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November 27, 2019

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: Air Monitoring Report  
September 2019 Semi-Annual Monitoring  
Retail Complex, Active Sub-Slab Depressurization System  
Former Gorham Manufacturing Facility  
333 Adelaide Avenue, Providence, Rhode Island  
Wood Project No. 3651190114**

Dear Mr. Martella:

This letter report presents the results of semi-annual compliance sampling and analysis conducted by Wood Environment and Infrastructure Solutions, Inc. (Wood) at the retail complex located at the Former Gorham Manufacturing Facility, 333 Adelaide Avenue, Providence, Rhode Island (Site). The reporting period is from April 2019 through September 2019 which includes one semi-annual compliance sampling event conducted on September 6, 2019.

The sampling, analysis and reporting are being conducted consistent with the Rhode Island Department of Environmental Management (RIDEM) Short Term Response Action Order of Approval, dated July 24, 2008, and the Addendum to the Order of Approval dated August 7, 2008 (collectively referred to as the Orders of Approval).

### **Background**

The active sub-slab depressurization (ASD) system, also called a vapor mitigation system, in the large retail space consists of four extraction wells connected to a 3 hp Rotron regenerative blower. The blower is located in an enclosure located at the north, or rear, of the large retail space (**Figure 1**).

The small retail spaces consist of the eastern, central, and western retail spaces (**Figure 1**). The mitigation systems in the central and western small retail spaces consist of one extraction well in each space connected to an individual radon-type fan, located at the north, or rear, of the small retail spaces. The eastern small retail space extraction well is located along the wall of the large retail space (EW-5) and is part of the ASD system described above.



## **Current Monitoring Results**

The following provides a discussion of results from sampling conducted on September 06, 2019. The sampling was performed consistent with the requirements of the Orders of Approval. This is the seventh semi-annual monitoring event since the change from quarterly monitoring after February 2016, based on the historical indoor air data and performance of the existing vapor mitigation system.

The laboratory analytical report (Con-test W. O. 1910227) for September 6, 2019 analyses is provided in **Appendix A**, and the laboratory's detection limits are provided in **Appendix B**.

Consistent with previous reports, analytical results of the most recent indoor air samples were compared to the Draft Connecticut Industrial/Commercial Indoor Target Air Concentrations (TAC), which were identified as action levels in the Orders of Approval.

## **Outdoor Reference Sample**

One outdoor reference air sample (AA-1) was located northwest of the property, upwind of the retail building. The results for the outdoor reference sample are provided in **Table 1** (two most recent sampling events). All historic outdoor reference sample results are provided in **Appendix C**.

## **Small Retail Spaces**

The September 2019 sampling event included an indoor air sample from each of the three small retail spaces (locations IA-5, IA-6, and IA-7) and one air sample collected from each of the three vapor extraction wells (EW-5, EW-6, and EW-7). The sub-slab vacuum monitoring (pressure differential measurements) was conducted at locations VMW-5, VMW-6, and VMW-7 on September 06, 2019 in conjunction with the semi-annual air sampling program. The indoor air and vapor extraction sampling and sub-slab vacuum monitoring locations are shown in **Figure 1**.

During the September sampling event, the eastern small retail space (indoor air sample location IA-5) was intermittently occupied as storage/staging area for a clothing consignment shop which occupied the center small retail space (sample location IA-6). The western small retail space (sample location IA-7) was intermittently occupied as a church hall.

Analytical results for the small retail spaces are summarized in **Table 2a** (indoor air, two most recent sampling events), and **Table 2b** (extraction wells, two most recent sampling events). For reference, all analytical results for the small retail spaces from initiation of sampling in 2009, including a baseline event prior to system start-up in February 2009, and all subsequent sampling events are presented in **Appendix D1** (indoor air, small retail) and **Appendix D2** (extraction wells, small retail). The vacuum monitoring results for the small retail spaces are presented in **Table 3**.

The following conclusions are based on Site observations and the September 2019 analytical results:

- J With the exception of three analytes, indoor air sample results for the September 06, 2019 sampling event in the small retail spaces (sample locations IA-5 through IA-7) were in compliance with TAC action levels. The exceptions include exceedances of the TAC by 1,2-Dichloroethane and 1,2-Dichloropropane at location IA-7 and Trichloroethene (TCE) at location IA-6.
- J 1,2-Dichloroethane exceeded its TAC (0.31 ug/m<sup>3</sup>) at 0.46 ug/m<sup>3</sup> and 1,2-Dichloropropane exceeded its TAC (0.42 ug/m<sup>3</sup>) at 0.80 ug/m<sup>3</sup>. Both compounds were not detected in the outdoor reference sample, nor in the associated sub-slab soil gas sample (EW-7) from the western small

retail space retail space. Both compounds are not one of the compounds for which the vapor mitigation system was installed. Thus, the concentration of 1,2-Dichloroethane and 1,2-dichloropropane above the action level does not constitute a violation of the action levels contained in the order.

- J TCE was detected at location IA-6 slightly above its TAC (1 ug/m<sup>3</sup>), at 1.5 ug/m<sup>3</sup>. TCE was detected in the sub-slab soil gas sample (EW-6) at a lower concentration (0.73 ug/m<sup>3</sup>) and was also present in the outside reference sample AA-1 at 0.34 ug/m<sup>3</sup>.
- J It is Wood's opinion that the low level TCE present in IA-6 was not likely introduced via sub-slab soil gas infiltration into the building for the following reasons:
  - o At Location IA-6, TCE had not exceeded its TAC since the first two sampling events at ASD start-up in 2009. The current exceedance is therefore considered anomalous.
  - o The mitigation systems in the small retail areas were functioning correctly during the sampling event.
  - o TCE was not detected above its TAC in any of the other indoor samples from the retail building (including both the large and small retail spaces).
  - o The TCE level in soil gas from extraction well EW-6 was lower than the level in the nearby indoor air sample from location IA-6.
  - o The area from which the IA-6 sample was collected supports an active clothing recycling/re-use business, while portions of the remaining retail business remain empty of used less frequently.

## Large Retail Space

The September 2019 sampling event included collection of samples from each of the indoor air sampling points in the large retail space (locations IA-1 through IA-4) and from the manifold where air from the four vapor extraction wells is combined (EW-Combined). In addition, one sample of exhaust from the carbon treatment system (Post Carbon) was collected. The sub-slab vacuum monitoring (pressure differential measurements) was conducted on September 6, 2019 at locations VMW-1 through VMW-4 in conjunction with the air sampling program. The sampling locations are shown in **Figure 1**.

Analytical results for the large retail spaces are summarized in **Table 4a** (indoor air, two most recent sampling events for IA-1 and IA-3 and two most recent events for IA-2 and IA-4), and **Table 4b** (extraction wells and post-carbon treatment, two most recent sampling events). For reference, all analytical results for the large retail spaces from initiation of sampling in 2009, including a baseline event prior to system start-up in February 2009, and all subsequent sampling events are presented in **Appendix E1** (indoor air, large space) and **Appendix E2** (extraction wells, large space). The vacuum monitoring results for the large retail spaces are presented in **Table 5**.

The following conclusions are based on Site observations and a review of analytical results:

- J With the exception of one analyte, the September 2019 indoor air sample results for the large retail space (sample locations IA-1 through IA-4) are in compliance with the TAC action levels. The one exception is 1,2-Dichloropropane at location IA-3, where 1,2-Dichloropropane was detected at 1.3 ug/m<sup>3</sup>, above its TAC of 0.42 ug/m<sup>3</sup>. 1,2-Dichloropropane was not detected in the outdoor reference sample, nor in the sub-slab soil gas sample (EW-Combined) from the large retail space.

This event is the first time 1,2-Dichloropropane has been detected in air samples from the large retail space; consequently, this detection (and exceedance) are considered anomalous and not from a subsurface or groundwater source. In addition, the compound is not one of the compounds for which the vapor mitigation system was installed. Thus, the concentration of 1,2-dichloropropane above the action level does not constitute a violation of the action levels contained in the order.

- J The large retail space has been subdivided into two spaces. The eastern section has been vacant since on or before August 27th, 2018 and was empty during the performance sampling on September 6, 2019. This space includes indoor air sample locations IA-2 and IA-4 and sub-slab vacuum monitoring well VMW-2. Prior to sampling, Wood contacted the property management company to have the HVAC system operating properly before and during sampling to ensure proper ventilation and conditions typical of an occupied condition.
- J The western side of the large retail space remains vacant and includes indoor air sample locations IA-1 and IA-3, vapor extraction well EW-5 and sub-slab vacuum monitoring locations VMW-1, VMW-3, and VMW-4.
- J A sample (Post Carbon-090619) was collected from the exhaust air of the treatment system. The concentration of total VOCs was higher than the total VOC concentration in the previous sampling round in February 2019. Wood will continue to monitor the total VOC's in the exhaust air to determine when a carbon change-out may be required in the future.

### **ASD System Monitoring/Maintenance**

The ASD system performance is monitored monthly by Clean Harbors Environmental Services. There were no system shutdowns during the reporting period. Vacuum monitoring conducted at the time of the September 2019 indoor air monitoring event indicated that the desired negative pressure condition existed at the various sub-slab monitoring points.

### **Next Reporting Period**

The next Semi-Annual Report will cover the monitoring period from September 2019 through February 2020. The report will be prepared and submitted to the Rhode Island Department of Environmental Management in March 2020.

Please contact the undersigned at (978) 392-5312 if we can provide additional information or answer any questions concerning these monitoring events and system adjustments.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.



Mark Maggiore  
Environmental Scientist



Herb Colby, PG  
Senior Project Manager

Attachments:

- Table 1. Outdoor Air Reference Sampling
- Table 2a. Summary of Analytical Results – Indoor Air Sampling for Small Retail Spaces
- Table 2b. Summary of Analytical Results – Extraction Wells (Small Retail)
- Table 3. Vacuum Monitoring Results – Small Retail Spaces
- Table 4a. Summary of Analytical Results – Indoor Air Sampling for Large Retail Space
- Table 4b. Summary of Analytical Results – Extraction Well and Post-Treatment Sampling for Large Retail Space
- Table 5. Vacuum Monitoring Results – Large Retail Space

Figure 1. Vapor Mitigation Sample Locations

- Appendix A. Laboratory Report
- Appendix B. Analytical Laboratory Detection Limits
- Appendix C. Historical Outdoor Reference Sample Results
- Appendix D1. Summary of Historical Analytical Results – Indoor Air Samples for Small Retail Space
- Appendix D2. Summary of Historical Analytical Results – Extraction Well Samples for Small Retail Space
- Appendix E1. Summary of Historical Analytical Results – Indoor Air Samples for Large Retail Space
- Appendix E2. Summary of Historical Analytical Results – Extraction Well and Post-Treatment Samples for Large Retail Space

cc: Robert Azar, Deputy Director - Providence Planning & Development  
G. Simpson, Textron, Inc. (electronic)  
Knight Memorial Library Repository  
Shane Brackett, Paolino Properties (electronic)

# Tables

**Table 1.**  
**Summary of Analytical Results - Outdoor Air Reference Sampling**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:		Outdoor Air Reference Location	
Location:		AA-1	
Sample ID:		AA-1-041119	AA-1-090619
Sample Date:		4/11/2019	9/6/2019
Analyte	Units		
1,1,1,2-Tetrachloroethane	ug/m3	0.44 U	0.44 U
1,1,1-Trichloroethane	ug/m3	0.19 U	0.19 U
1,1,2,2-Tetrachloroethane	ug/m3	0.24 U	0.24 U
1,1,2-Trichloroethane	ug/m3	0.19 U	0.19 U
1,1-Dichloroethane	ug/m3	0.14 U	0.14 U
1,1-Dichloroethene	ug/m3	0.14 U	0.14 U
1,2,4-Trichlorobenzene	ug/m3	0.26 U	0.26 U
1,2,4-Trimethylbenzene	ug/m3	0.17 U	0.17 U
1,2-Dibromoethane (EDB)	ug/m3	0.27 U	0.27 U
1,2-Dichlorobenzene	ug/m3	0.21 U	0.21 U
1,2-Dichloroethane	ug/m3	0.14 U	0.14 U
1,2-Dichloropropane	ug/m3	0.16 U	0.16 U
1,3,5-Trimethylbenzene	ug/m3	0.17 U	0.17 U
1,3-Butadiene	ug/m3	0.078 U	0.078 U
1,3-Dichlorobenzene	ug/m3	0.21 U	0.21 U
1,4-Dichlorobenzene	ug/m3	0.21 U	0.21 U
2-Butanone	ug/m3	0.71 J	0.63 J
2-Hexanone	ug/m3	0.14 U	0.14 U
4-Ethyltoluene	ug/m3	0.17 U	0.17 U
4-Methyl-2-pentanone	ug/m3	0.14 U	0.14 U
Acetone	ug/m3	6.9	5.1
Benzene	ug/m3	0.22	0.24
Benzyl chloride	ug/m3	0.18 U	0.18 U
Bromodichloromethane	ug/m3	0.24 U	0.24 U
Bromoform	ug/m3	0.36 U	0.36 U
Bromomethane	ug/m3	0.14 U	1.4 U
Carbon Disulfide	ug/m3	1.1 U	1.1 U
Carbon Tetrachloride	ug/m3	0.44	0.39
Chlorobenzene	ug/m3	0.16 U	0.16 U
Chloroethane	ug/m3	0.093 U	0.093 U
Chloroform	ug/m3	0.17 U	0.17 U
Chloromethane	ug/m3	1	0.87
cis-1,2-Dichloroethene	ug/m3	0.14 U	0.14 U
cis-1,3-Dichloropropene	ug/m3	0.16 U	0.16 U
Cyclohexane	ug/m3	0.12 U	0.12 U
Dibromochloromethane	ug/m3	0.3 U	0.3 U
Dichlorodifluoromethane	ug/m3	1.3	1.7
Ethanol	ug/m3	4	5.9
Ethyl Acetate	ug/m3	1.1	0.13 U
Ethylbenzene	ug/m3	0.15 U	0.17
Hexachlorobutadiene	ug/m3	0.37 U	0.37 U
Hexane	ug/m3	4.9 U	4.9 U
Isopropyl alcohol	ug/m3	1.2 J	0.18 J
m,p-Xylene	ug/m3	0.3 U	0.57
Methyl methacrylate	ug/m3	0.14 U	0.14 U
Methylene Chloride	ug/m3	0.29 J	0.28 J
Methyl-t-butyl ether	ug/m3	0.13 U	0.13 U
n-Heptane	ug/m3	0.14 U	0.14 U
o-Xylene	ug/m3	0.15 U	0.22
Propylene (Propene)	ug/m3	2.4 U	2.4 U
Styrene	ug/m3	0.15 U	0.15 U
Tetrachloroethene	ug/m3	0.24 U	0.68
Tetrahydrofuran	ug/m3	0.1 U	0.1 U
Toluene	ug/m3	0.31	0.68
trans-1,2-Dichloroethene	ug/m3	0.14 U	0.14 U
trans-1,3-Dichloropropene	ug/m3	0.16 U	0.16 U
Trichloroethene	ug/m3	0.19 U	0.34
Trichlorofluoromethane	ug/m3	1.6	1.2
Trichlorotrifluoroethane	ug/m3	0.52 J	1.1 U
Vinyl Acetate	ug/m3	2.5 U	2.5 U
Vinyl Chloride	ug/m3	0.09 U	0.09 U

Notes:  
NA - not available  
U - Not detected, value is the detection limit  
B - Compounds detected in method blank as well as field sample  
J - Indicates compound was detected at an estimated value.  
D - Result from diluted analyses  
ug/m3 - micrograms per cubic meter

Prepared By: AKN, 9/16/2019

Checked By: HWC, 9/16/2019

**Table 2a.**  
**Summary of Analytical Results - Indoor Air Sampling for Small Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:			Eastern Small Retail Space	Small Center Retail Space	Western Small Retail Space			
Location:			IA-5	IA-6	IA-7			
Sample ID:			IA-5-020819	IA-5-090619	IA-6-020819	IA-6-090619	IA-7-020819	IA-7-090619
Sample Date:			2/8/2019	9/6/2019	2/8/2019	9/6/2019	2/8/2019	9/6/2019
Analyte	Units	CT IACTIND 2003						
1,1,1,2-Tetrachloroethane	ug/m3	1.1	0.44 U	0.44 U	0.5 U	0.44 U	0.44 U	0.44 U
1,1,1-Trichloroethane	ug/m3	500	0.19 U	0.19 U	0.19 U	0.39	0.19 U	0.19 U
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2-Trichloroethane	ug/m3	12	0.19 U	0.19 U	0.19 U	0.19 U	0.4	0.19 U
1,1-Dichloroethane	ug/m3	430	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
1,1-Dichloroethene	ug/m3	20	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
1,2,4-Trichlorobenzene	ug/m3	NA	0.52 U	0.26 U	0.52 U	0.26 U	0.52 U	0.26 U
1,2,4-Trimethylbenzene	ug/m3	52	0.17 U	0.17 U	0.17 U	0.29	0.54	0.17 U
1,2-Dibromoethane (EDB)	ug/m3	0.038	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,2-Dichlorobenzene	ug/m3	410	0.67 J	0.21 U	0.73 J	0.21 U	0.65 J	0.21 U
1,2-Dichloroethane	ug/m3	0.31	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.46
1,2-Dichloropropane	ug/m3	0.42	0.16 U	0.16 U	0.16 U	0.16 U	0.4	0.8
1,3,5-Trimethylbenzene	ug/m3	52	0.42	0.17 U	0.17 U	0.17 U	0.39	0.17 U
1,3-Butadiene	ug/m3	NA	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U
1,3-Dichlorobenzene	ug/m3	410	0.5 J	0.21 U	0.58 J	0.21 U	0.5	0.21 U
1,4-Dichlorobenzene	ug/m3	24	0.57 J	0.21 U	0.65 J	0.21 U	0.57	0.21 U
2-Butanone	ug/m3	500	2.1 J	0.37 J	2.9 J	0.85 J	2.1 J	1.1 J
2-Hexanone	ug/m3	NA	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
4-Ethyltoluene	ug/m3	NA	0.17 U	0.17 U	0.55	0.17 U	0.49	0.17 U
4-Methyl-2-pentanone	ug/m3	200	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Acetone	ug/m3	500	12	6.1	14	11	13	18
Benzene	ug/m3	3.3	1.1	0.41	0.94	0.48	0.85	0.4
Benzyl chloride	ug/m3	NA	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Bromodichloromethane	ug/m3	0.46	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Bromoform	ug/m3	7.3	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
Bromomethane	ug/m3	NA	0.14 U	1.4 U	0.14 U	1.4 U	0.14 U	1.4 U
Carbon Disulfide	ug/m3	NA	1.1 UJ	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Carbon Tetrachloride	ug/m3	0.54	0.88	0.37	0.92	0.35	0.83	0.43
Chlorobenzene	ug/m3	200	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Chloroethane	ug/m3	500	0.19 U	0.093 U	0.19 U	0.093 U	0.19 U	0.093 U
Chloroform	ug/m3	0.5	0.55	0.24	0.17 U	0.17 U	0.57	0.34
Chloromethane	ug/m3	80	1.3	0.97	1.4	1	0.14 U	0.14 U
cis-1,2-Dichloroethene	ug/m3	100	0.63	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
cis-1,3-Dichloropropene	ug/m3	NA	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Cyclohexane	ug/m3	NA	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Dibromochloromethane	ug/m3	NA	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dichlorodifluoromethane	ug/m3	500	2.3	1.6	2.2	1.7	2.5	0.17 U
Ethanol	ug/m3	NA	15	24	49	30	45	200
Ethyl Acetate	ug/m3	NA	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Ethylbenzene	ug/m3	290	0.55	0.15 U	0.49	0.31	0.48	0.48
Hexachlorobutadiene	ug/m3	NA	0.75 U	0.37 U	0.75 U	0.37 U	0.75 U	0.37 U
Hexane	ug/m3	NA	0.99 J	4.9 U	4.9 U	0.35 J	4.9 U	4.9 U
Isopropyl alcohol	ug/m3	NA	1.7 J	1.6 J	3.1 J	3.9	5.6	18
m,p-Xylene	ug/m3	NA	1.3	0.36	1.1	0.9	1.1	1.5
Methyl methacrylate	ug/m3	NA	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Methylene Chloride	ug/m3	17	0.68 J	0.38 J	0.77 J	0.39 J	0.66 J	0.4 J
Methyl-t-butyl ether	ug/m3	190	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
n-Heptane	ug/m3	NA	0.65	0.35	0.72	0.51	0.14 U	0.43
o-Xylene	ug/m3	NA	0.58	0.15 U	0.52	0.33	0.48	0.51
Propylene (Propene)	ug/m3	NA	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
Styrene	ug/m3	290	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.33
Tetrachloroethene	ug/m3	5	1.5	0.82	0.99	2.6	0.88	1.6
Tetrahydrofuran	ug/m3	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Toluene	ug/m3	500	1.6	5.7	1.3	4.2	1.2	3.9
trans-1,2-Dichloroethene	ug/m3	200	0.33 J	0.14 U	0.34 J	0.14 U	0.28 U	0.14 U
trans-1,3-Dichloropropene	ug/m3	NA	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Trichloroethene	ug/m3	1	0.93	0.45	0.54	1.5	0.19 U	0.43
Trichlorofluoromethane	ug/m3	500	1.8	1.2	1.8	1.2	1.8	1.2
Trichlorotrifluoroethane	ug/m3	NA	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Vinyl Acetate	ug/m3	NA	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Vinyl Chloride	ug/m3	1.9	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U

Notes:

- NA - not available
- U - Not detected, value is the detection limit
- B - Compounds detected in method blank as well as field sample
- J - Indicates compound was detected at an estimated value.
- D - Result from diluted analyses
- ug/m3 - micrograms per cubic meter

Bolded and shaded values are above the CT target indoor air concentration for industrial/commercial scenarios

