichloroethane	9.18		ug/L	10.00	0.00	92	70-130			
1,1,2,2-Tetrachloroethane	9.34		ug/L	10.00	-0.210	93	70-130			
1,1,2-Trichloroethane	9.34		ug/L	10.00	0.220	91	70-130			
1,1-Dichloroethane	8.75		ug/L	10.00	0.00	88	70-130			
1,1-Dichloroethene	17.5		ug/L	10.00	9.33	82	70-130			
1,1-Dichloropropene	9.29		ug/L	10.00	0.00	93	70-130			
1,2,3-Trichlorobenzene	10.1		ug/L	10.00	0.00	101	70-130			
1,2,3-Trichloropropane	9.70		ug/L	10.00	0.00	97	70-130			
1,2,4-Trichlorobenzene	9.33		ug/L	10.00	0.00	93	70-130			
1,2,4-Trimethylbenzene	9.37		ug/L	10.00	0.00	94	70-130			
1,2-Dibromo-3-Chloropropane	10.3		ug/L	10.00	-0.360	103	70-130			
1,2-Dibromoethane	9.53		ug/L	10.00	0.00	95	70-130			
1,2-Dichlorobenzene	9.40		ug/L	10.00	0.00	94	70-130			
1,2-Dichloroethane	8.53		ug/L	10.00	0.440	81	70-130			
1,2-Dichloropropane	9.76		ug/L	10.00	0.00	98	70-130			
1,3,5-Trimethylbenzene	9.54		ug/L	10.00	0.00	95	70-130			
1,3-Dichlorobenzene	8.97		ug/L	10.00	0.00	90	70-130			
1,3-Dichloropropane	9.33		ug/L	10.00	0.00	93	70-130			
1,4-Dichlorobenzene	9.70		ug/L	10.00	0.00	97	70-130			
1,4-Dioxane - Screen	110		ug/L	200.0	0.00	55	0-332			
1-Chlorohexane	10.2		ug/L	10.00	0.00	102	70-130			
2,2-Dichloropropane	8.96		ug/L	10.00	0.00	90	70-130			
2-Butanone	44.6		ug/L	50.00	0.00	89	70-130			
2-Chlorotoluene	9.15		ug/L	10.00	0.00	92	70-130			
2-Hexanone	49.1		ug/L	50.00	0.00	98	70-130			
4-Chlorotoluene	8.92		ug/L	10.00	0.00	89	70-130			
4-Isopropyltoluene	9.39		ug/L	10.00	0.00	94	70-130			
4-Methyl-2-Pentanone	44.8		ug/L	50.00	0.00	90	70-130			