Prepared By: AKN, 9/16/2019

Checked By: HWC, 9/16/2019



**Table 2b.**  
**Summary of Analytical Results - Extraction Wells**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:		Extraction Well - Eastern Small		Extraction Well - Center Small		Extraction Well - Western Small	
Location:		EW-5		EW-6		EW-7	
Sample ID:		EW-5-020819	EW-5-090619	EW-6-020819	EW-6-090619	EW-7-020819	EW-7-090619
Sample Date:		2/8/2019	9/6/2019	2/8/2019	9/6/2019	2/8/2019	9/6/2019
Analyte	Units						
1,1,1,2-Tetrachloroethane	ug/m3	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
1,1,1-Trichloroethane	ug/m3	11	40	0.55 U	0.55 U	8.7	8.3
1,1,2,2-Tetrachloroethane	ug/m3	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
1,1,2-Trichloroethane	ug/m3	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U
1,1-Dichloroethane	ug/m3	0.4 U	4.9	0.4 U	0.4 U	0.4 U	1.3
1,1-Dichloroethene	ug/m3	0.4 U	0.4 U	1.1	0.4 U	0.4 U	0.4 U
1,2,4-Trichlorobenzene	ug/m3	1.5 U	0.74 U	1.5 U	0.74 U	1.5 U	0.74 U
1,2,4-Trimethylbenzene	ug/m3	1.4	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U
1,2-Dibromoethane (EDB)	ug/m3	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U
1,2-Dichlorobenzene	ug/m3	2.4 U	0.6 U	2.4 U	0.6 U	2.4 U	0.6 U
1,2-Dichloroethane	ug/m3	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
1,2-Dichloropropane	ug/m3	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U
1,3,5-Trimethylbenzene	ug/m3	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U
1,3-Butadiene	ug/m3	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
1,3-Dichlorobenzene	ug/m3	1.6 J	0.6 U	1.5 J	0.6 U	0.6 U	0.6 U
1,4-Dichlorobenzene	ug/m3	1.6 J	0.6 U	1.6 J	0.6 U	0.6 U	0.6 U
2-Butanone	ug/m3	110	7300	6.4 J	17	12 U	22
2-Hexanone	ug/m3	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
4-Ethyltoluene	ug/m3	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U
4-Methyl-2-pentanone	ug/m3	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
Acetone	ug/m3	47	1700	33	38	21	17
Benzene	ug/m3	3.6	2.5	2.5	1.2	2.1	1.4
Benzyl chloride	ug/m3	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U
Bromodichloromethane	ug/m3	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U
Bromoform	ug/m3	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	ug/m3	0.39 U	3.9 U	0.39 U	3.9 U	0.39 U	3.9 U
Carbon Disulfide	ug/m3	66 J	210	3.1 U	3.1 U	30 J	47
Carbon Tetrachloride	ug/m3	0.63 U	6	2	0.36 J	0.63 U	0.63 U
Chlorobenzene	ug/m3	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U
Chloroethane	ug/m3	0.53 U	0.26 U	0.53 U	0.26 U	0.53 U	0.26 U
Chloroform	ug/m3	15	0.49 U	3.3	0.49 U	2.1	1.7
Chloromethane	ug/m3	0.41 U	0.41 U	0.41 U	1.1	0.41 U	0.41 U
cis-1,2-Dichloroethene	ug/m3	1.8	2.1	0.4 U	0.4 U	1.7	1.2
cis-1,3-Dichloropropene	ug/m3	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Cyclohexane	ug/m3	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
Dibromochloromethane	ug/m3	0.85 U	0.85 U	0.85 U	0.85 U	2.2	0.85 U
Dichlorodifluoromethane	ug/m3	0.49 U	0.49 U	0.49 U	2.2	0.49 U	0.49 U
Ethanol	ug/m3	36	18	39	44	7.5 U	63
Ethyl Acetate	ug/m3	0.36 U	0.36 U	59	0.36 U	0.36 U	0.36 U
Ethylbenzene	ug/m3	1.2	0.43 U	1.4	0.43 U	1.3	0.43 U
Hexachlorobutadiene	ug/m3	2.1 U	1.1 U	2.1 U	1.1 U	2.1 U	1.1 U
Hexane	ug/m3	14 U	14 U	14 U	14 U	14 U	14 U
Isopropyl alcohol	ug/m3	9.8 U	8.7 J	9.1 J	0.83 J	5.4 J	4.6 J
m,p-Xylene	ug/m3	2.6	0.87 U	2.9	0.76 J	2.6	0.87 U
Methyl methacrylate	ug/m3	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
Methylene Chloride	ug/m3	2.6 J	3.5 U	1.8 J	0.68 J	1.5 J	3.5 U
Methyl-t-butyl ether	ug/m3	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
n-Heptane	ug/m3	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
o-Xylene	ug/m3	1.3	0.43 U	1.4	0.43 U	1.3	0.43 U
Propylene (Propene)	ug/m3	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U
Styrene	ug/m3	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
Tetrachloroethene	ug/m3	9.6	1.3	2.1	0.73	15	93
Tetrahydrofuran	ug/m3	240	4900	0.29 U	6.1	220	2500
Toluene	ug/m3	2.1	1.9	4.8	2.1	2.4	1.5
trans-1,2-Dichloroethene	ug/m3	1.2 J	0.4 U	1.1 J	0.4 U	2.2 J	1.4
trans-1,3-Dichloropropene	ug/m3	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Trichloroethene	ug/m3	18	130	0.54 U	0.37 J	42	150
Trichlorofluoromethane	ug/m3	3.9	3.1	3.1	1.3 J	190	140
Trichlorotrifluoroethane	ug/m3	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U
Vinyl Acetate	ug/m3	7 U	7 U	7 U	7 U	7 U	7 U
Vinyl Chloride	ug/m3	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U

Notes:  
NA - not available  
U - Not detected, value is the detection limit  
B - Compounds detected in method blank as well as field sample  
J - Indicates compound was detected at an estimated value.  
D - Result from diluted analyses  
ug/m3 - micrograms per cubic meter

Prepared By: AKN, 9/16/2019

Checked By: HWC, 9/16/2019



**Table 4a.**  
**Summary of Analytical Results - Indoor Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:			Large Retail Space							
Location:			IA-1		IA-2		IA-3		IA-4	
Sample ID:			IA-1-020819	IA-1-090619	IA-2-041119	IA-2-090619	IA-3-020819	IA-3-090619	IA-4-041119	IA-4-090619
Sample Date:			2/8/2019	9/6/2019	4/11/2019	9/6/2019	2/8/2019	9/6/2019	4/11/2019	9/6/2019
Analyte	Units	CT IACTIND 2003								
1,1,1,2-Tetrachloroethane	ug/m3	1.1	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.5 U
1,1,1-Trichloroethane	ug/m3	500	0.43	0.19 U	0.61	0.19 U	0.49	0.19 U	0.78	0.22 U
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.27 U
1,1,2-Trichloroethane	ug/m3	12	0.42	0.19 U	0.19 U	0.19 U	0.55	0.19 U	0.19 U	0.22 U
1,1-Dichloroethane	ug/m3	430	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.16 U
1,1-Dichloroethene	ug/m3	20	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.16 U
1,2,4-Trichlorobenzene	ug/m3	NA	0.52 U	0.26 U	0.26 U	0.26 U	0.52 U	0.26 U	0.26 U	0.3 U
1,2,4-Trimethylbenzene	ug/m3	52	0.57	0.29	0.17 U	0.31	0.17 U	0.39	0.17 U	0.27
1,2-Dibromoethane (EDB)	ug/m3	0.038	0.27 U	0.27 U	0.27 U	0.27 U	0.72	0.27 U	0.27 U	0.31 U
1,2-Dichlorobenzene	ug/m3	410	0.7 J	0.21 U	0.21 U	0.21 U	0.84 U	0.21 U	0.21 U	0.24 U
1,2-Dichloroethane	ug/m3	0.31	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.16 U
1,2-Dichloropropane	ug/m3	0.42	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	1.3	0.16 U	0.18 U
1,3,5-Trimethylbenzene	ug/m3	52	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.2 U
1,3-Butadiene	ug/m3	NA	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.088 U
1,3-Dichlorobenzene	ug/m3	410	0.54 J	0.21 U	0.21 U	0.21 U	0.58 J	0.21 U	0.21 U	0.24 U
1,4-Dichlorobenzene	ug/m3	24	0.59 J	0.21 U	0.21 U	0.21 U	0.62 J	0.21 U	0.21 U	0.24 U
2-Butanone	ug/m3	500	0.88 J	0.73 J	0.78 J	0.68 J	2.7 J	1.2 J	0.35 J	0.52 J
2-Hexanone	ug/m3	NA	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.16 U
4-Ethyltoluene	ug/m3	NA	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.4	0.17 U	0.2 U
4-Methyl-2-pentanone	ug/m3	200	0.45	0.14 U	0.14 U	0.47	0.14 U	0.87	0.14 U	0.16 U
Acetone	ug/m3	500	4.5	6.7	6.3	6.4	13	8.5	4	5.9
Benzene	ug/m3	3.3	0.91	0.41	0.31	0.39	0.94	0.48	0.24	0.43
Benzyl chloride	ug/m3	NA	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.21 U
Bromodichloromethane	ug/m3	0.46	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.27 U
Bromoform	ug/m3	7.3	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.41 U
Bromomethane	ug/m3	NA	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.16 U
Carbon Disulfide	ug/m3	NA	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U
Carbon Tetrachloride	ug/m3	0.54	0.87	0.36	0.35	0.37	0.22 U	0.37	0.44	0.37
Chlorobenzene	ug/m3	200	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.18 U
Chloroethane	ug/m3	500	0.19 U	0.093 U	0.093 U	0.093 U	0.19 U	0.093 U	0.093 U	0.11 U
Chloroform	ug/m3	0.5	0.5	0.18	0.29	0.19	0.17 U	0.17 U	0.17 U	0.2 U
Chloromethane	ug/m3	80	1.3	0.14 U	1.6	0.9	1.3	1	1.1	1.2
cis-1,2-Dichloroethene	ug/m3	100	0.35	0.14 U	0.41	0.14 U	0.14 U	0.14 U	0.53	0.16 U
cis-1,3-Dichloropropene	ug/m3	NA	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.18 U
Cyclohexane	ug/m3	NA	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.14 U
Dibromochloromethane	ug/m3	NA	0.68	0.3 U	0.3 U	0.3 U	0.73	0.3 U	0.3 U	0.34 U
Dichlorodifluoromethane	ug/m3	500	2.4	0.17 U	1.4	1.6	2.3	0.17 U	1.4	1.5
Ethanol	ug/m3	NA	17	16	4.5	22	18	24	2.9	22
Ethyl Acetate	ug/m3	NA	0.13 U	0.13 U	1.1	0.13 U	6	3.4	0.13 U	0.14 U
Ethylbenzene	ug/m3	290	0.5	0.28	0.15 U	0.39	0.55	0.66	0.15 U	0.39
Hexachlorobutadiene	ug/m3	NA	0.75 U	0.37 U	0.37 U	0.37 U	0.75 U	0.37 U	0.37 U	0.43 U
Hexane	ug/m3	NA	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	0.42 J	4.9 U	0.28 J
Isopropyl alcohol	ug/m3	NA	1.6 J	1.4 J	1.1 J	0.8 J	2.7 J	4.6	3.4 U	0.87 J
m,p-Xylene	ug/m3	NA	1.1	0.99	0.3 U	1.3	1.3	2.3	0.3 U	1.2
Methyl methacrylate	ug/m3	NA	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.16 U
Methylene Chloride	ug/m3	17	0.73 J	0.35 J	0.32 J	0.39 J	0.87 J	0.54 J	0.26 J	0.43 J
Methyl-t-butyl ether	ug/m3	190	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.14 U
n-Heptane	ug/m3	NA	0.14 U	0.31	0.14 U	0.32	0.65	0.63	0.14 U	0.56
o-Xylene	ug/m3	NA	0.53	0.34	0.15 U	0.46	0.57	0.74	0.15 U	0.44
Propylene (Propene)	ug/m3	NA	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.8 U
Styrene	ug/m3	290	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.17 U
Tetrachloroethene	ug/m3	5	0.74	0.16 J	3.5	0.24 U	0.83	0.21 J	4.5	0.27 U
Tetrahydrofuran	ug/m3	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.12 U
Toluene	ug/m3	500	1.2	3.2	0.53	1.3	1.6	7.1	0.33	1.4
trans-1,2-Dichloroethene	ug/m3	200	0.32 J	0.14 U	0.14 U	0.14 U	0.37 J	0.14 U	0.14 U	0.16 U
trans-1,3-Dichloropropene	ug/m3	NA	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.18 U
Trichloroethene	ug/m3	1	0.48	0.12 J	0.71	0.19 U	0.6	0.2	0.91	0.21 U
Trichlorofluoromethane	ug/m3	500	1.9	1.2	1.7	1.1	1.9	1.2	1.6	1.2
Trichlorotrifluoroethane	ug/m3	NA	1.4	1.1 U	0.53 J	1.1 U	1.1 U	1.1 U	0.56 J	0.42 J
Vinyl Acetate	ug/m3	NA	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.8 U
Vinyl Chloride	ug/m3	1.9	0.21	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.12	0.1 U

Notes:  
 NA - not available  
 U - Not detected, value is the detection limit  
 B - Compounds detected in method blank as well as field sample  
 J - Indicates compound was detected at an estimated value.  
 D - Result from diluted analyses  
 ug/m3 - micrograms per cubic meter  
 Bolded and shaded values are above the CT target indoor air concentration for industrial/commercial scenarios

Prepared By: AKN, 9/16/2019  
 Checked By: HWC, 9/16/2019

**Table 4b.**  
**Summary of Analytical Results - Extraction Well and Post-Treatment Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:		Extraction Well - Large Retail		Post Treatment - Large Retail	
Location:		EW-Combined		PostCarbon	
Sample ID:	Units	EW-Combined-020819	EW-Combined-090619	Post Carbon-020819	Post Carbon-090619
		Sample Date: 2/8/2019	9/6/2019	2/8/2019	9/6/2019
1,1,1,2-Tetrachloroethane	ug/m3	1.2 U	1.2 U	1.2 U	1.2 U
1,1,1-Trichloroethane	ug/m3	62	670	0.55 U	2.3
1,1,2,2-Tetrachloroethane	ug/m3	0.69 U	0.69 U	0.69 U	0.69 U
1,1,2-Trichloroethane	ug/m3	0.55 U	0.55 U	0.55 U	0.55 U
1,1-Dichloroethane	ug/m3	13	45	0.4 U	2.8
1,1-Dichloroethene	ug/m3	10	24	0.4 U	9.8
1,2,4-Trichlorobenzene	ug/m3	1.5 U	0.74 U	1.5 U	0.74 U
1,2,4-Trimethylbenzene	ug/m3	1.2	0.49 U	0.49 U	8.1
1,2-Dibromoethane (EDB)	ug/m3	0.77 U	0.77 U	0.77 U	0.77 U
1,2-Dichlorobenzene	ug/m3	2 J	0.6 U	2.4 U	0.6 U
1,2-Dichloroethane	ug/m3	0.4 U	0.4 U	0.4 U	0.4 U
1,2-Dichloropropane	ug/m3	0.46 U	0.46 U	0.46 U	110
1,3,5-Trimethylbenzene	ug/m3	1.2	0.49 U	0.49 U	2.9
1,3-Butadiene	ug/m3	0.22 U	0.22 U	0.22 U	0.22 U
1,3-Dichlorobenzene	ug/m3	0.6 U	0.6 U	1.4 J	0.6 U
1,4-Dichlorobenzene	ug/m3	0.6 U	0.6 U	1.5 J	0.6 U
2-Butanone	ug/m3	3.1 J	1.6 J	12 U	27
2-Hexanone	ug/m3	0.41 U	0.41 U	0.41 U	0.41 U
4-Ethyltoluene	ug/m3	0.49 U	0.49 U	0.49 U	9.5
4-Methyl-2-pentanone	ug/m3	0.41 U	0.41 U	0.41 U	28
Acetone	ug/m3	9.4 J	4.9 J	3.5 J	71
Benzene	ug/m3	1.4	0.4	1.2	1.6
Benzyl chloride	ug/m3	0.52 U	0.52 U	0.52 U	0.52 U
Bromodichloromethane	ug/m3	0.67 U	0.67 U	0.67 U	0.67 U
Bromoform	ug/m3	1 U	1 U	1 U	1 U
Bromomethane	ug/m3	0.39 U	3.9 U	0.39 U	3.9 U
Carbon Disulfide	ug/m3	3.1 U	3.1 U	3.1 U	3.1 U
Carbon Tetrachloride	ug/m3	0.63 U	89	0.63 U	0.63 U
Chlorobenzene	ug/m3	0.46 U	0.46 U	0.46 U	0.46 U
Chloroethane	ug/m3	0.53 U	0.26 U	0.53 U	0.26 U
Chloroform	ug/m3	1.8	3.2	1.2	0.49 U
Chloromethane	ug/m3	0.41 U	0.41 U	0.41 U	0.41 U
cis-1,2-Dichloroethene	ug/m3	5.8	27	1.2	2.3
cis-1,3-Dichloropropene	ug/m3	0.45 U	0.45 U	0.45 U	0.45 U
Cyclohexane	ug/m3	0.34 U	0.34 U	0.34 U	0.34 U
Dibromochloromethane	ug/m3	0.85 U	0.85 U	0.85 U	0.85 U
Dichlorodifluoromethane	ug/m3	0.49 U	0.49 U	0.49 U	0.49 U
Ethanol	ug/m3	25	25	11	360
Ethyl Acetate	ug/m3	0.36 U	0.36 U	0.36 U	180
Ethylbenzene	ug/m3	1.1	0.43 U	1.1	33
Hexachlorobutadiene	ug/m3	2.1 U	1.1 U	2.1 U	1.1 U
Hexane	ug/m3	14 U	14 U	14 U	14 U
Isopropyl alcohol	ug/m3	2.2 J	9.8 U	9.8 U	230
m,p-Xylene	ug/m3	2.4	1	2.4	120
Methyl methacrylate	ug/m3	0.41 U	0.41 U	0.41 U	0.41 U
Methylene Chloride	ug/m3	1.3 J	3.5 U	1.2 J	10
Methyl-t-butyl ether	ug/m3	0.36 U	0.36 U	0.36 U	0.36 U
n-Heptane	ug/m3	0.41 U	0.41 U	0.41 U	15
o-Xylene	ug/m3	1.1	0.43 U	1.2	36
Propylene (Propene)	ug/m3	6.9 U	6.9 U	6.9 U	6.9 U
Styrene	ug/m3	0.43 U	0.43 U	0.43 U	10
Tetrachloroethene	ug/m3	20	110	10	7.7
Tetrahydrofuran	ug/m3	0.29 U	3.2	0.29 U	0.29 U
Toluene	ug/m3	2	1.8	2.1	340
trans-1,2-Dichloroethene	ug/m3	1.1 J	0.55	0.93 J	0.78
trans-1,3-Dichloropropene	ug/m3	0.45 U	0.45 U	0.45 U	0.45 U
Trichloroethene	ug/m3	29	520	8.2	11
Trichlorofluoromethane	ug/m3	62	230	2.2 J	44
Trichlorotrifluoroethane	ug/m3	3.1 U	3.1 U	3.1 U	3.1 U
Vinyl Acetate	ug/m3	7 U	7 U	7 U	7 U
Vinyl Chloride	ug/m3	0.26 U	0.26 U	0.26 U	0.26 U

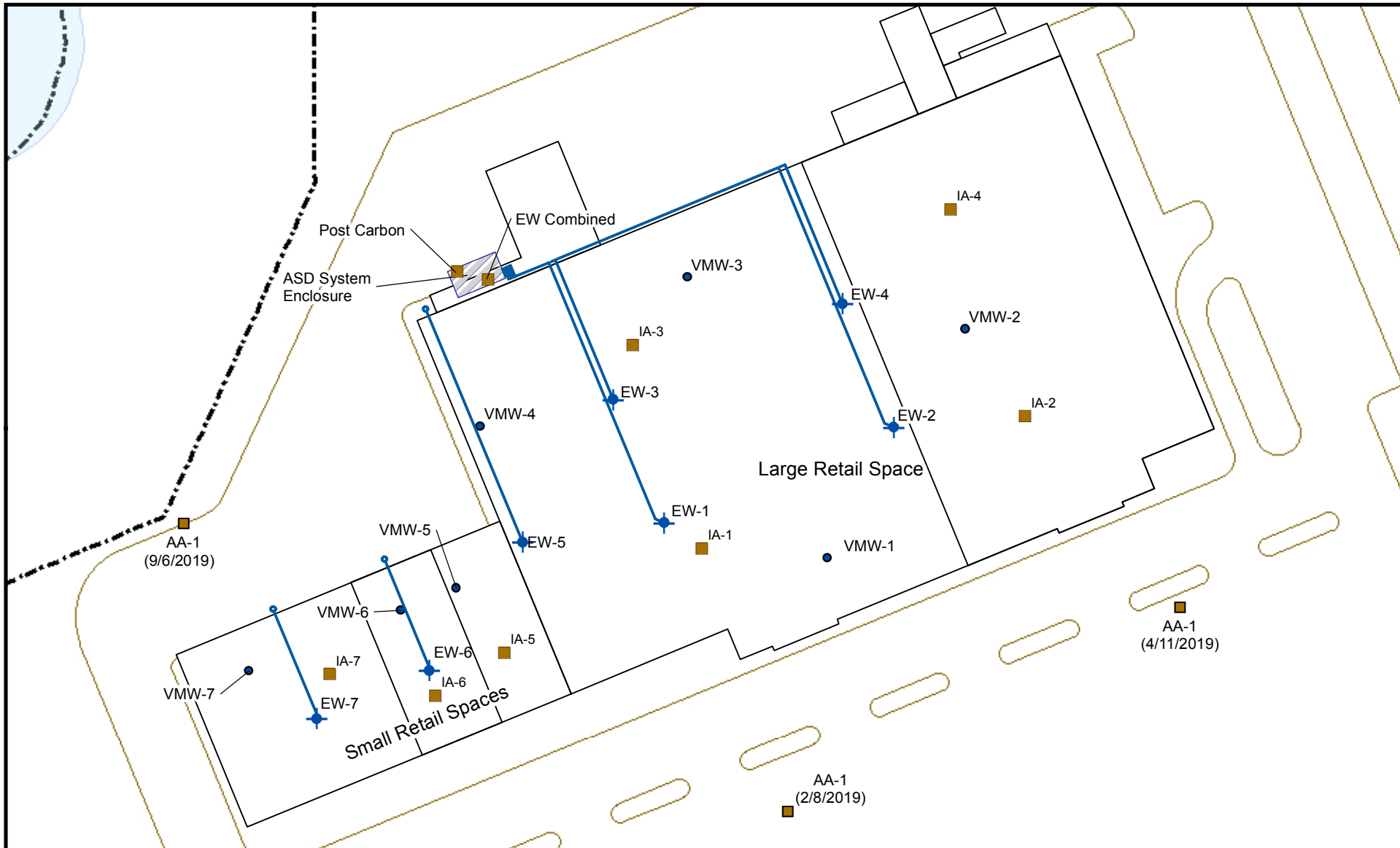
Notes:  
 NA - not available  
 U - Not detected, value is the detection limit  
 B - Compounds detected in method blank as well as field sample  
 J - Indicates compound was detected at an estimated value.  
 D - Result from diluted analyses  
 ug/m3 - micrograms per cubic meter

Prepared By: AKN, 9/16/2019

Checked By: HWC, 9/16/2019



# Figures



All locations are approximate

N  
 0 30 60 Feet

Prepared/Date: EFG 09/27/19    Checked/Date: HWC 09/27/19

- Legend**
- Air Sample Location
  - Vacuum Monitoring Well
  - Extraction Well/Sample Location
  - Extraction Well Piping
  - Current Building
  - Pavement Outline
  - Effluent Location

Figure 1  
 Vapor Mitigation  
 Sample Locations

Former Gorham Manufacturing Facility  
 333 Adelaide Avenue  
 Providence, Rhode Island

# **Appendix A**

Laboratory Report



September 13, 2019

Reviewed 09/19/2019  
Elizabeth Penta  
Wood

Herb Colby  
WOOD PLC - Chelmsford  
271 Mill Road, 3rd Floor  
Chelmsford, MA 01824

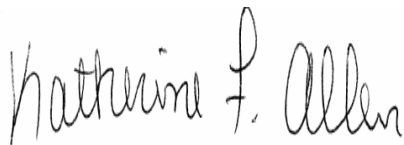
Project Location: Providence, RI  
Client Job Number:  
Project Number: 3651190114  
Laboratory Work Order Number: 19I0227

Enclosed are results of analyses for samples received by the laboratory on September 6, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Raymond J. McCarthy  
Project Manager



QA Officer  
Katherine Allen



Laboratory Manager  
Daren Damboragian



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

WOOD PLC - Chelmsford  
271 Mill Road, 3rd Floor  
Chelmsford, MA 01824  
ATTN: Herb Colby

REPORT DATE: 9/13/2019

PURCHASE ORDER NUMBER: C012206368

PROJECT NUMBER: 3651190114

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 1910227

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

PROJECT LOCATION: Providence, RI

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
IA-1-090619	1910227-01	Indoor air		EPA TO-15	
IA-2-090619	1910227-02	Indoor air		EPA TO-15	
IA-3-090619	1910227-03	Indoor air		EPA TO-15	
IA-4-090619	1910227-04	Indoor air		EPA TO-15	
IA-5-090619	1910227-05	Indoor air		EPA TO-15	
IA-6-090619	1910227-06	Indoor air		EPA TO-15	
IA-7-090619	1910227-07	Indoor air		EPA TO-15	
AA-1-090619	1910227-08	Ambient Air		EPA TO-15	
Post Carbon-090619	1910227-09	Soil Gas		EPA TO-15	
EW-5-090619	1910227-10	Soil Gas		EPA TO-15	
EW-6-090619	1910227-11	Soil Gas		EPA TO-15	
EW-7-090619	1910227-12	Soil Gas		EPA TO-15	
EW-Combined-090619	1910227-13	Soil Gas		EPA TO-15	
Unused Can/ Reg# 1473/4366	1910227-14	Air		-	

**CASE NARRATIVE SUMMARY**

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

**EPA TO-15**

**Qualifications:**

Reported result is estimated. Value reported over verified calibration range.

**Analyte & Samples(s) Qualified:**

**2-Butanone (MEK), Acetone, Tetrahydrofuran**  
B240263-DUP1

Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

**Analyte & Samples(s) Qualified:**

**1,2,4-Trichlorobenzene**  
B240263-BS1

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

**Analyte & Samples(s) Qualified:**

**Ethanol, Isopropanol**

19I0227-01[IA-1-090619], 19I0227-02[IA-2-090619], 19I0227-03[IA-3-090619], 19I0227-04[IA-4-090619], 19I0227-05[IA-5-090619], 19I0227-06[IA-6-090619], 19I0227-07RE1[IA-7-090619], 19I0227-08[AA-1-090619], 19I0227-09RE1[Post Carbon-090619], 19I0227-10[EW-5-090619], 19I0227- 11[EW-6-090619], 19I0227-12[EW-7-090619], 19I0227-13[EW-Combined-090619], B240263-BLK1, B240263-BS1, B240263-DUP1, S040195-CCV1, 19I0227-07[IA-7-090619], 19I0227-09[Post Carbon-090619]

The results of analyses reported only relate to samples submitted to the Con-Test 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

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: IA-1-090619**  
**Sample ID: 1910227-01**  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 09:58

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1717  
 Canister Size: 6 liter  
 Flow Controller ID: 4303  
 Sample Type: 30 min

**Work Order: 1910227**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -4.5  
 Receipt Vacuum(in Hg): -5.3  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Acetone	2.8	1.4	0.49		6.7	3.3	1.2	0.702	9/10/19 16:52	BRF	
Benzene	0.13	0.035	0.014		0.41	0.11	0.046	0.702	9/10/19 16:52	BRF	
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.040	0.702	9/10/19 16:52	BRF	
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.087	0.702	9/10/19 16:52	BRF	
Bromoform	ND	0.035	0.016		ND	0.36	0.16	0.702	9/10/19 16:52	BRF	
Bromomethane	ND	0.35	0.024		ND	1.4	0.094	0.702	9/10/19 16:52	BRF	
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.049	0.702	9/10/19 16:52	BRF	
2-Butanone (MEK)	0.25	1.4	0.055	J	0.73	4.1	0.16	0.702	9/10/19 16:52	BRF	
Carbon Disulfide	ND	0.35	0.024		ND	1.1	0.075	0.702	9/10/19 16:52	BRF	
Carbon Tetrachloride	0.058	0.035	0.011		0.36	0.22	0.072	0.702	9/10/19 16:52	BRF	
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.079	0.702	9/10/19 16:52	BRF	
Chloroethane	ND	0.035	0.021		ND	0.093	0.056	0.702	9/10/19 16:52	BRF	
Chloroform	0.036	0.035	0.013		0.18	0.17	0.064	0.702	9/10/19 16:52	BRF	
Chloromethane	ND	0.070	0.024		ND	0.14	0.049	0.702	9/10/19 16:52	BRF	
Cyclohexane	ND	0.035	0.025		ND	0.12	0.086	0.702	9/10/19 16:52	BRF	
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.099	0.702	9/10/19 16:52	BRF	
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.11	0.702	9/10/19 16:52	BRF	
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.10	0.702	9/10/19 16:52	BRF	
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.11	0.702	9/10/19 16:52	BRF	
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.13	0.702	9/10/19 16:52	BRF	
Dichlorodifluoromethane (Freon 12)	ND	0.035	0.015		ND	0.17	0.075	0.702	9/10/19 16:52	BRF	
1,1-Dichloroethane	ND	0.035	0.011		ND	0.14	0.043	0.702	9/10/19 16:52	BRF	
1,2-Dichloroethane	ND	0.035	0.013		ND	0.14	0.054	0.702	9/10/19 16:52	BRF	
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 16:52	BRF	
cis-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.057	0.702	9/10/19 16:52	BRF	
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 16:52	BRF	
1,2-Dichloropropane	ND	0.035	0.012		ND	0.16	0.057	0.702	9/10/19 16:52	BRF	
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.056	0.702	9/10/19 16:52	BRF	
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.058	0.702	9/10/19 16:52	BRF	
Ethanol	8.6	1.4	0.63	V-05	16	2.6	1.2	0.702	9/10/19 16:52	BRF	
Ethyl Acetate	ND	0.035	0.026		ND	0.13	0.094	0.702	9/10/19 16:52	BRF	
Ethylbenzene	0.065	0.035	0.020		0.28	0.15	0.088	0.702	9/10/19 16:52	BRF	
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.11	0.702	9/10/19 16:52	BRF	
Heptane	0.076	0.035	0.021		0.31	0.14	0.085	0.702	9/10/19 16:52	BRF	
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.17	0.702	9/10/19 16:52	BRF	
Hexane	ND	1.4	0.062		ND	4.9	0.22	0.702	9/10/19 16:52	BRF	
2-Hexanone (MBK)	ND	0.035	0.021		ND	0.14	0.085	0.702	9/10/19 16:52	BRF	
Isopropanol	0.58	1.4	0.043	V-05, J	1.4	3.4	0.11	0.702	9/10/19 16:52	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.018		ND	0.13	0.063	0.702	9/10/19 16:52	BRF	
Methylene Chloride	0.10	0.35	0.043	J	0.35	1.2	0.15	0.702	9/10/19 16:52	BRF	
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.082	0.702	9/10/19 16:52	BRF	
4-Methyl-2-pentanone (MIBK)	ND	0.035	0.017		ND	0.14	0.069	0.702	9/10/19 16:52	BRF	
Propene	ND	1.4	0.035		ND	2.4	0.060	0.702	9/10/19 16:52	BRF	
Styrene	ND	0.035	0.022		ND	0.15	0.092	0.702	9/10/19 16:52	BRF	
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.16	0.702	9/10/19 16:52	BRF	
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.11	0.702	9/10/19 16:52	BRF	
Tetrachloroethylene	0.024	0.035	0.020	J	0.16	0.24	0.13	0.702	9/10/19 16:52	BRF	

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: IA-1-090619**  
**Sample ID: 19I0227-01**  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 09:58

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1717  
 Canister Size: 6 liter  
 Flow Controller ID: 4303  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -4.5  
 Receipt Vacuum(in Hg): -5.3  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Tetrahydrofuran	ND	0.035	0.023		ND	0.10	0.069	0.702	9/10/19 16:52	BRF	
Toluene	0.84	0.035	0.018		3.2	0.13	0.068	0.702	9/10/19 16:52	BRF	
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.18	0.702	9/10/19 16:52	BRF	
1,1,1-Trichloroethane	ND	0.035	0.013		ND	0.19	0.072	0.702	9/10/19 16:52	BRF	
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.079	0.702	9/10/19 16:52	BRF	
Trichloroethylene	0.022	0.035	0.014	J	0.12	0.19	0.076	0.702	9/10/19 16:52	BRF	
Trichlorofluoromethane (Freon 11)	0.21	0.14	0.020		1.2	0.79	0.11	0.702	9/10/19 16:52	BRF	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14	0.021		ND	1.1	0.16	0.702	9/10/19 16:52	BRF	
1,2,4-Trimethylbenzene	0.059	0.035	0.022		0.29	0.17	0.11	0.702	9/10/19 16:52	BRF	
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.11	0.702	9/10/19 16:52	BRF	
Vinyl Acetate	ND	0.70	0.017		ND	2.5	0.059	0.702	9/10/19 16:52	BRF	
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.057	0.702	9/10/19 16:52	BRF	
m&p-Xylene	0.23	0.070	0.040		0.99	0.30	0.18	0.702	9/10/19 16:52	BRF	
o-Xylene	0.077	0.035	0.022		0.34	0.15	0.095	0.702	9/10/19 16:52	BRF	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	100	70-130	9/10/19 16:52
4-Bromofluorobenzene (2)	97.5	70-130	9/10/19 16:52

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: IA-2-090619**  
**Sample ID: 19I0227-02**  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 09:55

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1222  
 Canister Size: 6 liter  
 Flow Controller ID: 4212  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -3  
 Receipt Vacuum(in Hg): -4.8  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time Analyzed	Analyst
	Results	RL	MDL		Results	RL	MDL			
Acetone	2.7	1.4	0.49		6.4	3.3	1.2	0.702	9/10/19 17:28	BRF
Benzene	0.12	0.035	0.014		0.39	0.11	0.046	0.702	9/10/19 17:28	BRF
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.040	0.702	9/10/19 17:28	BRF
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.087	0.702	9/10/19 17:28	BRF
Bromoform	ND	0.035	0.016		ND	0.36	0.16	0.702	9/10/19 17:28	BRF
Bromomethane	ND	0.35	0.024		ND	1.4	0.094	0.702	9/10/19 17:28	BRF
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.049	0.702	9/10/19 17:28	BRF
2-Butanone (MEK)	0.23	1.4	0.055	J	0.68	4.1	0.16	0.702	9/10/19 17:28	BRF
Carbon Disulfide	ND	0.35	0.024		ND	1.1	0.075	0.702	9/10/19 17:28	BRF
Carbon Tetrachloride	0.059	0.035	0.011		0.37	0.22	0.072	0.702	9/10/19 17:28	BRF
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.079	0.702	9/10/19 17:28	BRF
Chloroethane	ND	0.035	0.021		ND	0.093	0.056	0.702	9/10/19 17:28	BRF
Chloroform	0.038	0.035	0.013		0.19	0.17	0.064	0.702	9/10/19 17:28	BRF
Chloromethane	0.44	0.070	0.024		0.90	0.14	0.049	0.702	9/10/19 17:28	BRF
Cyclohexane	ND	0.035	0.025		ND	0.12	0.086	0.702	9/10/19 17:28	BRF
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.099	0.702	9/10/19 17:28	BRF
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.11	0.702	9/10/19 17:28	BRF
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.10	0.702	9/10/19 17:28	BRF
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.11	0.702	9/10/19 17:28	BRF
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.13	0.702	9/10/19 17:28	BRF
Dichlorodifluoromethane (Freon 12)	0.32	0.035	0.015		1.6	0.17	0.075	0.702	9/10/19 17:28	BRF
1,1-Dichloroethane	ND	0.035	0.011		ND	0.14	0.043	0.702	9/10/19 17:28	BRF
1,2-Dichloroethane	ND	0.035	0.013		ND	0.14	0.054	0.702	9/10/19 17:28	BRF
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 17:28	BRF
cis-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.057	0.702	9/10/19 17:28	BRF
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 17:28	BRF
1,2-Dichloropropane	ND	0.035	0.012		ND	0.16	0.057	0.702	9/10/19 17:28	BRF
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.056	0.702	9/10/19 17:28	BRF
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.058	0.702	9/10/19 17:28	BRF
Ethanol	12	1.4	0.63	V-05	22	2.6	1.2	0.702	9/10/19 17:28	BRF
Ethyl Acetate	ND	0.035	0.026		ND	0.13	0.094	0.702	9/10/19 17:28	BRF
Ethylbenzene	0.089	0.035	0.020		0.39	0.15	0.088	0.702	9/10/19 17:28	BRF
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.11	0.702	9/10/19 17:28	BRF
Heptane	0.077	0.035	0.021		0.32	0.14	0.085	0.702	9/10/19 17:28	BRF
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.17	0.702	9/10/19 17:28	BRF
Hexane	ND	1.4	0.062		ND	4.9	0.22	0.702	9/10/19 17:28	BRF
2-Hexanone (MBK)	ND	0.035	0.021		ND	0.14	0.085	0.702	9/10/19 17:28	BRF
Isopropanol	0.33	1.4	0.043	V-05, J	0.80	3.4	0.11	0.702	9/10/19 17:28	BRF
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.018		ND	0.13	0.063	0.702	9/10/19 17:28	BRF
Methylene Chloride	0.11	0.35	0.043	J	0.39	1.2	0.15	0.702	9/10/19 17:28	BRF
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.082	0.702	9/10/19 17:28	BRF
4-Methyl-2-pentanone (MIBK)	0.11	0.035	0.017		0.47	0.14	0.069	0.702	9/10/19 17:28	BRF
Propene	ND	1.4	0.035		ND	2.4	0.060	0.702	9/10/19 17:28	BRF
Styrene	ND	0.035	0.022		ND	0.15	0.092	0.702	9/10/19 17:28	BRF
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.16	0.702	9/10/19 17:28	BRF
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.11	0.702	9/10/19 17:28	BRF
Tetrachloroethylene	ND	0.035	0.020		ND	0.24	0.13	0.702	9/10/19 17:28	BRF

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
 Field Sample #: IA-2-090619  
 Sample ID: 1910227-02  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 09:55

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1222  
 Canister Size: 6 liter  
 Flow Controller ID: 4212  
 Sample Type: 30 min

**Work Order: 1910227**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -3  
 Receipt Vacuum(in Hg): -4.8  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Tetrahydrofuran	ND	0.035	0.023		ND	0.10	0.069	0.702	9/10/19 17:28	BRF	
Toluene	0.36	0.035	0.018		1.3	0.13	0.068	0.702	9/10/19 17:28	BRF	
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.18	0.702	9/10/19 17:28	BRF	
1,1,1-Trichloroethane	ND	0.035	0.013		ND	0.19	0.072	0.702	9/10/19 17:28	BRF	
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.079	0.702	9/10/19 17:28	BRF	
Trichloroethylene	ND	0.035	0.014		ND	0.19	0.076	0.702	9/10/19 17:28	BRF	
Trichlorofluoromethane (Freon 11)	0.20	0.14	0.020		1.1	0.79	0.11	0.702	9/10/19 17:28	BRF	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14	0.021		ND	1.1	0.16	0.702	9/10/19 17:28	BRF	
1,2,4-Trimethylbenzene	0.063	0.035	0.022		0.31	0.17	0.11	0.702	9/10/19 17:28	BRF	
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.11	0.702	9/10/19 17:28	BRF	
Vinyl Acetate	ND	0.70	0.017		ND	2.5	0.059	0.702	9/10/19 17:28	BRF	
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.057	0.702	9/10/19 17:28	BRF	
m&p-Xylene	0.30	0.070	0.040		1.3	0.30	0.18	0.702	9/10/19 17:28	BRF	
o-Xylene	0.11	0.035	0.022		0.46	0.15	0.095	0.702	9/10/19 17:28	BRF	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	100	70-130	9/10/19 17:28
4-Bromofluorobenzene (2)	97.4	70-130	9/10/19 17:28

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: IA-3-090619**  
**Sample ID: 19I0227-03**  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 09:59

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1636  
 Canister Size: 6 liter  
 Flow Controller ID: 4213  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -3  
 Receipt Vacuum(in Hg): -3.3  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Acetone	3.6	1.4	0.49		8.5	3.3	1.2	0.702	9/10/19 18:04	BRF	
Benzene	0.15	0.035	0.014		0.48	0.11	0.046	0.702	9/10/19 18:04	BRF	
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.040	0.702	9/10/19 18:04	BRF	
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.087	0.702	9/10/19 18:04	BRF	
Bromoform	ND	0.035	0.016		ND	0.36	0.16	0.702	9/10/19 18:04	BRF	
Bromomethane	ND	0.35	0.024		ND	1.4	0.094	0.702	9/10/19 18:04	BRF	
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.049	0.702	9/10/19 18:04	BRF	
2-Butanone (MEK)	0.39	1.4	0.055	J	1.2	4.1	0.16	0.702	9/10/19 18:04	BRF	
Carbon Disulfide	ND	0.35	0.024		ND	1.1	0.075	0.702	9/10/19 18:04	BRF	
Carbon Tetrachloride	0.058	0.035	0.011		0.37	0.22	0.072	0.702	9/10/19 18:04	BRF	
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.079	0.702	9/10/19 18:04	BRF	
Chloroethane	ND	0.035	0.021		ND	0.093	0.056	0.702	9/10/19 18:04	BRF	
Chloroform	ND	0.035	0.013		ND	0.17	0.064	0.702	9/10/19 18:04	BRF	
Chloromethane	0.50	0.070	0.024		1.0	0.14	0.049	0.702	9/10/19 18:04	BRF	
Cyclohexane	ND	0.035	0.025		ND	0.12	0.086	0.702	9/10/19 18:04	BRF	
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.099	0.702	9/10/19 18:04	BRF	
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.11	0.702	9/10/19 18:04	BRF	
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.10	0.702	9/10/19 18:04	BRF	
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.11	0.702	9/10/19 18:04	BRF	
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.13	0.702	9/10/19 18:04	BRF	
Dichlorodifluoromethane (Freon 12)	ND	0.035	0.015		ND	0.17	0.075	0.702	9/10/19 18:04	BRF	
1,1-Dichloroethane	ND	0.035	0.011		ND	0.14	0.043	0.702	9/10/19 18:04	BRF	
1,2-Dichloroethane	ND	0.035	0.013		ND	0.14	0.054	0.702	9/10/19 18:04	BRF	
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 18:04	BRF	
cis-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.057	0.702	9/10/19 18:04	BRF	
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 18:04	BRF	
1,2-Dichloropropane	0.28	0.035	0.012		1.3	0.16	0.057	0.702	9/10/19 18:04	BRF	
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.056	0.702	9/10/19 18:04	BRF	
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.058	0.702	9/10/19 18:04	BRF	
Ethanol	12	1.4	0.63	V-05	24	2.6	1.2	0.702	9/10/19 18:04	BRF	
Ethyl Acetate	0.94	0.035	0.026		3.4	0.13	0.094	0.702	9/10/19 18:04	BRF	
Ethylbenzene	0.15	0.035	0.020		0.66	0.15	0.088	0.702	9/10/19 18:04	BRF	
4-Ethyltoluene	0.081	0.035	0.021		0.40	0.17	0.11	0.702	9/10/19 18:04	BRF	
Heptane	0.15	0.035	0.021		0.63	0.14	0.085	0.702	9/10/19 18:04	BRF	
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.17	0.702	9/10/19 18:04	BRF	
Hexane	0.12	1.4	0.062	J	0.42	4.9	0.22	0.702	9/10/19 18:04	BRF	
2-Hexanone (MBK)	ND	0.035	0.021		ND	0.14	0.085	0.702	9/10/19 18:04	BRF	
Isopropanol	1.9	1.4	0.043	V-05	4.6	3.4	0.11	0.702	9/10/19 18:04	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.018		ND	0.13	0.063	0.702	9/10/19 18:04	BRF	
Methylene Chloride	0.15	0.35	0.043	J	0.54	1.2	0.15	0.702	9/10/19 18:04	BRF	
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.082	0.702	9/10/19 18:04	BRF	
4-Methyl-2-pentanone (MIBK)	0.21	0.035	0.017		0.87	0.14	0.069	0.702	9/10/19 18:04	BRF	
Propene	ND	1.4	0.035		ND	2.4	0.060	0.702	9/10/19 18:04	BRF	
Styrene	ND	0.035	0.022		ND	0.15	0.092	0.702	9/10/19 18:04	BRF	
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.16	0.702	9/10/19 18:04	BRF	
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.11	0.702	9/10/19 18:04	BRF	
Tetrachloroethylene	0.031	0.035	0.020	J	0.21	0.24	0.13	0.702	9/10/19 18:04	BRF	