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1612265

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL61324 - 5030B

Acetone	42.9		ug/L	50.00	0.940	84	70-130			
Benzene	9.30		ug/L	10.00	0.230	91	70-130			
Bromobenzene	9.58		ug/L	10.00	0.00	96	70-130			
Bromochloromethane	9.37		ug/L	10.00	0.00	94	70-130			
Bromodichloromethane	8.33		ug/L	10.00	0.00	83	70-130			
Bromoform	10.3		ug/L	10.00	0.00	103	70-130			
Bromomethane	9.81		ug/L	10.00	0.00	98	70-130			
Carbon Disulfide	9.94		ug/L	10.00	0.00	99	70-130			
Carbon Tetrachloride	9.78		ug/L	10.00	0.00	98	70-130			
Chlorobenzene	9.09		ug/L	10.00	0.00	91	70-130			
Chloroethane	9.28		ug/L	10.00	0.00	93	70-130			
Chloroform	9.09		ug/L	10.00	0.290	88	70-130			
Chloromethane	9.82		ug/L	10.00	0.00	98	70-130			
cis-1,2-Dichloroethene	90.7		ug/L	10.00	99.0	NR	70-130			E, MT
cis-1,3-Dichloropropene	9.22		ug/L	10.00	0.00	92	70-130			
Dibromochloromethane	9.80		ug/L	10.00	0.00	98	70-130			
Dibromomethane	8.69		ug/L	10.00	0.00	87	70-130			
Dichlorodifluoromethane	8.45		ug/L	10.00	0.00	84	70-130			
Diethyl Ether	9.77		ug/L	10.00	0.00	98	70-130			
Di-isopropyl ether	9.07		ug/L	10.00	0.00	91	70-130			
Ethyl tertiary-butyl ether	8.53		ug/L	10.00	0.00	85	70-130			
Ethylbenzene	9.92		ug/L	10.00	0.00	99	70-130			
Hexachlorobutadiene	9.44		ug/L	10.00	0.00	94	70-130			
Hexachloroethane	12.9		ug/L	10.00	0.00	129	70-130			
Isopropylbenzene	8.19		ug/L	10.00	0.00	82	70-130			
Methyl tert-Butyl Ether	8.92		ug/L	10.00	0.00	89	70-130			
Methylene Chloride	9.76		ug/L	10.00	0.00	98	70-130			
Naphthalene	8.10		ug/L	10.00	0.00	81	70-130			
n-Butylbenzene	8.97		ug/L	10.00	0.00	90	70-130			
n-Propylbenzene	9.50		ug/L	10.00	0.00	95	70-130			
sec-Butylbenzene	9.67		ug/L	10.00	0.00	97	70-130			
Styrene	9.49		ug/L	10.00	0.00	95	70-130			
tert-Butylbenzene	9.74		ug/L	10.00	0.00	97	70-130			
Tertiary-amyl methyl ether	8.53		ug/L	10.00	0.00	85	70-130			
Tetrachloroethene	13.4		ug/L	10.00	5.07	84	70-130			
Tetrahydrofuran	9.23		ug/L	10.00	0.00	92	70-130			
Toluene	9.56		ug/L	10.00	0.00	96	70-130			
trans-1,2-Dichloroethene	13.0		ug/L	10.00	4.61	83	70-130			
trans-1,3-Dichloropropene	8.77		ug/L	10.00	0.00	88	70-130			
Trichloroethene	1410		ug/L	10.00	2190	NR	70-130			E, MT
Trichlorofluoromethane	8.26		ug/L	10.00	0.00	83	70-130			
Vinyl Acetate	9.70		ug/L	10.00	0.00	97	70-130			
Vinyl Chloride	12.6		ug/L	10.00	4.31	83	70-130			
Xylene O	9.62		ug/L	10.00	0.00	96	70-130			
Xylene P,M	19.5		ug/L	20.00	0.00	98	70-130			



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1612265

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL61324 - [CALC]

Xylenes (Total)	29.1		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0218		mg/L	0.02500		87	70-130			
Surrogate: 4-Bromofluorobenzene	0.0246		mg/L	0.02500		99	70-130			
Surrogate: Dibromofluoromethane	0.0240		mg/L	0.02500		96	70-130			
Surrogate: Toluene-d8	0.0267		mg/L	0.02500		107	70-130			