**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: IA-3-090619**  
**Sample ID: 19I0227-03**  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 09:59

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1636  
 Canister Size: 6 liter  
 Flow Controller ID: 4213  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -3  
 Receipt Vacuum(in Hg): -3.3  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Tetrahydrofuran	ND	0.035	0.023		ND	0.10	0.069	0.702	9/10/19 18:04	BRF	
Toluene	1.9	0.035	0.018		7.1	0.13	0.068	0.702	9/10/19 18:04	BRF	
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.18	0.702	9/10/19 18:04	BRF	
1,1,1-Trichloroethane	ND	0.035	0.013		ND	0.19	0.072	0.702	9/10/19 18:04	BRF	
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.079	0.702	9/10/19 18:04	BRF	
Trichloroethylene	0.038	0.035	0.014		0.20	0.19	0.076	0.702	9/10/19 18:04	BRF	
Trichlorofluoromethane (Freon 11)	0.22	0.14	0.020		1.2	0.79	0.11	0.702	9/10/19 18:04	BRF	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14	0.021		ND	1.1	0.16	0.702	9/10/19 18:04	BRF	
1,2,4-Trimethylbenzene	0.079	0.035	0.022		0.39	0.17	0.11	0.702	9/10/19 18:04	BRF	
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.11	0.702	9/10/19 18:04	BRF	
Vinyl Acetate	ND	0.70	0.017		ND	2.5	0.059	0.702	9/10/19 18:04	BRF	
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.057	0.702	9/10/19 18:04	BRF	
m&p-Xylene	0.53	0.070	0.040		2.3	0.30	0.18	0.702	9/10/19 18:04	BRF	
o-Xylene	0.17	0.035	0.022		0.74	0.15	0.095	0.702	9/10/19 18:04	BRF	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	101	70-130	9/10/19 18:04
4-Bromofluorobenzene (2)	98.0	70-130	9/10/19 18:04

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: IA-4-090619**  
**Sample ID: 1910227-04**  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 09:57

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1247  
 Canister Size: 6 liter  
 Flow Controller ID: 4101  
 Sample Type: 30 min

**Work Order: 1910227**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -10  
 Receipt Vacuum(in Hg): -12.2  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Acetone	2.5	1.6	0.56		5.9	3.8	1.3	0.8	9/10/19 18:41	BRF	
Benzene	0.13	0.040	0.016		0.43	0.13	0.053	0.8	9/10/19 18:41	BRF	
Benzyl chloride	ND	0.040	0.0088		ND	0.21	0.046	0.8	9/10/19 18:41	BRF	
Bromodichloromethane	ND	0.040	0.015		ND	0.27	0.099	0.8	9/10/19 18:41	BRF	
Bromoform	ND	0.040	0.018		ND	0.41	0.19	0.8	9/10/19 18:41	BRF	
Bromomethane	ND	0.40	0.028		ND	1.6	0.11	0.8	9/10/19 18:41	BRF	
1,3-Butadiene	ND	0.040	0.025		ND	0.088	0.056	0.8	9/10/19 18:41	BRF	
2-Butanone (MEK)	0.18	1.6	0.062	J	0.52	4.7	0.18	0.8	9/10/19 18:41	BRF	
Carbon Disulfide	ND	0.40	0.027		ND	1.2	0.085	0.8	9/10/19 18:41	BRF	
Carbon Tetrachloride	0.058	0.040	0.013		0.37	0.25	0.082	0.8	9/10/19 18:41	BRF	
Chlorobenzene	ND	0.040	0.020		ND	0.18	0.090	0.8	9/10/19 18:41	BRF	
Chloroethane	ND	0.040	0.024		ND	0.11	0.064	0.8	9/10/19 18:41	BRF	
Chloroform	ND	0.040	0.015		ND	0.20	0.073	0.8	9/10/19 18:41	BRF	
Chloromethane	0.57	0.080	0.027		1.2	0.17	0.056	0.8	9/10/19 18:41	BRF	
Cyclohexane	ND	0.040	0.028		ND	0.14	0.098	0.8	9/10/19 18:41	BRF	
Dibromochloromethane	ND	0.040	0.013		ND	0.34	0.11	0.8	9/10/19 18:41	BRF	
1,2-Dibromoethane (EDB)	ND	0.040	0.016		ND	0.31	0.12	0.8	9/10/19 18:41	BRF	
1,2-Dichlorobenzene	ND	0.040	0.019		ND	0.24	0.12	0.8	9/10/19 18:41	BRF	
1,3-Dichlorobenzene	ND	0.040	0.021		ND	0.24	0.12	0.8	9/10/19 18:41	BRF	
1,4-Dichlorobenzene	ND	0.040	0.024		ND	0.24	0.15	0.8	9/10/19 18:41	BRF	
Dichlorodifluoromethane (Freon 12)	0.30	0.040	0.017		1.5	0.20	0.086	0.8	9/10/19 18:41	BRF	
1,1-Dichloroethane	ND	0.040	0.012		ND	0.16	0.049	0.8	9/10/19 18:41	BRF	
1,2-Dichloroethane	ND	0.040	0.015		ND	0.16	0.062	0.8	9/10/19 18:41	BRF	
1,1-Dichloroethylene	ND	0.040	0.016		ND	0.16	0.064	0.8	9/10/19 18:41	BRF	
cis-1,2-Dichloroethylene	ND	0.040	0.016		ND	0.16	0.065	0.8	9/10/19 18:41	BRF	
trans-1,2-Dichloroethylene	ND	0.040	0.016		ND	0.16	0.064	0.8	9/10/19 18:41	BRF	
1,2-Dichloropropane	ND	0.040	0.014		ND	0.18	0.065	0.8	9/10/19 18:41	BRF	
cis-1,3-Dichloropropene	ND	0.040	0.014		ND	0.18	0.064	0.8	9/10/19 18:41	BRF	
trans-1,3-Dichloropropene	ND	0.040	0.015		ND	0.18	0.066	0.8	9/10/19 18:41	BRF	
Ethanol	12	1.6	0.71	V-05	22	3.0	1.3	0.8	9/10/19 18:41	BRF	
Ethyl Acetate	ND	0.040	0.030		ND	0.14	0.11	0.8	9/10/19 18:41	BRF	
Ethylbenzene	0.089	0.040	0.023		0.39	0.17	0.10	0.8	9/10/19 18:41	BRF	
4-Ethyltoluene	ND	0.040	0.024		ND	0.20	0.12	0.8	9/10/19 18:41	BRF	
Heptane	0.14	0.040	0.024		0.56	0.16	0.096	0.8	9/10/19 18:41	BRF	
Hexachlorobutadiene	ND	0.040	0.018		ND	0.43	0.20	0.8	9/10/19 18:41	BRF	
Hexane	0.078	1.6	0.071	J	0.28	5.6	0.25	0.8	9/10/19 18:41	BRF	
2-Hexanone (MBK)	ND	0.040	0.024		ND	0.16	0.097	0.8	9/10/19 18:41	BRF	
Isopropanol	0.36	1.6	0.049	V-05, J	0.87	3.9	0.12	0.8	9/10/19 18:41	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.040	0.020		ND	0.14	0.072	0.8	9/10/19 18:41	BRF	
Methylene Chloride	0.12	0.40	0.049	J	0.43	1.4	0.17	0.8	9/10/19 18:41	BRF	
Methyl methacrylate	ND	0.040	0.023		ND	0.16	0.093	0.8	9/10/19 18:41	BRF	
4-Methyl-2-pentanone (MIBK)	ND	0.040	0.019		ND	0.16	0.079	0.8	9/10/19 18:41	BRF	
Propene	ND	1.6	0.040		ND	2.8	0.068	0.8	9/10/19 18:41	BRF	
Styrene	ND	0.040	0.025		ND	0.17	0.11	0.8	9/10/19 18:41	BRF	
1,1,1,2-Tetrachloroethane	ND	0.073	0.026		ND	0.50	0.18	0.8	9/10/19 18:41	BRF	
1,1,2,2-Tetrachloroethane	ND	0.040	0.018		ND	0.27	0.12	0.8	9/10/19 18:41	BRF	
Tetrachloroethylene	ND	0.040	0.022		ND	0.27	0.15	0.8	9/10/19 18:41	BRF	

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: IA-4-090619**  
**Sample ID: 19I0227-04**  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 09:57

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1247  
 Canister Size: 6 liter  
 Flow Controller ID: 4101  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -10  
 Receipt Vacuum(in Hg): -12.2  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Tetrahydrofuran	ND	0.040	0.027		ND	0.12	0.078	0.8	9/10/19 18:41	BRF	
Toluene	0.37	0.040	0.021		1.4	0.15	0.078	0.8	9/10/19 18:41	BRF	
1,2,4-Trichlorobenzene	ND	0.040	0.028		ND	0.30	0.20	0.8	9/10/19 18:41	BRF	
1,1,1-Trichloroethane	ND	0.040	0.015		ND	0.22	0.082	0.8	9/10/19 18:41	BRF	
1,1,2-Trichloroethane	ND	0.040	0.016		ND	0.22	0.090	0.8	9/10/19 18:41	BRF	
Trichloroethylene	ND	0.040	0.016		ND	0.21	0.087	0.8	9/10/19 18:41	BRF	
Trichlorofluoromethane (Freon 11)	0.21	0.16	0.023		1.2	0.90	0.13	0.8	9/10/19 18:41	BRF	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.055	0.16	0.024	J	0.42	1.2	0.19	0.8	9/10/19 18:41	BRF	
1,2,4-Trimethylbenzene	0.055	0.040	0.026		0.27	0.20	0.13	0.8	9/10/19 18:41	BRF	
1,3,5-Trimethylbenzene	ND	0.040	0.025		ND	0.20	0.12	0.8	9/10/19 18:41	BRF	
Vinyl Acetate	ND	0.80	0.019		ND	2.8	0.067	0.8	9/10/19 18:41	BRF	
Vinyl Chloride	ND	0.040	0.025		ND	0.10	0.064	0.8	9/10/19 18:41	BRF	
m&p-Xylene	0.29	0.080	0.046		1.2	0.35	0.20	0.8	9/10/19 18:41	BRF	
o-Xylene	0.10	0.040	0.025		0.44	0.17	0.11	0.8	9/10/19 18:41	BRF	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	101	70-130	9/10/19 18:41
4-Bromofluorobenzene (2)	98.4	70-130	9/10/19 18:41

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: IA-5-090619**  
**Sample ID: 19I0227-05**  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 08:31

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1334  
 Canister Size: 6 liter  
 Flow Controller ID: 4304  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -5.5  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Acetone	2.6	1.4	0.49		6.1	3.3	1.2	0.702	9/10/19 19:16	BRF	
Benzene	0.13	0.035	0.014		0.41	0.11	0.046	0.702	9/10/19 19:16	BRF	
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.040	0.702	9/10/19 19:16	BRF	
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.087	0.702	9/10/19 19:16	BRF	
Bromoform	ND	0.035	0.016		ND	0.36	0.16	0.702	9/10/19 19:16	BRF	
Bromomethane	ND	0.35	0.024		ND	1.4	0.094	0.702	9/10/19 19:16	BRF	
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.049	0.702	9/10/19 19:16	BRF	
2-Butanone (MEK)	0.12	1.4	0.055	J	0.37	4.1	0.16	0.702	9/10/19 19:16	BRF	
Carbon Disulfide	ND	0.35	0.024		ND	1.1	0.075	0.702	9/10/19 19:16	BRF	
Carbon Tetrachloride	0.059	0.035	0.011		0.37	0.22	0.072	0.702	9/10/19 19:16	BRF	
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.079	0.702	9/10/19 19:16	BRF	
Chloroethane	ND	0.035	0.021		ND	0.093	0.056	0.702	9/10/19 19:16	BRF	
Chloroform	0.049	0.035	0.013		0.24	0.17	0.064	0.702	9/10/19 19:16	BRF	
Chloromethane	0.47	0.070	0.024		0.97	0.14	0.049	0.702	9/10/19 19:16	BRF	
Cyclohexane	ND	0.035	0.025		ND	0.12	0.086	0.702	9/10/19 19:16	BRF	
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.099	0.702	9/10/19 19:16	BRF	
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.11	0.702	9/10/19 19:16	BRF	
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.10	0.702	9/10/19 19:16	BRF	
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.11	0.702	9/10/19 19:16	BRF	
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.13	0.702	9/10/19 19:16	BRF	
Dichlorodifluoromethane (Freon 12)	0.32	0.035	0.015		1.6	0.17	0.075	0.702	9/10/19 19:16	BRF	
1,1-Dichloroethane	ND	0.035	0.011		ND	0.14	0.043	0.702	9/10/19 19:16	BRF	
1,2-Dichloroethane	ND	0.035	0.013		ND	0.14	0.054	0.702	9/10/19 19:16	BRF	
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 19:16	BRF	
cis-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.057	0.702	9/10/19 19:16	BRF	
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 19:16	BRF	
1,2-Dichloropropane	ND	0.035	0.012		ND	0.16	0.057	0.702	9/10/19 19:16	BRF	
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.056	0.702	9/10/19 19:16	BRF	
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.058	0.702	9/10/19 19:16	BRF	
Ethanol	13	1.4	0.63	V-05	24	2.6	1.2	0.702	9/10/19 19:16	BRF	
Ethyl Acetate	ND	0.035	0.026		ND	0.13	0.094	0.702	9/10/19 19:16	BRF	
Ethylbenzene	ND	0.035	0.020		ND	0.15	0.088	0.702	9/10/19 19:16	BRF	
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.11	0.702	9/10/19 19:16	BRF	
Heptane	0.086	0.035	0.021		0.35	0.14	0.085	0.702	9/10/19 19:16	BRF	
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.17	0.702	9/10/19 19:16	BRF	
Hexane	ND	1.4	0.062		ND	4.9	0.22	0.702	9/10/19 19:16	BRF	
2-Hexanone (MBK)	ND	0.035	0.021		ND	0.14	0.085	0.702	9/10/19 19:16	BRF	
Isopropanol	0.64	1.4	0.043	V-05, J	1.6	3.4	0.11	0.702	9/10/19 19:16	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.018		ND	0.13	0.063	0.702	9/10/19 19:16	BRF	
Methylene Chloride	0.11	0.35	0.043	J	0.38	1.2	0.15	0.702	9/10/19 19:16	BRF	
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.082	0.702	9/10/19 19:16	BRF	
4-Methyl-2-pentanone (MIBK)	ND	0.035	0.017		ND	0.14	0.069	0.702	9/10/19 19:16	BRF	
Propene	ND	1.4	0.035		ND	2.4	0.060	0.702	9/10/19 19:16	BRF	
Styrene	ND	0.035	0.022		ND	0.15	0.092	0.702	9/10/19 19:16	BRF	
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.16	0.702	9/10/19 19:16	BRF	
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.11	0.702	9/10/19 19:16	BRF	
Tetrachloroethylene	0.12	0.035	0.020		0.82	0.24	0.13	0.702	9/10/19 19:16	BRF	

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: IA-5-090619**  
**Sample ID: 19I0227-05**  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 08:31

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1334  
 Canister Size: 6 liter  
 Flow Controller ID: 4304  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -5.5  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Tetrahydrofuran	ND	0.035	0.023		ND	0.10	0.069	0.702	9/10/19 19:16	BRF	
Toluene	1.5	0.035	0.018		5.7	0.13	0.068	0.702	9/10/19 19:16	BRF	
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.18	0.702	9/10/19 19:16	BRF	
1,1,1-Trichloroethane	ND	0.035	0.013		ND	0.19	0.072	0.702	9/10/19 19:16	BRF	
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.079	0.702	9/10/19 19:16	BRF	
Trichloroethylene	0.084	0.035	0.014		0.45	0.19	0.076	0.702	9/10/19 19:16	BRF	
Trichlorofluoromethane (Freon 11)	0.21	0.14	0.020		1.2	0.79	0.11	0.702	9/10/19 19:16	BRF	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14	0.021		ND	1.1	0.16	0.702	9/10/19 19:16	BRF	
1,2,4-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.11	0.702	9/10/19 19:16	BRF	
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.11	0.702	9/10/19 19:16	BRF	
Vinyl Acetate	ND	0.70	0.017		ND	2.5	0.059	0.702	9/10/19 19:16	BRF	
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.057	0.702	9/10/19 19:16	BRF	
m&p-Xylene	0.084	0.070	0.040		0.36	0.30	0.18	0.702	9/10/19 19:16	BRF	
o-Xylene	ND	0.035	0.022		ND	0.15	0.095	0.702	9/10/19 19:16	BRF	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	99.9	70-130	9/10/19 19:16
4-Bromofluorobenzene (2)	97.2	70-130	9/10/19 19:16

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: IA-6-090619**  
**Sample ID: 19I0227-06**  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 08:29

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1174  
 Canister Size: 6 liter  
 Flow Controller ID: 4194  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -4  
 Receipt Vacuum(in Hg): -4.2  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Acetone	4.6	1.4	0.49		11	3.3	1.2	0.702	9/10/19 19:52	BRF	
Benzene	0.15	0.035	0.014		0.48	0.11	0.046	0.702	9/10/19 19:52	BRF	
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.040	0.702	9/10/19 19:52	BRF	
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.087	0.702	9/10/19 19:52	BRF	
Bromoform	ND	0.035	0.016		ND	0.36	0.16	0.702	9/10/19 19:52	BRF	
Bromomethane	ND	0.35	0.024		ND	1.4	0.094	0.702	9/10/19 19:52	BRF	
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.049	0.702	9/10/19 19:52	BRF	
2-Butanone (MEK)	0.29	1.4	0.055	J	0.85	4.1	0.16	0.702	9/10/19 19:52	BRF	
Carbon Disulfide	ND	0.35	0.024		ND	1.1	0.075	0.702	9/10/19 19:52	BRF	
Carbon Tetrachloride	0.056	0.035	0.011		0.35	0.22	0.072	0.702	9/10/19 19:52	BRF	
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.079	0.702	9/10/19 19:52	BRF	
Chloroethane	ND	0.035	0.021		ND	0.093	0.056	0.702	9/10/19 19:52	BRF	
Chloroform	ND	0.035	0.013		ND	0.17	0.064	0.702	9/10/19 19:52	BRF	
Chloromethane	0.50	0.070	0.024		1.0	0.14	0.049	0.702	9/10/19 19:52	BRF	
Cyclohexane	ND	0.035	0.025		ND	0.12	0.086	0.702	9/10/19 19:52	BRF	
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.099	0.702	9/10/19 19:52	BRF	
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.11	0.702	9/10/19 19:52	BRF	
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.10	0.702	9/10/19 19:52	BRF	
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.11	0.702	9/10/19 19:52	BRF	
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.13	0.702	9/10/19 19:52	BRF	
Dichlorodifluoromethane (Freon 12)	0.34	0.035	0.015		1.7	0.17	0.075	0.702	9/10/19 19:52	BRF	
1,1-Dichloroethane	ND	0.035	0.011		ND	0.14	0.043	0.702	9/10/19 19:52	BRF	
1,2-Dichloroethane	ND	0.035	0.013		ND	0.14	0.054	0.702	9/10/19 19:52	BRF	
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 19:52	BRF	
cis-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.057	0.702	9/10/19 19:52	BRF	
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 19:52	BRF	
1,2-Dichloropropane	ND	0.035	0.012		ND	0.16	0.057	0.702	9/10/19 19:52	BRF	
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.056	0.702	9/10/19 19:52	BRF	
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.058	0.702	9/10/19 19:52	BRF	
Ethanol	16	1.4	0.63	V-05	30	2.6	1.2	0.702	9/10/19 19:52	BRF	
Ethyl Acetate	ND	0.035	0.026		ND	0.13	0.094	0.702	9/10/19 19:52	BRF	
Ethylbenzene	0.072	0.035	0.020		0.31	0.15	0.088	0.702	9/10/19 19:52	BRF	
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.11	0.702	9/10/19 19:52	BRF	
Heptane	0.12	0.035	0.021		0.51	0.14	0.085	0.702	9/10/19 19:52	BRF	
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.17	0.702	9/10/19 19:52	BRF	
Hexane	0.10	1.4	0.062	J	0.35	4.9	0.22	0.702	9/10/19 19:52	BRF	
2-Hexanone (MBK)	ND	0.035	0.021		ND	0.14	0.085	0.702	9/10/19 19:52	BRF	
Isopropanol	1.6	1.4	0.043	V-05	3.9	3.4	0.11	0.702	9/10/19 19:52	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.018		ND	0.13	0.063	0.702	9/10/19 19:52	BRF	
Methylene Chloride	0.11	0.35	0.043	J	0.39	1.2	0.15	0.702	9/10/19 19:52	BRF	
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.082	0.702	9/10/19 19:52	BRF	
4-Methyl-2-pentanone (MIBK)	ND	0.035	0.017		ND	0.14	0.069	0.702	9/10/19 19:52	BRF	
Propene	ND	1.4	0.035		ND	2.4	0.060	0.702	9/10/19 19:52	BRF	
Styrene	ND	0.035	0.022		ND	0.15	0.092	0.702	9/10/19 19:52	BRF	
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.16	0.702	9/10/19 19:52	BRF	
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.11	0.702	9/10/19 19:52	BRF	
Tetrachloroethylene	0.38	0.035	0.020		2.6	0.24	0.13	0.702	9/10/19 19:52	BRF	

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: IA-6-090619**  
**Sample ID: 19I0227-06**  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 08:29

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1174  
 Canister Size: 6 liter  
 Flow Controller ID: 4194  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -4  
 Receipt Vacuum(in Hg): -4.2  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Tetrahydrofuran	ND	0.035	0.023		ND	0.10	0.069	0.702	9/10/19 19:52	BRF	
Toluene	1.1	0.035	0.018		4.2	0.13	0.068	0.702	9/10/19 19:52	BRF	
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.18	0.702	9/10/19 19:52	BRF	
1,1,1-Trichloroethane	0.071	0.035	0.013		0.39	0.19	0.072	0.702	9/10/19 19:52	BRF	
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.079	0.702	9/10/19 19:52	BRF	
Trichloroethylene	0.28	0.035	0.014		1.5	0.19	0.076	0.702	9/10/19 19:52	BRF	
Trichlorofluoromethane (Freon 11)	0.22	0.14	0.020		1.2	0.79	0.11	0.702	9/10/19 19:52	BRF	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14	0.021		ND	1.1	0.16	0.702	9/10/19 19:52	BRF	
1,2,4-Trimethylbenzene	0.060	0.035	0.022		0.29	0.17	0.11	0.702	9/10/19 19:52	BRF	
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.11	0.702	9/10/19 19:52	BRF	
Vinyl Acetate	ND	0.70	0.017		ND	2.5	0.059	0.702	9/10/19 19:52	BRF	
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.057	0.702	9/10/19 19:52	BRF	
m&p-Xylene	0.21	0.070	0.040		0.90	0.30	0.18	0.702	9/10/19 19:52	BRF	
o-Xylene	0.075	0.035	0.022		0.33	0.15	0.095	0.702	9/10/19 19:52	BRF	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	101	70-130	9/10/19 19:52
4-Bromofluorobenzene (2)	97.9	70-130	9/10/19 19:52

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: IA-7-090619**  
**Sample ID: 19I0227-07**  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 08:21

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1100  
 Canister Size: 6 liter  
 Flow Controller ID: 4067  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -7  
 Receipt Vacuum(in Hg): -6.8  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Acetone	7.6	1.4	0.49		18	3.3	1.2	0.702	9/10/19 20:27	BRF	
Benzene	0.12	0.035	0.014		0.40	0.11	0.046	0.702	9/10/19 20:27	BRF	
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.040	0.702	9/10/19 20:27	BRF	
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.087	0.702	9/10/19 20:27	BRF	
Bromoform	ND	0.035	0.016		ND	0.36	0.16	0.702	9/10/19 20:27	BRF	
Bromomethane	ND	0.35	0.024		ND	1.4	0.094	0.702	9/10/19 20:27	BRF	
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.049	0.702	9/10/19 20:27	BRF	
2-Butanone (MEK)	0.39	1.4	0.055	J	1.1	4.1	0.16	0.702	9/10/19 20:27	BRF	
Carbon Disulfide	ND	0.35	0.024		ND	1.1	0.075	0.702	9/10/19 20:27	BRF	
Carbon Tetrachloride	0.068	0.035	0.011		0.43	0.22	0.072	0.702	9/10/19 20:27	BRF	
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.079	0.702	9/10/19 20:27	BRF	
Chloroethane	ND	0.035	0.021		ND	0.093	0.056	0.702	9/10/19 20:27	BRF	
Chloroform	0.070	0.035	0.013		0.34	0.17	0.064	0.702	9/10/19 20:27	BRF	
Chloromethane	ND	0.070	0.024		ND	0.14	0.049	0.702	9/10/19 20:27	BRF	
Cyclohexane	ND	0.035	0.025		ND	0.12	0.086	0.702	9/10/19 20:27	BRF	
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.099	0.702	9/10/19 20:27	BRF	
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.11	0.702	9/10/19 20:27	BRF	
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.10	0.702	9/10/19 20:27	BRF	
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.11	0.702	9/10/19 20:27	BRF	
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.13	0.702	9/10/19 20:27	BRF	
Dichlorodifluoromethane (Freon 12)	ND	0.035	0.015		ND	0.17	0.075	0.702	9/10/19 20:27	BRF	
1,1-Dichloroethane	ND	0.035	0.011		ND	0.14	0.043	0.702	9/10/19 20:27	BRF	
1,2-Dichloroethane	0.11	0.035	0.013		0.46	0.14	0.054	0.702	9/10/19 20:27	BRF	
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 20:27	BRF	
cis-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.057	0.702	9/10/19 20:27	BRF	
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 20:27	BRF	
1,2-Dichloropropane	0.17	0.035	0.012		0.80	0.16	0.057	0.702	9/10/19 20:27	BRF	
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.056	0.702	9/10/19 20:27	BRF	
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.058	0.702	9/10/19 20:27	BRF	
Ethanol	110	20	8.9	V-05	200	38	17	10	9/11/19 8:47	BRF	
Ethyl Acetate	ND	0.035	0.026		ND	0.13	0.094	0.702	9/10/19 20:27	BRF	
Ethylbenzene	0.11	0.035	0.020		0.48	0.15	0.088	0.702	9/10/19 20:27	BRF	
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.11	0.702	9/10/19 20:27	BRF	
Heptane	0.10	0.035	0.021		0.43	0.14	0.085	0.702	9/10/19 20:27	BRF	
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.17	0.702	9/10/19 20:27	BRF	
Hexane	ND	1.4	0.062		ND	4.9	0.22	0.702	9/10/19 20:27	BRF	
2-Hexanone (MBK)	ND	0.035	0.021		ND	0.14	0.085	0.702	9/10/19 20:27	BRF	
Isopropanol	7.2	1.4	0.043	V-05	18	3.4	0.11	0.702	9/10/19 20:27	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.018		ND	0.13	0.063	0.702	9/10/19 20:27	BRF	
Methylene Chloride	0.11	0.35	0.043	J	0.40	1.2	0.15	0.702	9/10/19 20:27	BRF	
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.082	0.702	9/10/19 20:27	BRF	
4-Methyl-2-pentanone (MIBK)	ND	0.035	0.017		ND	0.14	0.069	0.702	9/10/19 20:27	BRF	
Propene	ND	1.4	0.035		ND	2.4	0.060	0.702	9/10/19 20:27	BRF	
Styrene	0.079	0.035	0.022		0.33	0.15	0.092	0.702	9/10/19 20:27	BRF	
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.16	0.702	9/10/19 20:27	BRF	
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.11	0.702	9/10/19 20:27	BRF	
Tetrachloroethylene	0.23	0.035	0.020		1.6	0.24	0.13	0.702	9/10/19 20:27	BRF	



**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: IA-7-090619**  
**Sample ID: 19I0227-07**  
 Sample Matrix: Indoor air  
 Sampled: 9/6/2019 08:21

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1100  
 Canister Size: 6 liter  
 Flow Controller ID: 4067  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -7  
 Receipt Vacuum(in Hg): -6.8  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Tetrahydrofuran	ND	0.035	0.023		ND	0.10	0.069	0.702	9/10/19 20:27	BRF	
Toluene	1.0	0.035	0.018		3.9	0.13	0.068	0.702	9/10/19 20:27	BRF	
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.18	0.702	9/10/19 20:27	BRF	
1,1,1-Trichloroethane	ND	0.035	0.013		ND	0.19	0.072	0.702	9/10/19 20:27	BRF	
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.079	0.702	9/10/19 20:27	BRF	
Trichloroethylene	0.079	0.035	0.014		0.43	0.19	0.076	0.702	9/10/19 20:27	BRF	
Trichlorofluoromethane (Freon 11)	0.21	0.14	0.020		1.2	0.79	0.11	0.702	9/10/19 20:27	BRF	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14	0.021		ND	1.1	0.16	0.702	9/10/19 20:27	BRF	
1,2,4-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.11	0.702	9/10/19 20:27	BRF	
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.11	0.702	9/10/19 20:27	BRF	
Vinyl Acetate	ND	0.70	0.017		ND	2.5	0.059	0.702	9/10/19 20:27	BRF	
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.057	0.702	9/10/19 20:27	BRF	
m&p-Xylene	0.34	0.070	0.040		1.5	0.30	0.18	0.702	9/10/19 20:27	BRF	
o-Xylene	0.12	0.035	0.022		0.51	0.15	0.095	0.702	9/10/19 20:27	BRF	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	102	70-130	9/10/19 20:27
4-Bromofluorobenzene (1)	98.1	70-130	9/11/19 8:47
4-Bromofluorobenzene (2)	99.1	70-130	9/10/19 20:27

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: AA-1-090619**  
**Sample ID: 1910227-08**  
 Sample Matrix: Ambient Air  
 Sampled: 9/6/2019 10:05

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1322  
 Canister Size: 6 liter  
 Flow Controller ID: 4283  
 Sample Type: 30 min

**Work Order: 1910227**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -4.5  
 Receipt Vacuum(in Hg): -5  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Acetone	2.1	1.4	0.49		5.1	3.3	1.2	0.702	9/10/19 21:03	BRF	
Benzene	0.074	0.035	0.014		0.24	0.11	0.046	0.702	9/10/19 21:03	BRF	
Benzyl chloride	ND	0.035	0.0077		ND	0.18	0.040	0.702	9/10/19 21:03	BRF	
Bromodichloromethane	ND	0.035	0.013		ND	0.24	0.087	0.702	9/10/19 21:03	BRF	
Bromoform	ND	0.035	0.016		ND	0.36	0.16	0.702	9/10/19 21:03	BRF	
Bromomethane	ND	0.35	0.024		ND	1.4	0.094	0.702	9/10/19 21:03	BRF	
1,3-Butadiene	ND	0.035	0.022		ND	0.078	0.049	0.702	9/10/19 21:03	BRF	
2-Butanone (MEK)	0.21	1.4	0.055	J	0.63	4.1	0.16	0.702	9/10/19 21:03	BRF	
Carbon Disulfide	ND	0.35	0.024		ND	1.1	0.075	0.702	9/10/19 21:03	BRF	
Carbon Tetrachloride	0.062	0.035	0.011		0.39	0.22	0.072	0.702	9/10/19 21:03	BRF	
Chlorobenzene	ND	0.035	0.017		ND	0.16	0.079	0.702	9/10/19 21:03	BRF	
Chloroethane	ND	0.035	0.021		ND	0.093	0.056	0.702	9/10/19 21:03	BRF	
Chloroform	ND	0.035	0.013		ND	0.17	0.064	0.702	9/10/19 21:03	BRF	
Chloromethane	0.42	0.070	0.024		0.87	0.14	0.049	0.702	9/10/19 21:03	BRF	
Cyclohexane	ND	0.035	0.025		ND	0.12	0.086	0.702	9/10/19 21:03	BRF	
Dibromochloromethane	ND	0.035	0.012		ND	0.30	0.099	0.702	9/10/19 21:03	BRF	
1,2-Dibromoethane (EDB)	ND	0.035	0.014		ND	0.27	0.11	0.702	9/10/19 21:03	BRF	
1,2-Dichlorobenzene	ND	0.035	0.017		ND	0.21	0.10	0.702	9/10/19 21:03	BRF	
1,3-Dichlorobenzene	ND	0.035	0.018		ND	0.21	0.11	0.702	9/10/19 21:03	BRF	
1,4-Dichlorobenzene	ND	0.035	0.021		ND	0.21	0.13	0.702	9/10/19 21:03	BRF	
Dichlorodifluoromethane (Freon 12)	0.33	0.035	0.015		1.7	0.17	0.075	0.702	9/10/19 21:03	BRF	
1,1-Dichloroethane	ND	0.035	0.011		ND	0.14	0.043	0.702	9/10/19 21:03	BRF	
1,2-Dichloroethane	ND	0.035	0.013		ND	0.14	0.054	0.702	9/10/19 21:03	BRF	
1,1-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 21:03	BRF	
cis-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.057	0.702	9/10/19 21:03	BRF	
trans-1,2-Dichloroethylene	ND	0.035	0.014		ND	0.14	0.056	0.702	9/10/19 21:03	BRF	
1,2-Dichloropropane	ND	0.035	0.012		ND	0.16	0.057	0.702	9/10/19 21:03	BRF	
cis-1,3-Dichloropropene	ND	0.035	0.012		ND	0.16	0.056	0.702	9/10/19 21:03	BRF	
trans-1,3-Dichloropropene	ND	0.035	0.013		ND	0.16	0.058	0.702	9/10/19 21:03	BRF	
Ethanol	3.1	1.4	0.63	V-05	5.9	2.6	1.2	0.702	9/10/19 21:03	BRF	
Ethyl Acetate	ND	0.035	0.026		ND	0.13	0.094	0.702	9/10/19 21:03	BRF	
Ethylbenzene	0.039	0.035	0.020		0.17	0.15	0.088	0.702	9/10/19 21:03	BRF	
4-Ethyltoluene	ND	0.035	0.021		ND	0.17	0.11	0.702	9/10/19 21:03	BRF	
Heptane	ND	0.035	0.021		ND	0.14	0.085	0.702	9/10/19 21:03	BRF	
Hexachlorobutadiene	ND	0.035	0.016		ND	0.37	0.17	0.702	9/10/19 21:03	BRF	
Hexane	ND	1.4	0.062		ND	4.9	0.22	0.702	9/10/19 21:03	BRF	
2-Hexanone (MBK)	ND	0.035	0.021		ND	0.14	0.085	0.702	9/10/19 21:03	BRF	
Isopropanol	0.075	1.4	0.043	V-05, J	0.18	3.4	0.11	0.702	9/10/19 21:03	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.035	0.018		ND	0.13	0.063	0.702	9/10/19 21:03	BRF	
Methylene Chloride	0.081	0.35	0.043	J	0.28	1.2	0.15	0.702	9/10/19 21:03	BRF	
Methyl methacrylate	ND	0.035	0.020		ND	0.14	0.082	0.702	9/10/19 21:03	BRF	
4-Methyl-2-pentanone (MIBK)	ND	0.035	0.017		ND	0.14	0.069	0.702	9/10/19 21:03	BRF	
Propene	ND	1.4	0.035		ND	2.4	0.060	0.702	9/10/19 21:03	BRF	
Styrene	ND	0.035	0.022		ND	0.15	0.092	0.702	9/10/19 21:03	BRF	
1,1,1,2-Tetrachloroethane	ND	0.064	0.023		ND	0.44	0.16	0.702	9/10/19 21:03	BRF	
1,1,2,2-Tetrachloroethane	ND	0.035	0.016		ND	0.24	0.11	0.702	9/10/19 21:03	BRF	
Tetrachloroethylene	0.10	0.035	0.020		0.68	0.24	0.13	0.702	9/10/19 21:03	BRF	

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: AA-1-090619**  
**Sample ID: 1910227-08**  
 Sample Matrix: Ambient Air  
 Sampled: 9/6/2019 10:05

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1322  
 Canister Size: 6 liter  
 Flow Controller ID: 4283  
 Sample Type: 30 min

**Work Order: 1910227**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -4.5  
 Receipt Vacuum(in Hg): -5  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Tetrahydrofuran	ND	0.035	0.023		ND	0.10	0.069	0.702	9/10/19 21:03	BRF	
Toluene	0.18	0.035	0.018		0.68	0.13	0.068	0.702	9/10/19 21:03	BRF	
1,2,4-Trichlorobenzene	ND	0.035	0.024		ND	0.26	0.18	0.702	9/10/19 21:03	BRF	
1,1,1-Trichloroethane	ND	0.035	0.013		ND	0.19	0.072	0.702	9/10/19 21:03	BRF	
1,1,2-Trichloroethane	ND	0.035	0.014		ND	0.19	0.079	0.702	9/10/19 21:03	BRF	
Trichloroethylene	0.062	0.035	0.014		0.34	0.19	0.076	0.702	9/10/19 21:03	BRF	
Trichlorofluoromethane (Freon 11)	0.22	0.14	0.020		1.2	0.79	0.11	0.702	9/10/19 21:03	BRF	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14	0.021		ND	1.1	0.16	0.702	9/10/19 21:03	BRF	
1,2,4-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.11	0.702	9/10/19 21:03	BRF	
1,3,5-Trimethylbenzene	ND	0.035	0.022		ND	0.17	0.11	0.702	9/10/19 21:03	BRF	
Vinyl Acetate	ND	0.70	0.017		ND	2.5	0.059	0.702	9/10/19 21:03	BRF	
Vinyl Chloride	ND	0.035	0.022		ND	0.090	0.057	0.702	9/10/19 21:03	BRF	
m&p-Xylene	0.13	0.070	0.040		0.57	0.30	0.18	0.702	9/10/19 21:03	BRF	
o-Xylene	0.051	0.035	0.022		0.22	0.15	0.095	0.702	9/10/19 21:03	BRF	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	99.9	70-130	9/10/19 21:03
4-Bromofluorobenzene (2)	97.1	70-130	9/10/19 21:03

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: Post Carbon-090619**  
**Sample ID: 1910227-09**  
 Sample Matrix: Soil Gas  
 Sampled: 9/6/2019 11:07

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1870  
 Canister Size: 6 liter  
 Flow Controller ID: 4365  
 Sample Type: 30 min

**Work Order: 1910227**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -11  
 Receipt Vacuum(in Hg): -11.7  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Acetone	30	4.0	1.4		71	9.5	3.3	2	9/10/19 21:34	BRF	
Benzene	0.50	0.10	0.041		1.6	0.32	0.13	2	9/10/19 21:34	BRF	
Benzyl chloride	ND	0.10	0.022		ND	0.52	0.11	2	9/10/19 21:34	BRF	
Bromodichloromethane	ND	0.10	0.037		ND	0.67	0.25	2	9/10/19 21:34	BRF	
Bromoform	ND	0.10	0.045		ND	1.0	0.47	2	9/10/19 21:34	BRF	
Bromomethane	ND	1.0	0.069		ND	3.9	0.27	2	9/10/19 21:34	BRF	
1,3-Butadiene	ND	0.10	0.063		ND	0.22	0.14	2	9/10/19 21:34	BRF	
2-Butanone (MEK)	9.1	4.0	0.16		27	12	0.46	2	9/10/19 21:34	BRF	
Carbon Disulfide	ND	1.0	0.069		ND	3.1	0.21	2	9/10/19 21:34	BRF	
Carbon Tetrachloride	ND	0.10	0.033		ND	0.63	0.21	2	9/10/19 21:34	BRF	
Chlorobenzene	ND	0.10	0.049		ND	0.46	0.23	2	9/10/19 21:34	BRF	
Chloroethane	ND	0.10	0.061		ND	0.26	0.16	2	9/10/19 21:34	BRF	
Chloroform	ND	0.10	0.037		ND	0.49	0.18	2	9/10/19 21:34	BRF	
Chloromethane	ND	0.20	0.068		ND	0.41	0.14	2	9/10/19 21:34	BRF	
Cyclohexane	ND	0.10	0.071		ND	0.34	0.24	2	9/10/19 21:34	BRF	
Dibromochloromethane	ND	0.10	0.033		ND	0.85	0.28	2	9/10/19 21:34	BRF	
1,2-Dibromoethane (EDB)	ND	0.10	0.039		ND	0.77	0.30	2	9/10/19 21:34	BRF	
1,2-Dichlorobenzene	ND	0.10	0.048		ND	0.60	0.29	2	9/10/19 21:34	BRF	
1,3-Dichlorobenzene	ND	0.10	0.052		ND	0.60	0.31	2	9/10/19 21:34	BRF	
1,4-Dichlorobenzene	ND	0.10	0.061		ND	0.60	0.37	2	9/10/19 21:34	BRF	
Dichlorodifluoromethane (Freon 12)	ND	0.10	0.043		ND	0.49	0.21	2	9/10/19 21:34	BRF	
1,1-Dichloroethane	0.69	0.10	0.030		2.8	0.40	0.12	2	9/10/19 21:34	BRF	
1,2-Dichloroethane	ND	0.10	0.038		ND	0.40	0.15	2	9/10/19 21:34	BRF	
1,1-Dichloroethylene	2.5	0.10	0.041		9.8	0.40	0.16	2	9/10/19 21:34	BRF	
cis-1,2-Dichloroethylene	0.58	0.10	0.041		2.3	0.40	0.16	2	9/10/19 21:34	BRF	
trans-1,2-Dichloroethylene	0.20	0.10	0.041		0.78	0.40	0.16	2	9/10/19 21:34	BRF	
1,2-Dichloropropane	24	0.10	0.035		110	0.46	0.16	2	9/10/19 21:34	BRF	
cis-1,3-Dichloropropene	ND	0.10	0.035		ND	0.45	0.16	2	9/10/19 21:34	BRF	
trans-1,3-Dichloropropene	ND	0.10	0.036		ND	0.45	0.17	2	9/10/19 21:34	BRF	
Ethanol	190	20	8.9	V-05	360	38	17	10	9/10/19 22:02	BRF	
Ethyl Acetate	51	0.10	0.075		180	0.36	0.27	2	9/10/19 21:34	BRF	
Ethylbenzene	7.7	0.10	0.058		33	0.43	0.25	2	9/10/19 21:34	BRF	
4-Ethyltoluene	1.9	0.10	0.061		9.5	0.49	0.30	2	9/10/19 21:34	BRF	
Heptane	3.6	0.10	0.059		15	0.41	0.24	2	9/10/19 21:34	BRF	
Hexachlorobutadiene	ND	0.10	0.046		ND	1.1	0.49	2	9/10/19 21:34	BRF	
Hexane	ND	4.0	0.18		ND	14	0.62	2	9/10/19 21:34	BRF	
2-Hexanone (MBK)	ND	0.10	0.059		ND	0.41	0.24	2	9/10/19 21:34	BRF	
Isopropanol	93	4.0	0.12	V-05	230	9.8	0.30	2	9/10/19 21:34	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.10	0.050		ND	0.36	0.18	2	9/10/19 21:34	BRF	
Methylene Chloride	2.9	1.0	0.12		10.0	3.5	0.42	2	9/10/19 21:34	BRF	
Methyl methacrylate	ND	0.10	0.057		ND	0.41	0.23	2	9/10/19 21:34	BRF	
4-Methyl-2-pentanone (MIBK)	6.9	0.10	0.048		28	0.41	0.20	2	9/10/19 21:34	BRF	
Propene	ND	4.0	0.099		ND	6.9	0.17	2	9/10/19 21:34	BRF	
Styrene	2.4	0.10	0.062		10	0.43	0.26	2	9/10/19 21:34	BRF	
1,1,1,2-Tetrachloroethane	ND	0.18	0.066		ND	1.2	0.45	2	9/10/19 21:34	BRF	
1,1,2,2-Tetrachloroethane	ND	0.10	0.044		ND	0.69	0.30	2	9/10/19 21:34	BRF	
Tetrachloroethylene	1.1	0.10	0.056		7.7	0.68	0.38	2	9/10/19 21:34	BRF	

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: Post Carbon-090619**  
**Sample ID: 1910227-09**  
 Sample Matrix: Soil Gas  
 Sampled: 9/6/2019 11:07

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1870  
 Canister Size: 6 liter  
 Flow Controller ID: 4365  
 Sample Type: 30 min