Matrix Spike Dup Source: 1612265-01

1,1,1,2-Tetrachloroethane	9.61		ug/L	10.00	0.00	96	70-130	1	30	
1,1,1-Trichloroethane	9.35		ug/L	10.00	0.00	94	70-130	2	30	
1,1,2,2-Tetrachloroethane	9.70		ug/L	10.00	-0.210	97	70-130	4	30	
1,1,2-Trichloroethane	9.74		ug/L	10.00	0.220	95	70-130	4	30	
1,1-Dichloroethane	9.30		ug/L	10.00	0.00	93	70-130	6	30	
1,1-Dichloroethene	17.3		ug/L	10.00	9.33	80	70-130	2	30	
1,1-Dichloropropene	9.79		ug/L	10.00	0.00	98	70-130	5	30	
1,2,3-Trichlorobenzene	10.6		ug/L	10.00	0.00	106	70-130	5	30	
1,2,3-Trichloropropane	10.1		ug/L	10.00	0.00	101	70-130	4	30	
1,2,4-Trichlorobenzene	10.1		ug/L	10.00	0.00	101	70-130	8	30	
1,2,4-Trimethylbenzene	9.70		ug/L	10.00	0.00	97	70-130	3	30	
1,2-Dibromo-3-Chloropropane	10.1		ug/L	10.00	-0.360	101	70-130	2	30	
1,2-Dibromoethane	9.57		ug/L	10.00	0.00	96	70-130	0.4	30	
1,2-Dichlorobenzene	9.52		ug/L	10.00	0.00	95	70-130	1	30	
1,2-Dichloroethane	9.00		ug/L	10.00	0.440	86	70-130	6	30	
1,2-Dichloropropane	10.5		ug/L	10.00	0.00	105	70-130	7	30	
1,3,5-Trimethylbenzene	9.77		ug/L	10.00	0.00	98	70-130	2	30	
1,3-Dichlorobenzene	9.04		ug/L	10.00	0.00	90	70-130	0.8	30	
1,3-Dichloropropane	9.53		ug/L	10.00	0.00	95	70-130	2	30	
1,4-Dichlorobenzene	9.65		ug/L	10.00	0.00	96	70-130	0.5	30	
1,4-Dioxane - Screen	172		ug/L	200.0	0.00	86	0-332	44	200	
1-Chlorohexane	9.68		ug/L	10.00	0.00	97	70-130	5	30	
2,2-Dichloropropane	9.06		ug/L	10.00	0.00	91	70-130	1	30	
2-Butanone	47.1		ug/L	50.00	0.00	94	70-130	5	30	
2-Chlorotoluene	9.30		ug/L	10.00	0.00	93	70-130	2	30	
2-Hexanone	51.6		ug/L	50.00	0.00	103	70-130	5	30	
4-Chlorotoluene	9.19		ug/L	10.00	0.00	92	70-130	3	30	
4-Isopropyltoluene	9.57		ug/L	10.00	0.00	96	70-130	2	30	
4-Methyl-2-Pentanone	48.6		ug/L	50.00	0.00	97	70-130	8	30	
Acetone	49.1		ug/L	50.00	0.940	96	70-130	14	30	
Benzene	9.66		ug/L	10.00	0.230	94	70-130	4	30	
Bromobenzene	9.88		ug/L	10.00	0.00	99	70-130	3	30	
Bromochloromethane	9.61		ug/L	10.00	0.00	96	70-130	3	30	
Bromodichloromethane	7.97		ug/L	10.00	0.00	80	70-130	4	30	
Bromoform	10.6		ug/L	10.00	0.00	106	70-130	2	30	
Bromomethane	11.0		ug/L	10.00	0.00	110	70-130	11	30	
Carbon Disulfide	9.93		ug/L	10.00	0.00	99	70-130	0.1	30	
Carbon Tetrachloride	9.83		ug/L	10.00	0.00	98	70-130	0.5	30	
Chlorobenzene	9.45		ug/L	10.00	0.00	94	70-130	4	30	



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1612265

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL61324 - 5030B

Chloroethane	10.3		ug/L	10.00	0.00	103	70-130	11	30	
Chloroform	9.33		ug/L	10.00	0.290	90	70-130	3	30	
Chloromethane	10.6		ug/L	10.00	0.00	106	70-130	8	30	
cis-1,2-Dichloroethene	93.8		ug/L	10.00	99.0	NR	70-130	NR	30	E, MT
cis-1,3-Dichloropropene	9.27		ug/L	10.00	0.00	93	70-130	0.5	30	
Dibromochloromethane	10.1		ug/L	10.00	0.00	101	70-130	3	30	
Dibromomethane	9.05		ug/L	10.00	0.00	90	70-130	4	30	
Dichlorodifluoromethane	8.98		ug/L	10.00	0.00	90	70-130	6	30	
Diethyl Ether	10.0		ug/L	10.00	0.00	100	70-130	3	30	
Di-isopropyl ether	9.27		ug/L	10.00	0.00	93	70-130	2	30	
Ethyl tertiary-butyl ether	8.74		ug/L	10.00	0.00	87	70-130	2	30	
Ethylbenzene	9.78		ug/L	10.00	0.00	98	70-130	1	30	
Hexachlorobutadiene	10.3		ug/L	10.00	0.00	103	70-130	9	30	
Hexachloroethane	12.7		ug/L	10.00	0.00	127	70-130	2	30	
Isopropylbenzene	7.80		ug/L	10.00	0.00	78	70-130	5	30	
Methyl tert-Butyl Ether	9.51		ug/L	10.00	0.00	95	70-130	6	30	
Methylene Chloride	10.2		ug/L	10.00	0.00	102	70-130	5	30	
Naphthalene	9.79		ug/L	10.00	0.00	98	70-130	19	30	
n-Butylbenzene	9.32		ug/L	10.00	0.00	93	70-130	4	30	
n-Propylbenzene	9.27		ug/L	10.00	0.00	93	70-130	2	30	
sec-Butylbenzene	9.89		ug/L	10.00	0.00	99	70-130	2	30	
Styrene	9.44		ug/L	10.00	0.00	94	70-130	0.5	30	
tert-Butylbenzene	9.45		ug/L	10.00	0.00	94	70-130	3	30	
Tertiary-amyl methyl ether	8.99		ug/L	10.00	0.00	90	70-130	5	30	
Tetrachloroethene	13.7		ug/L	10.00	5.07	86	70-130	3	30	
Tetrahydrofuran	9.60		ug/L	10.00	0.00	96	70-130	4	30	
Toluene	9.87		ug/L	10.00	0.00	99	70-130	3	30	
trans-1,2-Dichloroethene	13.5		ug/L	10.00	4.61	89	70-130	6	30	
trans-1,3-Dichloropropene	8.85		ug/L	10.00	0.00	88	70-130	0.9	30	
Trichloroethene	1490		ug/L	10.00	2190	NR	70-130	NR	30	E, MT
Trichlorofluoromethane	8.91		ug/L	10.00	0.00	89	70-130	8	30	
Vinyl Acetate	9.92		ug/L	10.00	0.00	99	70-130	2	30	
Vinyl Chloride	13.9		ug/L	10.00	4.31	96	70-130	14	30	
Xylene O	9.68		ug/L	10.00	0.00	97	70-130	0.6	30	
Xylene P,M	19.6		ug/L	20.00	0.00	98	70-130	0.4	30	
Xylenes (Total)	29.3		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0228		mg/L	0.02500		91	70-130			
Surrogate: 4-Bromofluorobenzene	0.0240		mg/L	0.02500		96	70-130			
Surrogate: Dibromofluoromethane	0.0244		mg/L	0.02500		98	70-130			
Surrogate: Toluene-d8	0.0256		mg/L	0.02500		102	70-130			