**Work Order: 1910227**  
 Initial Vacuum(in Hg): -27  
 Final Vacuum(in Hg): -11  
 Receipt Vacuum(in Hg): -11.7  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Tetrahydrofuran	ND	0.10	0.066		ND	0.29	0.20	2	9/10/19 21:34	BRF	
Toluene	90	0.10	0.052		340	0.38	0.19	2	9/10/19 21:34	BRF	
1,2,4-Trichlorobenzene	ND	0.10	0.069		ND	0.74	0.51	2	9/10/19 21:34	BRF	
1,1,1-Trichloroethane	0.42	0.10	0.037		2.3	0.55	0.20	2	9/10/19 21:34	BRF	
1,1,2-Trichloroethane	ND	0.10	0.041		ND	0.55	0.22	2	9/10/19 21:34	BRF	
Trichloroethylene	2.0	0.10	0.040		11	0.54	0.22	2	9/10/19 21:34	BRF	
Trichlorofluoromethane (Freon 11)	7.8	0.40	0.058		44	2.2	0.33	2	9/10/19 21:34	BRF	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40	0.060		ND	3.1	0.46	2	9/10/19 21:34	BRF	
1,2,4-Trimethylbenzene	1.6	0.10	0.064		8.1	0.49	0.31	2	9/10/19 21:34	BRF	
1,3,5-Trimethylbenzene	0.59	0.10	0.063		2.9	0.49	0.31	2	9/10/19 21:34	BRF	
Vinyl Acetate	ND	2.0	0.048		ND	7.0	0.17	2	9/10/19 21:34	BRF	
Vinyl Chloride	ND	0.10	0.063		ND	0.26	0.16	2	9/10/19 21:34	BRF	
m&p-Xylene	28	0.20	0.12		120	0.87	0.50	2	9/10/19 21:34	BRF	
o-Xylene	8.4	0.10	0.062		36	0.43	0.27	2	9/10/19 21:34	BRF	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	102	70-130	9/10/19 22:02
4-Bromofluorobenzene (1)	105	70-130	9/10/19 21:34
4-Bromofluorobenzene (2)	102	70-130	9/10/19 21:34

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: EW-5-090619**  
**Sample ID: 1910227-10**  
 Sample Matrix: Soil Gas  
 Sampled: 9/6/2019 10:41

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1165  
 Canister Size: 6 liter  
 Flow Controller ID: 4186  
 Sample Type: 30 min

**Work Order: 1910227**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -6.3  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Acetone	700	80	28		1700	190	66	40	9/11/19 9:15	BRF	
Benzene	0.77	0.10	0.041		2.5	0.32	0.13	2	9/10/19 22:32	BRF	
Benzyl chloride	ND	0.10	0.022		ND	0.52	0.11	2	9/10/19 22:32	BRF	
Bromodichloromethane	ND	0.10	0.037		ND	0.67	0.25	2	9/10/19 22:32	BRF	
Bromoform	ND	0.10	0.045		ND	1.0	0.47	2	9/10/19 22:32	BRF	
Bromomethane	ND	1.0	0.069		ND	3.9	0.27	2	9/10/19 22:32	BRF	
1,3-Butadiene	ND	0.10	0.063		ND	0.22	0.14	2	9/10/19 22:32	BRF	
2-Butanone (MEK)	2500	1200	47		7300	3500	140	600	9/11/19 20:42	BRF	
Carbon Disulfide	67	1.0	0.069		210	3.1	0.21	2	9/10/19 22:32	BRF	
Carbon Tetrachloride	0.95	0.10	0.033		6.0	0.63	0.21	2	9/10/19 22:32	BRF	
Chlorobenzene	ND	0.10	0.049		ND	0.46	0.23	2	9/10/19 22:32	BRF	
Chloroethane	ND	0.10	0.061		ND	0.26	0.16	2	9/10/19 22:32	BRF	
Chloroform	ND	0.10	0.037		ND	0.49	0.18	2	9/10/19 22:32	BRF	
Chloromethane	ND	0.20	0.068		ND	0.41	0.14	2	9/10/19 22:32	BRF	
Cyclohexane	ND	0.10	0.071		ND	0.34	0.24	2	9/10/19 22:32	BRF	
Dibromochloromethane	ND	0.10	0.033		ND	0.85	0.28	2	9/10/19 22:32	BRF	
1,2-Dibromoethane (EDB)	ND	0.10	0.039		ND	0.77	0.30	2	9/10/19 22:32	BRF	
1,2-Dichlorobenzene	ND	0.10	0.048		ND	0.60	0.29	2	9/10/19 22:32	BRF	
1,3-Dichlorobenzene	ND	0.10	0.052		ND	0.60	0.31	2	9/10/19 22:32	BRF	
1,4-Dichlorobenzene	ND	0.10	0.061		ND	0.60	0.37	2	9/10/19 22:32	BRF	
Dichlorodifluoromethane (Freon 12)	ND	0.10	0.043		ND	0.49	0.21	2	9/10/19 22:32	BRF	
1,1-Dichloroethane	1.2	0.10	0.030		4.9	0.40	0.12	2	9/10/19 22:32	BRF	
1,2-Dichloroethane	ND	0.10	0.038		ND	0.40	0.15	2	9/10/19 22:32	BRF	
1,1-Dichloroethylene	ND	0.10	0.041		ND	0.40	0.16	2	9/10/19 22:32	BRF	
cis-1,2-Dichloroethylene	0.53	0.10	0.041		2.1	0.40	0.16	2	9/10/19 22:32	BRF	
trans-1,2-Dichloroethylene	ND	0.10	0.041		ND	0.40	0.16	2	9/10/19 22:32	BRF	
1,2-Dichloropropane	ND	0.10	0.035		ND	0.46	0.16	2	9/10/19 22:32	BRF	
cis-1,3-Dichloropropene	ND	0.10	0.035		ND	0.45	0.16	2	9/10/19 22:32	BRF	
trans-1,3-Dichloropropene	ND	0.10	0.036		ND	0.45	0.17	2	9/10/19 22:32	BRF	
Ethanol	9.4	4.0	1.8	V-05	18	7.5	3.4	2	9/10/19 22:32	BRF	
Ethyl Acetate	ND	0.10	0.075		ND	0.36	0.27	2	9/10/19 22:32	BRF	
Ethylbenzene	ND	0.10	0.058		ND	0.43	0.25	2	9/10/19 22:32	BRF	
4-Ethyltoluene	ND	0.10	0.061		ND	0.49	0.30	2	9/10/19 22:32	BRF	
Heptane	ND	0.10	0.059		ND	0.41	0.24	2	9/10/19 22:32	BRF	
Hexachlorobutadiene	ND	0.10	0.046		ND	1.1	0.49	2	9/10/19 22:32	BRF	
Hexane	ND	4.0	0.18		ND	14	0.62	2	9/10/19 22:32	BRF	
2-Hexanone (MBK)	ND	0.10	0.059		ND	0.41	0.24	2	9/10/19 22:32	BRF	
Isopropanol	3.5	4.0	0.12	V-05, J	8.7	9.8	0.30	2	9/10/19 22:32	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.10	0.050		ND	0.36	0.18	2	9/10/19 22:32	BRF	
Methylene Chloride	ND	1.0	0.12		ND	3.5	0.42	2	9/10/19 22:32	BRF	
Methyl methacrylate	ND	0.10	0.057		ND	0.41	0.23	2	9/10/19 22:32	BRF	
4-Methyl-2-pentanone (MIBK)	ND	0.10	0.048		ND	0.41	0.20	2	9/10/19 22:32	BRF	
Propene	ND	4.0	0.099		ND	6.9	0.17	2	9/10/19 22:32	BRF	
Styrene	ND	0.10	0.062		ND	0.43	0.26	2	9/10/19 22:32	BRF	
1,1,1,2-Tetrachloroethane	ND	0.18	0.066		ND	1.2	0.45	2	9/10/19 22:32	BRF	
1,1,2,2-Tetrachloroethane	ND	0.10	0.044		ND	0.69	0.30	2	9/10/19 22:32	BRF	
Tetrachloroethylene	0.19	0.10	0.056		1.3	0.68	0.38	2	9/10/19 22:32	BRF	

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: EW-5-090619**  
**Sample ID: 1910227-10**  
 Sample Matrix: Soil Gas  
 Sampled: 9/6/2019 10:41

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1165  
 Canister Size: 6 liter  
 Flow Controller ID: 4186  
 Sample Type: 30 min

**Work Order: 1910227**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -6.3  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Tetrahydrofuran	1700	30	20		4900	88	59	600	9/11/19 20:42		BRF
Toluene	0.51	0.10	0.052		1.9	0.38	0.19	2	9/10/19 22:32		BRF
1,2,4-Trichlorobenzene	ND	0.10	0.069		ND	0.74	0.51	2	9/10/19 22:32		BRF
1,1,1-Trichloroethane	7.3	0.10	0.037		40	0.55	0.20	2	9/10/19 22:32		BRF
1,1,2-Trichloroethane	ND	0.10	0.041		ND	0.55	0.22	2	9/10/19 22:32		BRF
Trichloroethylene	24	0.10	0.040		130	0.54	0.22	2	9/10/19 22:32		BRF
Trichlorofluoromethane (Freon 11)	0.55	0.40	0.058		3.1	2.2	0.33	2	9/10/19 22:32		BRF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40	0.060		ND	3.1	0.46	2	9/10/19 22:32		BRF
1,2,4-Trimethylbenzene	ND	0.10	0.064		ND	0.49	0.31	2	9/10/19 22:32		BRF
1,3,5-Trimethylbenzene	ND	0.10	0.063		ND	0.49	0.31	2	9/10/19 22:32		BRF
Vinyl Acetate	ND	2.0	0.048		ND	7.0	0.17	2	9/10/19 22:32		BRF
Vinyl Chloride	ND	0.10	0.063		ND	0.26	0.16	2	9/10/19 22:32		BRF
m&p-Xylene	ND	0.20	0.12		ND	0.87	0.50	2	9/10/19 22:32		BRF
o-Xylene	ND	0.10	0.062		ND	0.43	0.27	2	9/10/19 22:32		BRF

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	113	70-130	9/11/19 20:42
4-Bromofluorobenzene (1)	98.9	70-130	9/11/19 9:15
4-Bromofluorobenzene (1)	105	70-130	9/10/19 22:32
4-Bromofluorobenzene (2)	102	70-130	9/10/19 22:32

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: EW-6-090619**  
**Sample ID: 19I0227-11**  
 Sample Matrix: Soil Gas  
 Sampled: 9/6/2019 09:01

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1844  
 Canister Size: 6 liter  
 Flow Controller ID: 4285  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -4  
 Receipt Vacuum(in Hg): -5  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Acetone	16	4.0	1.4		38	9.5	3.3	2	9/10/19 23:33	BRF	
Benzene	0.36	0.10	0.041		1.2	0.32	0.13	2	9/10/19 23:33	BRF	
Benzyl chloride	ND	0.10	0.022		ND	0.52	0.11	2	9/10/19 23:33	BRF	
Bromodichloromethane	ND	0.10	0.037		ND	0.67	0.25	2	9/10/19 23:33	BRF	
Bromoform	ND	0.10	0.045		ND	1.0	0.47	2	9/10/19 23:33	BRF	
Bromomethane	ND	1.0	0.069		ND	3.9	0.27	2	9/10/19 23:33	BRF	
1,3-Butadiene	ND	0.10	0.063		ND	0.22	0.14	2	9/10/19 23:33	BRF	
2-Butanone (MEK)	5.7	4.0	0.16		17	12	0.46	2	9/10/19 23:33	BRF	
Carbon Disulfide	ND	1.0	0.069		ND	3.1	0.21	2	9/10/19 23:33	BRF	
Carbon Tetrachloride	0.058	0.10	0.033	J	0.36	0.63	0.21	2	9/10/19 23:33	BRF	
Chlorobenzene	ND	0.10	0.049		ND	0.46	0.23	2	9/10/19 23:33	BRF	
Chloroethane	ND	0.10	0.061		ND	0.26	0.16	2	9/10/19 23:33	BRF	
Chloroform	ND	0.10	0.037		ND	0.49	0.18	2	9/10/19 23:33	BRF	
Chloromethane	0.51	0.20	0.068		1.1	0.41	0.14	2	9/10/19 23:33	BRF	
Cyclohexane	ND	0.10	0.071		ND	0.34	0.24	2	9/10/19 23:33	BRF	
Dibromochloromethane	ND	0.10	0.033		ND	0.85	0.28	2	9/10/19 23:33	BRF	
1,2-Dibromoethane (EDB)	ND	0.10	0.039		ND	0.77	0.30	2	9/10/19 23:33	BRF	
1,2-Dichlorobenzene	ND	0.10	0.048		ND	0.60	0.29	2	9/10/19 23:33	BRF	
1,3-Dichlorobenzene	ND	0.10	0.052		ND	0.60	0.31	2	9/10/19 23:33	BRF	
1,4-Dichlorobenzene	ND	0.10	0.061		ND	0.60	0.37	2	9/10/19 23:33	BRF	
Dichlorodifluoromethane (Freon 12)	0.45	0.10	0.043		2.2	0.49	0.21	2	9/10/19 23:33	BRF	
1,1-Dichloroethane	ND	0.10	0.030		ND	0.40	0.12	2	9/10/19 23:33	BRF	
1,2-Dichloroethane	ND	0.10	0.038		ND	0.40	0.15	2	9/10/19 23:33	BRF	
1,1-Dichloroethylene	ND	0.10	0.041		ND	0.40	0.16	2	9/10/19 23:33	BRF	
cis-1,2-Dichloroethylene	ND	0.10	0.041		ND	0.40	0.16	2	9/10/19 23:33	BRF	
trans-1,2-Dichloroethylene	ND	0.10	0.041		ND	0.40	0.16	2	9/10/19 23:33	BRF	
1,2-Dichloropropane	ND	0.10	0.035		ND	0.46	0.16	2	9/10/19 23:33	BRF	
cis-1,3-Dichloropropene	ND	0.10	0.035		ND	0.45	0.16	2	9/10/19 23:33	BRF	
trans-1,3-Dichloropropene	ND	0.10	0.036		ND	0.45	0.17	2	9/10/19 23:33	BRF	
Ethanol	23	4.0	1.8	V-05	44	7.5	3.4	2	9/10/19 23:33	BRF	
Ethyl Acetate	ND	0.10	0.075		ND	0.36	0.27	2	9/10/19 23:33	BRF	
Ethylbenzene	ND	0.10	0.058		ND	0.43	0.25	2	9/10/19 23:33	BRF	
4-Ethyltoluene	ND	0.10	0.061		ND	0.49	0.30	2	9/10/19 23:33	BRF	
Heptane	ND	0.10	0.059		ND	0.41	0.24	2	9/10/19 23:33	BRF	
Hexachlorobutadiene	ND	0.10	0.046		ND	1.1	0.49	2	9/10/19 23:33	BRF	
Hexane	ND	4.0	0.18		ND	14	0.62	2	9/10/19 23:33	BRF	
2-Hexanone (MBK)	ND	0.10	0.059		ND	0.41	0.24	2	9/10/19 23:33	BRF	
Isopropanol	0.34	4.0	0.12	V-05, J	0.83	9.8	0.30	2	9/10/19 23:33	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.10	0.050		ND	0.36	0.18	2	9/10/19 23:33	BRF	
Methylene Chloride	0.20	1.0	0.12	J	0.68	3.5	0.42	2	9/10/19 23:33	BRF	
Methyl methacrylate	ND	0.10	0.057		ND	0.41	0.23	2	9/10/19 23:33	BRF	
4-Methyl-2-pentanone (MIBK)	ND	0.10	0.048		ND	0.41	0.20	2	9/10/19 23:33	BRF	
Propene	ND	4.0	0.099		ND	6.9	0.17	2	9/10/19 23:33	BRF	
Styrene	ND	0.10	0.062		ND	0.43	0.26	2	9/10/19 23:33	BRF	
1,1,1,2-Tetrachloroethane	ND	0.18	0.066		ND	1.2	0.45	2	9/10/19 23:33	BRF	
1,1,2,2-Tetrachloroethane	ND	0.10	0.044		ND	0.69	0.30	2	9/10/19 23:33	BRF	
Tetrachloroethylene	0.11	0.10	0.056		0.73	0.68	0.38	2	9/10/19 23:33	BRF	



**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
 Field Sample #: EW-6-090619  
 Sample ID: 1910227-11  
 Sample Matrix: Soil Gas  
 Sampled: 9/6/2019 09:01

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1844  
 Canister Size: 6 liter  
 Flow Controller ID: 4285  
 Sample Type: 30 min

**Work Order: 1910227**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -4  
 Receipt Vacuum(in Hg): -5  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Tetrahydrofuran	2.1	0.10	0.066		6.1	0.29	0.20	2	9/10/19 23:33	BRF	
Toluene	0.57	0.10	0.052		2.1	0.38	0.19	2	9/10/19 23:33	BRF	
1,2,4-Trichlorobenzene	ND	0.10	0.069		ND	0.74	0.51	2	9/10/19 23:33	BRF	
1,1,1-Trichloroethane	ND	0.10	0.037		ND	0.55	0.20	2	9/10/19 23:33	BRF	
1,1,2-Trichloroethane	ND	0.10	0.041		ND	0.55	0.22	2	9/10/19 23:33	BRF	
Trichloroethylene	0.068	0.10	0.040	J	0.37	0.54	0.22	2	9/10/19 23:33	BRF	
Trichlorofluoromethane (Freon 11)	0.23	0.40	0.058	J	1.3	2.2	0.33	2	9/10/19 23:33	BRF	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40	0.060		ND	3.1	0.46	2	9/10/19 23:33	BRF	
1,2,4-Trimethylbenzene	ND	0.10	0.064		ND	0.49	0.31	2	9/10/19 23:33	BRF	
1,3,5-Trimethylbenzene	ND	0.10	0.063		ND	0.49	0.31	2	9/10/19 23:33	BRF	
Vinyl Acetate	ND	2.0	0.048		ND	7.0	0.17	2	9/10/19 23:33	BRF	
Vinyl Chloride	ND	0.10	0.063		ND	0.26	0.16	2	9/10/19 23:33	BRF	
m&p-Xylene	0.18	0.20	0.12	J	0.76	0.87	0.50	2	9/10/19 23:33	BRF	
o-Xylene	ND	0.10	0.062		ND	0.43	0.27	2	9/10/19 23:33	BRF	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	103	70-130	9/10/19 23:33
4-Bromofluorobenzene (2)	99.9	70-130	9/10/19 23:33

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: EW-7-090619**  
**Sample ID: 19I0227-12**  
 Sample Matrix: Soil Gas  
 Sampled: 9/6/2019 08:51

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1735  
 Canister Size: 6 liter  
 Flow Controller ID: 4210  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -5.3  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Acetone	7.1	4.0	1.4		17	9.5	3.3	2	9/11/19 0:30	BRF	
Benzene	0.43	0.10	0.041		1.4	0.32	0.13	2	9/11/19 0:30	BRF	
Benzyl chloride	ND	0.10	0.022		ND	0.52	0.11	2	9/11/19 0:30	BRF	
Bromodichloromethane	ND	0.10	0.037		ND	0.67	0.25	2	9/11/19 0:30	BRF	
Bromoform	ND	0.10	0.045		ND	1.0	0.47	2	9/11/19 0:30	BRF	
Bromomethane	ND	1.0	0.069		ND	3.9	0.27	2	9/11/19 0:30	BRF	
1,3-Butadiene	ND	0.10	0.063		ND	0.22	0.14	2	9/11/19 0:30	BRF	
2-Butanone (MEK)	7.6	4.0	0.16		22	12	0.46	2	9/11/19 0:30	BRF	
Carbon Disulfide	15	1.0	0.069		47	3.1	0.21	2	9/11/19 0:30	BRF	
Carbon Tetrachloride	ND	0.10	0.033		ND	0.63	0.21	2	9/11/19 0:30	BRF	
Chlorobenzene	ND	0.10	0.049		ND	0.46	0.23	2	9/11/19 0:30	BRF	
Chloroethane	ND	0.10	0.061		ND	0.26	0.16	2	9/11/19 0:30	BRF	
Chloroform	0.36	0.10	0.037		1.7	0.49	0.18	2	9/11/19 0:30	BRF	
Chloromethane	ND	0.20	0.068		ND	0.41	0.14	2	9/11/19 0:30	BRF	
Cyclohexane	ND	0.10	0.071		ND	0.34	0.24	2	9/11/19 0:30	BRF	
Dibromochloromethane	ND	0.10	0.033		ND	0.85	0.28	2	9/11/19 0:30	BRF	
1,2-Dibromoethane (EDB)	ND	0.10	0.039		ND	0.77	0.30	2	9/11/19 0:30	BRF	
1,2-Dichlorobenzene	ND	0.10	0.048		ND	0.60	0.29	2	9/11/19 0:30	BRF	
1,3-Dichlorobenzene	ND	0.10	0.052		ND	0.60	0.31	2	9/11/19 0:30	BRF	
1,4-Dichlorobenzene	ND	0.10	0.061		ND	0.60	0.37	2	9/11/19 0:30	BRF	
Dichlorodifluoromethane (Freon 12)	ND	0.10	0.043		ND	0.49	0.21	2	9/11/19 0:30	BRF	
1,1-Dichloroethane	0.31	0.10	0.030		1.3	0.40	0.12	2	9/11/19 0:30	BRF	
1,2-Dichloroethane	ND	0.10	0.038		ND	0.40	0.15	2	9/11/19 0:30	BRF	
1,1-Dichloroethylene	ND	0.10	0.041		ND	0.40	0.16	2	9/11/19 0:30	BRF	
cis-1,2-Dichloroethylene	0.30	0.10	0.041		1.2	0.40	0.16	2	9/11/19 0:30	BRF	
trans-1,2-Dichloroethylene	0.35	0.10	0.041		1.4	0.40	0.16	2	9/11/19 0:30	BRF	
1,2-Dichloropropane	ND	0.10	0.035		ND	0.46	0.16	2	9/11/19 0:30	BRF	
cis-1,3-Dichloropropene	ND	0.10	0.035		ND	0.45	0.16	2	9/11/19 0:30	BRF	
trans-1,3-Dichloropropene	ND	0.10	0.036		ND	0.45	0.17	2	9/11/19 0:30	BRF	
Ethanol	34	4.0	1.8	V-05	63	7.5	3.4	2	9/11/19 0:30	BRF	
Ethyl Acetate	ND	0.10	0.075		ND	0.36	0.27	2	9/11/19 0:30	BRF	
Ethylbenzene	ND	0.10	0.058		ND	0.43	0.25	2	9/11/19 0:30	BRF	
4-Ethyltoluene	ND	0.10	0.061		ND	0.49	0.30	2	9/11/19 0:30	BRF	
Heptane	ND	0.10	0.059		ND	0.41	0.24	2	9/11/19 0:30	BRF	
Hexachlorobutadiene	ND	0.10	0.046		ND	1.1	0.49	2	9/11/19 0:30	BRF	
Hexane	ND	4.0	0.18		ND	14	0.62	2	9/11/19 0:30	BRF	
2-Hexanone (MBK)	ND	0.10	0.059		ND	0.41	0.24	2	9/11/19 0:30	BRF	
Isopropanol	1.9	4.0	0.12	V-05, J	4.6	9.8	0.30	2	9/11/19 0:30	BRF	
Methyl tert-Butyl Ether (MTBE)	ND	0.10	0.050		ND	0.36	0.18	2	9/11/19 0:30	BRF	
Methylene Chloride	ND	1.0	0.12		ND	3.5	0.42	2	9/11/19 0:30	BRF	
Methyl methacrylate	ND	0.10	0.057		ND	0.41	0.23	2	9/11/19 0:30	BRF	
4-Methyl-2-pentanone (MIBK)	ND	0.10	0.048		ND	0.41	0.20	2	9/11/19 0:30	BRF	
Propene	ND	4.0	0.099		ND	6.9	0.17	2	9/11/19 0:30	BRF	
Styrene	ND	0.10	0.062		ND	0.43	0.26	2	9/11/19 0:30	BRF	
1,1,1,2-Tetrachloroethane	ND	0.18	0.066		ND	1.2	0.45	2	9/11/19 0:30	BRF	
1,1,2,2-Tetrachloroethane	ND	0.10	0.044		ND	0.69	0.30	2	9/11/19 0:30	BRF	
Tetrachloroethylene	14	0.10	0.056		93	0.68	0.38	2	9/11/19 0:30	BRF	