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler

Client Project ID: Textron Gorham - Groundwater

ESS Laboratory Work Order: 1612265

Notes and Definitions

- U Analyte included in the analysis, but not detected
- MT Due to high target values, matrix spike analyte(s) is masked (MT).
- E Reported above the quantitation limit; Estimated value (E).
- D Diluted.
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B+ Blank Spike recovery is above upper control limit (B+).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report



CERTIFICATE OF ANALYSIS

Client Name: AMEC Foster Wheeler
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ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AMEC Foster Wheeler - KPB/HDM

ESS Project ID: 1612265

Date Received: 12/9/2016

Project Due Date: 12/16/2016

Days for Project: 5 Day

Shipped/Delivered Via: Client

1. Air bill manifest present? No
Air No.: NA

6. Does COC match bottles? Yes

2. Were custody seals present? No

7. Is COC complete and correct? Yes

3. Is radiation count <100 CPM? Yes

8. Were samples received intact? Yes

4. Is a Cooler Present? Yes
Temp: 5.7 Iced with: Ice

9. Were labs informed about short holds & rushes? Yes / No / NA

5. Was COC signed and dated by client? Yes

10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
ESS Sample IDs: _____
Analysis: _____
TAT: _____

12. Were VOAs received? Yes / No
a. Air bubbles in aqueous VOAs? Yes / No
b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
b. Low Level VOA vials frozen: Date: _____ Time: _____ By: _____

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
a. Was there a need to contact the client? Yes / No
Who was contacted? _____ Date: _____ Time: _____ By: _____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	90982	Yes	No	Yes	VOA Vial - HCl	HCl	
01	90983	Yes	No	Yes	VOA Vial - HCl	HCl	
01	90984	Yes	No	Yes	VOA Vial - HCl	HCl	
01	90985	Yes	No	Yes	VOA Vial - HCl	HCl	
01	90986	Yes	No	Yes	VOA Vial - HCl	HCl	
01	90987	Yes	No	Yes	VOA Vial - HCl	HCl	
01	90988	Yes	No	Yes	VOA Vial - HCl	HCl	
01	90989	Yes	No	Yes	VOA Vial - HCl	HCl	
01	90990	Yes	No	Yes	VOA Vial - HCl	HCl	
02	90991	Yes	No	Yes	VOA Vial - HCl	HCl	
02	90992	Yes	No	Yes	VOA Vial - HCl	HCl	
02	90993	Yes	No	Yes	VOA Vial - HCl	HCl	

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: [Signature] Date & Time: 12/9/16 1250
Reviewed By: [Signature] Date & Time: 12/9/16 1307
Delivered By: [Signature] Date & Time: 12/9/16 1307