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
 Field Sample #: EW-7-090619  
 Sample ID: 19I0227-12  
 Sample Matrix: Soil Gas  
 Sampled: 9/6/2019 08:51

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1735  
 Canister Size: 6 liter  
 Flow Controller ID: 4210  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -5.3  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analized		
Tetrahydrofuran	860	2.0	1.3		2500	5.9	3.9	40	9/11/19 9:42		BRF
Toluene	0.39	0.10	0.052		1.5	0.38	0.19	2	9/11/19 0:30		BRF
1,2,4-Trichlorobenzene	ND	0.10	0.069		ND	0.74	0.51	2	9/11/19 0:30		BRF
1,1,1-Trichloroethane	1.5	0.10	0.037		8.3	0.55	0.20	2	9/11/19 0:30		BRF
1,1,2-Trichloroethane	ND	0.10	0.041		ND	0.55	0.22	2	9/11/19 0:30		BRF
Trichloroethylene	28	0.10	0.040		150	0.54	0.22	2	9/11/19 0:30		BRF
Trichlorofluoromethane (Freon 11)	25	0.40	0.058		140	2.2	0.33	2	9/11/19 0:30		BRF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40	0.060		ND	3.1	0.46	2	9/11/19 0:30		BRF
1,2,4-Trimethylbenzene	ND	0.10	0.064		ND	0.49	0.31	2	9/11/19 0:30		BRF
1,3,5-Trimethylbenzene	ND	0.10	0.063		ND	0.49	0.31	2	9/11/19 0:30		BRF
Vinyl Acetate	ND	2.0	0.048		ND	7.0	0.17	2	9/11/19 0:30		BRF
Vinyl Chloride	ND	0.10	0.063		ND	0.26	0.16	2	9/11/19 0:30		BRF
m&p-Xylene	ND	0.20	0.12		ND	0.87	0.50	2	9/11/19 0:30		BRF
o-Xylene	ND	0.10	0.062		ND	0.43	0.27	2	9/11/19 0:30		BRF

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	97.4	70-130	9/11/19 9:42
4-Bromofluorobenzene (1)	103	70-130	9/11/19 0:30
4-Bromofluorobenzene (2)	100	70-130	9/11/19 0:30

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: EW-Combined-090619**  
**Sample ID: 19I0227-13**  
 Sample Matrix: Soil Gas  
 Sampled: 9/6/2019 10:37

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1880  
 Canister Size: 6 liter  
 Flow Controller ID: 4073  
 Sample Type: 30 min

**Work Order: 19I0227**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -5.6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Acetone	2.1	4.0	1.4	J	4.9	9.5	3.3	2	9/11/19	1:29	BRF
Benzene	0.13	0.10	0.041		0.40	0.32	0.13	2	9/11/19	1:29	BRF
Benzyl chloride	ND	0.10	0.022		ND	0.52	0.11	2	9/11/19	1:29	BRF
Bromodichloromethane	ND	0.10	0.037		ND	0.67	0.25	2	9/11/19	1:29	BRF
Bromoform	ND	0.10	0.045		ND	1.0	0.47	2	9/11/19	1:29	BRF
Bromomethane	ND	1.0	0.069		ND	3.9	0.27	2	9/11/19	1:29	BRF
1,3-Butadiene	ND	0.10	0.063		ND	0.22	0.14	2	9/11/19	1:29	BRF
2-Butanone (MEK)	0.54	4.0	0.16	J	1.6	12	0.46	2	9/11/19	1:29	BRF
Carbon Disulfide	ND	1.0	0.069		ND	3.1	0.21	2	9/11/19	1:29	BRF
Carbon Tetrachloride	14	0.10	0.033		89	0.63	0.21	2	9/11/19	1:29	BRF
Chlorobenzene	ND	0.10	0.049		ND	0.46	0.23	2	9/11/19	1:29	BRF
Chloroethane	ND	0.10	0.061		ND	0.26	0.16	2	9/11/19	1:29	BRF
Chloroform	0.66	0.10	0.037		3.2	0.49	0.18	2	9/11/19	1:29	BRF
Chloromethane	ND	0.20	0.068		ND	0.41	0.14	2	9/11/19	1:29	BRF
Cyclohexane	ND	0.10	0.071		ND	0.34	0.24	2	9/11/19	1:29	BRF
Dibromochloromethane	ND	0.10	0.033		ND	0.85	0.28	2	9/11/19	1:29	BRF
1,2-Dibromoethane (EDB)	ND	0.10	0.039		ND	0.77	0.30	2	9/11/19	1:29	BRF
1,2-Dichlorobenzene	ND	0.10	0.048		ND	0.60	0.29	2	9/11/19	1:29	BRF
1,3-Dichlorobenzene	ND	0.10	0.052		ND	0.60	0.31	2	9/11/19	1:29	BRF
1,4-Dichlorobenzene	ND	0.10	0.061		ND	0.60	0.37	2	9/11/19	1:29	BRF
Dichlorodifluoromethane (Freon 12)	ND	0.10	0.043		ND	0.49	0.21	2	9/11/19	1:29	BRF
1,1-Dichloroethane	11	0.10	0.030		45	0.40	0.12	2	9/11/19	1:29	BRF
1,2-Dichloroethane	ND	0.10	0.038		ND	0.40	0.15	2	9/11/19	1:29	BRF
1,1-Dichloroethylene	6.0	0.10	0.041		24	0.40	0.16	2	9/11/19	1:29	BRF
cis-1,2-Dichloroethylene	6.7	0.10	0.041		27	0.40	0.16	2	9/11/19	1:29	BRF
trans-1,2-Dichloroethylene	0.14	0.10	0.041		0.55	0.40	0.16	2	9/11/19	1:29	BRF
1,2-Dichloropropane	ND	0.10	0.035		ND	0.46	0.16	2	9/11/19	1:29	BRF
cis-1,3-Dichloropropene	ND	0.10	0.035		ND	0.45	0.16	2	9/11/19	1:29	BRF
trans-1,3-Dichloropropene	ND	0.10	0.036		ND	0.45	0.17	2	9/11/19	1:29	BRF
Ethanol	13	4.0	1.8	V-05	25	7.5	3.4	2	9/11/19	1:29	BRF
Ethyl Acetate	ND	0.10	0.075		ND	0.36	0.27	2	9/11/19	1:29	BRF
Ethylbenzene	ND	0.10	0.058		ND	0.43	0.25	2	9/11/19	1:29	BRF
4-Ethyltoluene	ND	0.10	0.061		ND	0.49	0.30	2	9/11/19	1:29	BRF
Heptane	ND	0.10	0.059		ND	0.41	0.24	2	9/11/19	1:29	BRF
Hexachlorobutadiene	ND	0.10	0.046		ND	1.1	0.49	2	9/11/19	1:29	BRF
Hexane	ND	4.0	0.18		ND	14	0.62	2	9/11/19	1:29	BRF
2-Hexanone (MBK)	ND	0.10	0.059		ND	0.41	0.24	2	9/11/19	1:29	BRF
Isopropanol	ND	4.0	0.12	V-05	ND	9.8	0.30	2	9/11/19	1:29	BRF
Methyl tert-Butyl Ether (MTBE)	ND	0.10	0.050		ND	0.36	0.18	2	9/11/19	1:29	BRF
Methylene Chloride	ND	1.0	0.12		ND	3.5	0.42	2	9/11/19	1:29	BRF
Methyl methacrylate	ND	0.10	0.057		ND	0.41	0.23	2	9/11/19	1:29	BRF
4-Methyl-2-pentanone (MIBK)	ND	0.10	0.048		ND	0.41	0.20	2	9/11/19	1:29	BRF
Propene	ND	4.0	0.099		ND	6.9	0.17	2	9/11/19	1:29	BRF
Styrene	ND	0.10	0.062		ND	0.43	0.26	2	9/11/19	1:29	BRF
1,1,1,2-Tetrachloroethane	ND	0.18	0.066		ND	1.2	0.45	2	9/11/19	1:29	BRF
1,1,2,2-Tetrachloroethane	ND	0.10	0.044		ND	0.69	0.30	2	9/11/19	1:29	BRF
Tetrachloroethylene	16	0.10	0.056		110	0.68	0.38	2	9/11/19	1:29	BRF

**ANALYTICAL RESULTS**

Project Location: Providence, RI  
 Date Received: 9/6/2019  
**Field Sample #: EW-Combined-090619**  
**Sample ID: 1910227-13**  
 Sample Matrix: Soil Gas  
 Sampled: 9/6/2019 10:37

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1880  
 Canister Size: 6 liter  
 Flow Controller ID: 4073  
 Sample Type: 30 min

**Work Order: 1910227**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -5.6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv			Flag/Qual	ug/m3			Dilution	Date/Time		Analyst
	Results	RL	MDL		Results	RL	MDL		Analyzed		
Tetrahydrofuran	1.1	0.10	0.066		3.2	0.29	0.20	2	9/11/19 1:29		BRF
Toluene	0.47	0.10	0.052		1.8	0.38	0.19	2	9/11/19 1:29		BRF
1,2,4-Trichlorobenzene	ND	0.10	0.069		ND	0.74	0.51	2	9/11/19 1:29		BRF
1,1,1-Trichloroethane	120	1.0	0.37		670	5.5	2.0	20	9/11/19 10:10		BRF
1,1,2-Trichloroethane	ND	0.10	0.041		ND	0.55	0.22	2	9/11/19 1:29		BRF
Trichloroethylene	97	0.10	0.040		520	0.54	0.22	2	9/11/19 1:29		BRF
Trichlorofluoromethane (Freon 11)	41	0.40	0.058		230	2.2	0.33	2	9/11/19 1:29		BRF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40	0.060		ND	3.1	0.46	2	9/11/19 1:29		BRF
1,2,4-Trimethylbenzene	ND	0.10	0.064		ND	0.49	0.31	2	9/11/19 1:29		BRF
1,3,5-Trimethylbenzene	ND	0.10	0.063		ND	0.49	0.31	2	9/11/19 1:29		BRF
Vinyl Acetate	ND	2.0	0.048		ND	7.0	0.17	2	9/11/19 1:29		BRF
Vinyl Chloride	ND	0.10	0.063		ND	0.26	0.16	2	9/11/19 1:29		BRF
m&p-Xylene	0.24	0.20	0.12		1.0	0.87	0.50	2	9/11/19 1:29		BRF
o-Xylene	ND	0.10	0.062		ND	0.43	0.27	2	9/11/19 1:29		BRF

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	100	70-130	9/11/19 10:10
4-Bromofluorobenzene (1)	102	70-130	9/11/19 1:29
4-Bromofluorobenzene (2)	99.1	70-130	9/11/19 1:29

**Sample Extraction Data**

Prep Method: TO-15 Prep-EPA TO-15

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
19I0227-01 [IA-1-090619]	B240263	1.5	1	N/A	1000	400	855	09/10/19
19I0227-02 [IA-2-090619]	B240263	1.5	1	N/A	1000	400	855	09/10/19
19I0227-03 [IA-3-090619]	B240263	1.5	1	N/A	1000	400	855	09/10/19
19I0227-04 [IA-4-090619]	B240263	2	1	N/A	1000	400	1000	09/10/19
19I0227-05 [IA-5-090619]	B240263	1.5	1	N/A	1000	400	855	09/10/19
19I0227-06 [IA-6-090619]	B240263	1.5	1	N/A	1000	400	855	09/10/19
19I0227-07 [IA-7-090619]	B240263	1.5	1	N/A	1000	400	855	09/10/19
19I0227-07RE1 [IA-7-090619]	B240263	1.5	1	N/A	1000	400	60	09/10/19
19I0227-08 [AA-1-090619]	B240263	1.5	1	N/A	1000	400	855	09/10/19
19I0227-09 [Post Carbon-090619]	B240263	2	1	N/A	1000	400	400	09/10/19
19I0227-09RE1 [Post Carbon-090619]	B240263	2	1	N/A	1000	400	80	09/10/19
19I0227-10 [EW-5-090619]	B240263	1.5	1	N/A	1000	400	300	09/10/19
19I0227-10RE1 [EW-5-090619]	B240263	1.5	1	N/A	1000	400	15	09/10/19
19I0227-11 [EW-6-090619]	B240263	1.5	1	N/A	1000	400	300	09/10/19
19I0227-12 [EW-7-090619]	B240263	1.5	1	N/A	1000	400	300	09/10/19
19I0227-12RE1 [EW-7-090619]	B240263	1.5	1	N/A	1000	400	15	09/10/19
19I0227-13 [EW-Combined-090619]	B240263	1.5	1	N/A	1000	400	300	09/10/19
19I0227-13RE1 [EW-Combined-090619]	B240263	1.5	1	N/A	1000	400	30	09/10/19

Prep Method: TO-15 Prep-EPA TO-15

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
19I0227-10RE2 [EW-5-090619]	B240393	1.5	200	5	1000	400	200	09/11/19

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	RPD	Flag/Qual
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	

Batch B240263 - TO-15 Prep

Blank (B240263-BLK1)

Prepared & Analyzed: 09/10/19

Acetone	ND	1.4							
Benzene	ND	0.035							
Benzyl chloride	ND	0.035							
Bromodichloromethane	ND	0.035							
Bromoform	ND	0.035							
Bromomethane	ND	0.035							
1,3-Butadiene	ND	0.035							
2-Butanone (MEK)	ND	1.4							
Carbon Disulfide	ND	0.35							
Carbon Tetrachloride	ND	0.035							
Chlorobenzene	ND	0.035							
Chloroethane	ND	0.035							
Chloroform	ND	0.035							
Chloromethane	ND	0.070							
Cyclohexane	ND	0.035							
Dibromochloromethane	ND	0.035							
1,2-Dibromoethane (EDB)	ND	0.035							
1,2-Dichlorobenzene	ND	0.035							
1,3-Dichlorobenzene	ND	0.035							
1,4-Dichlorobenzene	ND	0.035							
Dichlorodifluoromethane (Freon 12)	ND	0.035							
1,1-Dichloroethane	ND	0.035							
1,2-Dichloroethane	ND	0.035							
1,1-Dichloroethylene	ND	0.035							
cis-1,2-Dichloroethylene	ND	0.035							
trans-1,2-Dichloroethylene	ND	0.035							
1,2-Dichloropropane	ND	0.035							
cis-1,3-Dichloropropene	ND	0.035							
trans-1,3-Dichloropropene	ND	0.035							
Ethanol	ND	1.4							V-05
Ethyl Acetate	ND	0.035							
Ethylbenzene	ND	0.035							
4-Ethyltoluene	ND	0.035							
Heptane	ND	0.035							
Hexachlorobutadiene	ND	0.035							
Hexane	ND	1.4							
2-Hexanone (MBK)	ND	0.035							
Isopropanol	ND	1.4							V-05
Methyl tert-Butyl Ether (MTBE)	ND	0.035							
Methylene Chloride	ND	0.35							
Methyl methacrylate	ND	0.035							
4-Methyl-2-pentanone (MIBK)	ND	0.035							
Propene	ND	1.4							
Styrene	ND	0.035							
1,1,1,2-Tetrachloroethane	ND	0.064							
1,1,2,2-Tetrachloroethane	ND	0.035							

**QUALITY CONTROL**

**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	Flag/Qual
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	Limit	

**Batch B240263 - TO-15 Prep**

**Blank (B240263-BLK1)**

Prepared & Analyzed: 09/10/19

Tetrachloroethylene	ND	0.035								
Tetrahydrofuran	ND	0.035								
Toluene	ND	0.035								
1,2,4-Trichlorobenzene	ND	0.035								
1,1,1-Trichloroethane	ND	0.035								
1,1,2-Trichloroethane	ND	0.035								
Trichloroethylene	ND	0.035								
Trichlorofluoromethane (Freon 11)	ND	0.14								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.14								
1,2,4-Trimethylbenzene	ND	0.035								
1,3,5-Trimethylbenzene	ND	0.035								
Vinyl Acetate	ND	0.70								
Vinyl Chloride	ND	0.035								
m&p-Xylene	ND	0.070								
o-Xylene	ND	0.035								
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	<i>8.02</i>				<i>8.00</i>		<i>100</i>	<i>70-130</i>		
<i>Surrogate: 4-Bromofluorobenzene (2)</i>	<i>7.80</i>				<i>8.00</i>		<i>97.4</i>	<i>70-130</i>		

**LCS (B240263-BS1)**

Prepared & Analyzed: 09/10/19

Acetone	4.33				5.00		86.7	70-130		
Benzene	4.48				5.00		89.6	70-130		
Benzyl chloride	5.81				5.00		116	70-130		
Bromodichloromethane	4.50				5.00		90.1	70-130		
Bromoform	5.03				5.00		101	70-130		
Bromomethane	5.21				5.00		104	70-130		
1,3-Butadiene	4.42				5.00		88.4	70-130		
2-Butanone (MEK)	4.20				5.00		84.1	70-130		
Carbon Disulfide	4.71				5.00		94.3	70-130		
Carbon Tetrachloride	4.32				5.00		86.4	70-130		
Chlorobenzene	4.39				5.00		87.8	70-130		
Chloroethane	5.22				5.00		104	70-130		
Chloroform	4.31				5.00		86.2	70-130		
Chloromethane	5.04				5.00		101	70-130		
Cyclohexane	4.44				5.00		88.9	70-130		
Dibromochloromethane	4.57				5.00		91.5	70-130		
1,2-Dibromoethane (EDB)	4.69				5.00		93.8	70-130		
1,2-Dichlorobenzene	5.65				5.00		113	70-130		
1,3-Dichlorobenzene	5.32				5.00		106	70-130		
1,4-Dichlorobenzene	5.32				5.00		106	70-130		
Dichlorodifluoromethane (Freon 12)	4.60				5.00		92.0	70-130		
1,1-Dichloroethane	4.41				5.00		88.1	70-130		
1,2-Dichloroethane	4.48				5.00		89.5	70-130		
1,1-Dichloroethylene	5.00				5.00		100	70-130		
cis-1,2-Dichloroethylene	4.26				5.00		85.3	70-130		
trans-1,2-Dichloroethylene	4.25				5.00		84.9	70-130		
1,2-Dichloropropane	4.53				5.00		90.6	70-130		



QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag/Qual
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	Limit		
<b>Batch B240263 - TO-15 Prep</b>											
<b>LCS (B240263-BS1)</b>											
Prepared & Analyzed: 09/10/19											
cis-1,3-Dichloropropene	4.41				5.00		88.2	70-130			
trans-1,3-Dichloropropene	5.12				5.00		102	70-130			
Ethanol	4.05				5.00		81.1	70-130			V-05
Ethyl Acetate	4.58				5.00		91.7	70-130			
Ethylbenzene	4.45				5.00		89.1	70-130			
4-Ethyltoluene	4.66				5.00		93.2	70-130			
Heptane	4.31				5.00		86.2	70-130			
Hexachlorobutadiene	5.82				5.00		116	70-130			
Hexane	5.03				5.00		101	70-130			
2-Hexanone (MBK)	4.52				5.00		90.5	70-130			
Isopropanol	3.74				5.00		74.8	70-130			V-05
Methyl tert-Butyl Ether (MTBE)	3.94				5.00		78.9	70-130			
Methylene Chloride	4.23				5.00		84.7	70-130			
Methyl methacrylate	5.24				5.00		105	70-130			
4-Methyl-2-pentanone (MIBK)	4.69				5.00		93.7	70-130			
Propene	4.26				5.00		85.3	70-130			
Styrene	4.90				5.00		98.0	70-130			
1,1,1,2-Tetrachloroethane	0.517				0.455		114	70-130			
1,1,2,2-Tetrachloroethane	4.96				5.00		99.2	70-130			
Tetrachloroethylene	4.50				5.00		90.1	70-130			
Tetrahydrofuran	4.60				5.00		92.0	70-130			
Toluene	4.37				5.00		87.4	70-130			
1,2,4-Trichlorobenzene	7.16				5.00		143 *	70-130			L-01
1,1,1-Trichloroethane	4.04				5.00		80.7	70-130			
1,1,2-Trichloroethane	4.68				5.00		93.7	70-130			
Trichloroethylene	4.25				5.00		85.0	70-130			
Trichlorofluoromethane (Freon 11)	4.77				5.00		95.4	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	4.21				5.00		84.2	70-130			
1,2,4-Trimethylbenzene	4.71				5.00		94.1	70-130			
1,3,5-Trimethylbenzene	4.35				5.00		87.0	70-130			
Vinyl Acetate	4.08				5.00		81.5	70-130			
Vinyl Chloride	4.45				5.00		88.9	70-130			
m&p-Xylene	8.94				10.0		89.4	70-130			
o-Xylene	4.44				5.00		88.7	70-130			
Surrogate: 4-Bromofluorobenzene (1)	8.23				8.00		103	70-130			
Surrogate: 4-Bromofluorobenzene (2)	8.26				8.00		103	70-130			

**QUALITY CONTROL**

**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level ppbv	Source Result	%REC Limits	RPD	RPD Limit	Flag/Qual
	Results	RL	Results	RL						
<b>Batch B240263 - TO-15 Prep</b>										
<b>Duplicate (B240263-DUP1)</b>	<b>Source: 1910227-10</b>				<b>Prepared &amp; Analyzed: 09/10/19</b>					
Acetone	530	4.0	1300	9.5		530		0.921	25	E
Benzene	0.77	0.10	2.5	0.32		0.77		0.00	25	
Benzyl chloride	ND	0.10	ND	0.52		ND			25	
Bromodichloromethane	ND	0.10	ND	0.67		ND			25	
Bromoform	ND	0.10	ND	1.0		ND			25	
Bromomethane	ND	0.10	ND	0.39		ND			25	
1,3-Butadiene	ND	0.10	ND	0.22		ND			25	
2-Butanone (MEK)	1300	4.0	3900	12		1300		0.827	25	E
Carbon Disulfide	66	1.0	210	3.1		67		1.10	25	
Carbon Tetrachloride	1.0	0.10	6.3	0.63		0.95		4.73	25	
Chlorobenzene	ND	0.10	ND	0.46		ND			25	
Chloroethane	ND	0.10	ND	0.26		ND			25	
Chloroform	ND	0.10	ND	0.49		ND			25	
Chloromethane	ND	0.20	ND	0.41		ND			25	
Cyclohexane	ND	0.10	ND	0.34		ND			25	
Dibromochloromethane	ND	0.10	ND	0.85		ND			25	
1,2-Dibromoethane (EDB)	ND	0.10	ND	0.77		ND			25	
1,2-Dichlorobenzene	ND	0.10	ND	0.60		ND			25	
1,3-Dichlorobenzene	ND	0.10	ND	0.60		ND			25	
1,4-Dichlorobenzene	ND	0.10	ND	0.60		ND			25	
Dichlorodifluoromethane (Freon 12)	ND	0.10	ND	0.49		ND			25	
1,1-Dichloroethane	1.2	0.10	4.9	0.40		1.2		0.494	25	
1,2-Dichloroethane	ND	0.10	ND	0.40		ND			25	
1,1-Dichloroethylene	ND	0.10	ND	0.40		ND			25	
cis-1,2-Dichloroethylene	0.53	0.10	2.1	0.40		0.53		1.13	25	
trans-1,2-Dichloroethylene	ND	0.10	ND	0.40		ND			25	
1,2-Dichloropropane	ND	0.10	ND	0.46		ND			25	
cis-1,3-Dichloropropene	ND	0.10	ND	0.45		ND			25	
trans-1,3-Dichloropropene	ND	0.10	ND	0.45		ND			25	
Ethanol	9.0	4.0	17	7.5		9.4		3.69	25	V-05
Ethyl Acetate	ND	0.10	ND	0.36		ND			25	
Ethylbenzene	ND	0.10	ND	0.43		ND			25	
4-Ethyltoluene	ND	0.10	ND	0.49		ND			25	
Heptane	ND	0.10	ND	0.41		ND			25	
Hexachlorobutadiene	ND	0.10	ND	1.1		ND			25	
Hexane	ND	4.0	ND	14		ND			25	
2-Hexanone (MBK)	ND	0.10	ND	0.41		ND			25	
Isopropanol	3.4	4.0	8.3	9.8		3.5		4.35	25	V-05, J
Methyl tert-Butyl Ether (MTBE)	ND	0.10	ND	0.36		ND			25	
Methylene Chloride	ND	1.0	ND	3.5		ND			25	
Methyl methacrylate	ND	0.10	ND	0.41		ND			25	
4-Methyl-2-pentanone (MIBK)	ND	0.10	ND	0.41		ND			25	
Propene	ND	4.0	ND	6.9		ND			25	
Styrene	ND	0.10	ND	0.43		ND			25	
1,1,1,2-Tetrachloroethane	ND	0.18	ND	1.2		ND			25	
1,1,2,2-Tetrachloroethane	ND	0.10	ND	0.69		ND			25	

**QUALITY CONTROL**

**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level ppbv	Source Result	%REC Limits	RPD	RPD Limit	Flag/Qual
	Results	RL	Results	RL						
<b>Batch B240263 - TO-15 Prep</b>										
<b>Duplicate (B240263-DUP1)</b>		<b>Source: 1910227-10</b>				<b>Prepared &amp; Analyzed: 09/10/19</b>				
Tetrachloroethylene	0.20	0.10	1.3	0.68		0.19		6.25	25	
Tetrahydrofuran	790	0.10	2300	0.29		810		1.95	25	E
Toluene	0.48	0.10	1.8	0.38		0.51		6.06	25	
1,2,4-Trichlorobenzene	ND	0.10	ND	0.74		ND			25	
1,1,1-Trichloroethane	7.3	0.10	40	0.55		7.3		0.220	25	
1,1,2-Trichloroethane	ND	0.10	ND	0.55		ND			25	
Trichloroethylene	24	0.10	130	0.54		24		0.997	25	
Trichlorofluoromethane (Freon 11)	0.55	0.40	3.1	2.2		0.55		0.730	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.40	ND	3.1		ND			25	
1,2,4-Trimethylbenzene	ND	0.10	ND	0.49		ND			25	
1,3,5-Trimethylbenzene	ND	0.10	ND	0.49		ND			25	
Vinyl Acetate	ND	2.0	ND	7.0		ND			25	
Vinyl Chloride	ND	0.10	ND	0.26		ND			25	
m&p-Xylene	ND	0.20	ND	0.87		ND			25	
o-Xylene	ND	0.10	ND	0.43		ND			25	
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	<i>8.40</i>					<i>8.00</i>		<i>105</i>	<i>70-130</i>	
<i>Surrogate: 4-Bromofluorobenzene (2)</i>	<i>8.17</i>					<i>8.00</i>		<i>102</i>	<i>70-130</i>	
<b>Batch B240393 - TO-15 Prep</b>										
<b>Blank (B240393-BLK1)</b>		<b>Prepared &amp; Analyzed: 09/11/19</b>								
2-Butanone (MEK)	ND	1.4								
Tetrahydrofuran	ND	0.035								
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	<i>9.01</i>					<i>8.00</i>		<i>113</i>	<i>70-130</i>	
<b>LCS (B240393-BS1)</b>		<b>Prepared &amp; Analyzed: 09/11/19</b>								
2-Butanone (MEK)	4.74					5.00		94.8	70-130	
Tetrahydrofuran	5.48					5.00		110	70-130	
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	<i>8.21</i>					<i>8.00</i>		<i>103</i>	<i>70-130</i>	

**QUALITY CONTROL**

**Air Toxics by EPA Compendium Methods - Quality Control**

Analyte	ppbv		ug/m3		Spike Level ppbv	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
	Results	RL	Results	RL							
<b>Batch B240393 - TO-15 Prep</b>											
<b>Duplicate (B240393-DUP1)</b>		<b>Source: 1910227-10RE2</b>				<b>Prepared &amp; Analyzed: 09/11/19</b>					
2-Butanone (MEK)	2400	1200	7000	3500		2500			4.13	25	
Tetrahydrofuran	1600	30	4700	88		1700			3.60	25	
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	<i>8.93</i>				<i>8.00</i>		<i>112</i>	<i>70-130</i>			

**Note: Blank Subtraction is not performed unless otherwise noted**

**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
RL	Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
LCS Dup	Duplicate Laboratory Control Sample
MS	Matrix Spike Sample
MS Dup	Duplicate Matrix Spike Sample
REC	Recovery
QC	Quality Control
ppbv	Parts per billion volume
EPA	United States Environmental Protection Agency
% REC	Percent Recovery
ND	Not Detected
N/A	Not Applicable
DL	Detection Limit
NC	Not Calculated
LFB/LCS	Lab Fortified Blank/Lab Control Sample
ORP	Oxidation-Reduction Potential
wet	Not dry weight corrected
% wt	Percent weight
Kg	Kilogram
g	Gram
mg	Milligram
µg	Microgram
ng	Nanogram
L	Liter
mL	Milliliter
µL	Microliter
m <sup>3</sup>	Cubic Meter
EPH	Extractable Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons
APH	Air Petroleum Hydrocarbons
FID	Flame Ionization Detector
PID	Photo Ionization Detector
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
E	Reported result is estimated. Value reported over verified calibration range.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-01	Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

**ANALYST**

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RJM     Raymond J. McCarthy  
MEK     Meghan E. Kelley  
CF2     Christine M. Farina  
BRF     Brittany R. Fisk

**CERTIFICATIONS**

**Certified Analyses included in this Report**

Analyte	Certifications
<i>EPA TO-15 in Air</i>	
Acetone	AIHA,NY,ME,NH
Benzene	AIHA,FL,NJ,NY,ME,NH,VA
Benzyl chloride	AIHA,FL,NJ,NY,ME,NH,VA
Bromodichloromethane	AIHA,NJ,NY,ME,NH,VA
Bromoform	AIHA,NJ,NY,ME,NH,VA
Bromomethane	AIHA,FL,NJ,NY,ME,NH
1,3-Butadiene	AIHA,NJ,NY,ME,NH,VA
2-Butanone (MEK)	AIHA,FL,NJ,NY,ME,NH,VA
Carbon Disulfide	AIHA,NJ,NY,ME,NH,VA
Carbon Tetrachloride	AIHA,FL,NJ,NY,ME,NH,VA
Chlorobenzene	AIHA,FL,NJ,NY,ME,NH,VA
Chloroethane	AIHA,FL,NJ,NY,ME,NH,VA
Chloroform	AIHA,FL,NJ,NY,ME,NH,VA
Chloromethane	AIHA,FL,NJ,NY,ME,NH,VA
Cyclohexane	AIHA,NJ,NY,ME,NH,VA
Dibromochloromethane	AIHA,NY,ME,NH
1,2-Dibromoethane (EDB)	AIHA,NJ,NY,ME,NH
1,2-Dichlorobenzene	AIHA,FL,NJ,NY,ME,NH,VA
1,3-Dichlorobenzene	AIHA,NJ,NY,ME,NH
1,4-Dichlorobenzene	AIHA,FL,NJ,NY,ME,NH,VA
Dichlorodifluoromethane (Freon 12)	AIHA,NY,ME,NH
1,1-Dichloroethane	AIHA,FL,NJ,NY,ME,NH,VA
1,2-Dichloroethane	AIHA,FL,NJ,NY,ME,NH,VA
1,1-Dichloroethylene	AIHA,FL,NJ,NY,ME,NH,VA
cis-1,2-Dichloroethylene	AIHA,FL,NY,ME,NH,VA
trans-1,2-Dichloroethylene	AIHA,NJ,NY,ME,NH,VA
1,2-Dichloropropane	AIHA,FL,NJ,NY,ME,NH,VA
cis-1,3-Dichloropropene	AIHA,FL,NJ,NY,ME,NH,VA
trans-1,3-Dichloropropene	AIHA,NY,ME,NH
Ethanol	AIHA
Ethyl Acetate	AIHA
Ethylbenzene	AIHA,FL,NJ,NY,ME,NH,VA
4-Ethyltoluene	AIHA,NJ
Heptane	AIHA,NJ,NY,ME,NH,VA
Hexachlorobutadiene	AIHA,NJ,NY,ME,NH,VA
Hexane	AIHA,FL,NJ,NY,ME,NH,VA
2-Hexanone (MBK)	AIHA
Isopropanol	AIHA,NY,ME,NH
Methyl tert-Butyl Ether (MTBE)	AIHA,FL,NJ,NY,ME,NH,VA
Methylene Chloride	AIHA,FL,NJ,NY,ME,NH,VA
Methyl methacrylate	AIHA,NJ,NY,ME,NH,VA
4-Methyl-2-pentanone (MIBK)	AIHA,FL,NJ,NY,ME,NH
Propene	AIHA
Styrene	AIHA,FL,NJ,NY,ME,NH,VA
1,1,2,2-Tetrachloroethane	AIHA,FL,NJ,NY,ME,NH,VA
Tetrachloroethylene	AIHA,FL,NJ,NY,ME,NH,VA
Tetrahydrofuran	AIHA

**CERTIFICATIONS**

**Certified Analyses included in this Report**

Analyte	Certifications
<i>EPA TO-15 in Air</i>	
Toluene	AIHA,FL,NJ,NY,ME,NH,VA
1,2,4-Trichlorobenzene	AIHA,NJ,NY,ME,NH,VA
1,1,1-Trichloroethane	AIHA,FL,NJ,NY,ME,NH,VA
1,1,2-Trichloroethane	AIHA,FL,NJ,NY,ME,NH,VA
Trichloroethylene	AIHA,FL,NJ,NY,ME,NH,VA
Trichlorofluoromethane (Freon 11)	AIHA,NY,ME,NH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	AIHA,NJ,NY,ME,NH,VA
1,2,4-Trimethylbenzene	AIHA,NJ,NY,ME,NH
1,3,5-Trimethylbenzene	AIHA,NJ,NY,ME,NH
Vinyl Acetate	AIHA,FL,NJ,NY,ME,NH,VA
Vinyl Chloride	AIHA,FL,NJ,NY,ME,NH,VA
m&p-Xylene	AIHA,FL,NJ,NY,ME,NH,VA
o-Xylene	AIHA,FL,NJ,NY,ME,NH,VA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Public Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020





RJM 1910227

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Doc #378 Rev 1\_03242017

CHAIN OF CUSTODY RECORD (AIR)

39 Spruce Street
East Longmeadow, MA 01028

ANALYSIS REQUESTED

Company Name:
Address: Wool End
Phone: 978-698-9090
Project Name: Texton Gerham
Project Location: Providence, RI
Project Number: 2651190114
Project Manager: Herb Colby
Con-Test Quote Name/Number: see PM
Invoice Recipient: SocPM
Sampled By: Mark Maggiore

Request Turnaround Time
7-Day [checked] 10-Day
Due Date:
Rush Approval Required
1-Day 3-Day
2-Day 4-Day
Data Delivery
Format: PDF EXCEL
Other: EDD
CLP Like Data Pkg Required:
Email To: Denise.King@contestlabs.com
Fax To #:

Table with columns for Lab Use, Client Use, Collection Data, Duration, Flow Rate, Matrix, Volume, and various pressure readings (Initial, Final, Lab Receipt). Includes handwritten data for 9 samples.

Comments:

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

Matrix Codes:
SG = SOIL GAS
IA = INDOOR AIR
AMB = AMBIENT
SS = SUB SLAB
D = DUP
BL = BLANK
O = Other

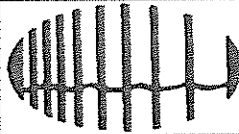
Relinquished by: (signature)
Received by: (signature)
Relinquished by: (signature)
Received by: (signature)
Relinquished by: (signature)
Received by: (signature)

Date/Time:
Detective Unit Requirements
Special Requirements
Project Entity
Government Municipality MWRA WRTA
Federal 21 J School
City Brownfield MBTA

con-test ANALYTICAL LABORATORY logo
NELAC and AIHA-LAP, LLC Accredited
Other: Chromatogram AIHA-LAP, LLC
PCB ONLY: Soxhlet Non Soxhlet



I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples \_\_\_\_\_



**con-test**<sup>®</sup>  
ANALYTICAL LABORATORY

Doc# 278 Rev 6 2017

**Air Media Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False**

Client WOOD

Received By CF Date 9/6/2019 Time 1700  
 How were the samples received? In Cooler \_\_\_\_\_ On Ice \_\_\_\_\_ No Ice \_\_\_\_\_  
 In Box T Ambient \_\_\_\_\_ Melted Ice \_\_\_\_\_  
 Were samples within Temperature Compliance? 2-6°C N/A By Gun # \_\_\_\_\_ Actual Temp - \_\_\_\_\_  
 By Blank # \_\_\_\_\_ Actual Temp - \_\_\_\_\_  
 Was Custody Seal Intact? N/A Were Samples Tampered with? N/A  
 Was COC Relinquished? T Does Chain Agree With Samples? T  
 Are there any loose caps/valves on any samples? F  
 Is COC in ink/ Legible? T  
 Did COC Include all Client T Analysis T Sampler Name T  
 Pertinent Information? Project T ID's T Collection Dates/Times T  
 Are Sample Labels filled out and legible? T  
 Are there Rushes? F Who was notified? \_\_\_\_\_  
 Samples are received within holding time? T  
 Proper Media Used? T Individually Certified Cans? F  
 Are there Trip Blanks? F Is there enough Volume? T

Containers:	#	Size	Regulator	Duration	Accessories:		
Summa Cans	13	6L	13	30 MIN	Nut/Ferrule	4	IC Train
Tedlar Bags					Tubing	12 FT	
TO-17 Tubes					T-Connector		Shipping Charges
Radiello					Syringe		
Pufs/TO-11s					Tedlar		

Can #'s	1717	1322			Reg #'s	4303	4283		
	1222	1870				4212	4365		
	1636	1165				4213	4180		
	1247	1844				4101	4285		
	1334	1735				4304	4210		
	1174	1880				4194	4073		
	1100					9067			
Unused Media					Pufs/TO-17's				
		1473	4366	-6.2					

Comments:

# **Appendix B**

Analytical Laboratory Detection Limits

## Analytical Method Information

Analyte	MDL	Reporting	Surrogate	Duplicate	Matrix Spike		Blank Spike / LCS	
		Limit	%R	RPD	%R	RPD	%R	RPD
<b>TO-15 ppbv low level in Air (EPA TO-15)</b>								
Preservation: NA								
Container: SUMMA Canister								
Amount Required:								
Hold Time: 30 days								
Acetone	0.69	2.0 ppbv		25				70 - 130
Benzene	0.026	0.050 ppbv		25				70 - 130
Benzyl chloride	0.0097	0.050 ppbv		25				70 - 130
Bromodichloromethane	0.011	0.050 ppbv		25				70 - 130
Bromoform	0.0096	0.050 ppbv		25				70 - 130
Bromomethane	0.034	0.050 ppbv		25				70 - 130
1,3-Butadiene	0.026	0.050 ppbv		25				70 - 130
2-Butanone (MEK)	0.037	2.0 ppbv		25				70 - 130
Carbon Disulfide	0.017	0.50 ppbv		25				70 - 130
Carbon Tetrachloride	0.012	0.050 ppbv		25				70 - 130
Chlorobenzene	0.017	0.050 ppbv		25				70 - 130
Chloroethane	0.019	0.050 ppbv		25				70 - 130
Chloroform	0.012	0.050 ppbv		25				70 - 130
Chloromethane	0.022	0.10 ppbv		25				70 - 130
Cyclohexane	0.029	0.050 ppbv		25				70 - 130
Dibromochloromethane	0.013	0.050 ppbv		25				70 - 130
1,2-Dibromoethane (EDB)	0.011	0.050 ppbv		25				70 - 130
1,2-Dichlorobenzene	0.013	0.050 ppbv		25				70 - 130
1,3-Dichlorobenzene	0.011	0.050 ppbv		25				70 - 130
1,4-Dichlorobenzene	0.013	0.050 ppbv		25				70 - 130
Dichlorodifluoromethane (Freon 12)	0.022	0.050 ppbv		25				70 - 130
1,1-Dichloroethane	0.014	0.050 ppbv		25				70 - 130
1,2-Dichloroethane	0.014	0.050 ppbv		25				70 - 130
1,1-Dichloroethylene	0.012	0.050 ppbv		25				70 - 130
cis-1,2-Dichloroethylene	0.019	0.050 ppbv		25				70 - 130
trans-1,2-Dichloroethylene	0.013	0.050 ppbv		25				70 - 130
1,2-Dichloropropane	0.017	0.050 ppbv		25				70 - 130
cis-1,3-Dichloropropene	0.013	0.050 ppbv		25				70 - 130
trans-1,3-Dichloropropene	0.013	0.050 ppbv		25				70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Fr	0.012	0.050 ppbv		25				70 - 130
1,4-Dioxane	0.32	0.50 ppbv		25				70 - 130
Ethanol	0.89	2.0 ppbv		25				70 - 130
Ethyl Acetate	0.037	0.050 ppbv		25				70 - 130
Ethylbenzene	0.014	0.050 ppbv		25				70 - 130
4-Ethyltoluene	0.011	0.050 ppbv		25				70 - 130
Heptane	0.016	0.050 ppbv		25				70 - 130
Hexachlorobutadiene	0.019	0.050 ppbv		25				70 - 130
Hexane	0.088	2.0 ppbv		25				70 - 130
2-Hexanone (MBK)	0.013	0.050 ppbv		25				70 - 130
Isopropanol	0.061	2.0 ppbv		25				70 - 130
Methyl tert-Butyl Ether (MTBE)	0.015	0.050 ppbv		25				70 - 130
Methylene Chloride	0.061	0.50 ppbv		25				70 - 130
4-Methyl-2-pentanone (MIBK)	0.012	0.050 ppbv		25				70 - 130
Naphthalene	0.027	0.050 ppbv		25				70 - 130
Propene	0.15	2.0 ppbv		25				70 - 130
Styrene	0.0097	0.050 ppbv		25				70 - 130

Analytical Method Information

Analyte	MDL	Reporting Limit	Surrogate %R	Duplicate RPD	Matrix Spike		Blank Spike / LCS	
					%R	RPD	%R	RPD
1,1,2,2-Tetrachloroethane	0.012	0.050 ppbv		25			70 - 130	
Tetrachloroethylene	0.014	0.050 ppbv		25			70 - 130	
Tetrahydrofuran	0.021	0.050 ppbv		25			70 - 130	
Toluene	0.016	0.050 ppbv		25			70 - 130	
1,2,4-Trichlorobenzene	0.019	0.050 ppbv		25			70 - 130	
1,1,1-Trichloroethane	0.0090	0.050 ppbv		25			70 - 130	
1,1,2-Trichloroethane	0.015	0.050 ppbv		25			70 - 130	
Trichloroethylene	0.015	0.050 ppbv		25			70 - 130	
Trichlorofluoromethane (Freon 11)	0.017	0.050 ppbv		25			70 - 130	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.014	0.050 ppbv		25			70 - 130	
1,2,4-Trimethylbenzene	0.012	0.050 ppbv		25			70 - 130	
1,3,5-Trimethylbenzene	0.010	0.050 ppbv		25			70 - 130	
Vinyl Acetate	0.025	1.0 ppbv		25			70 - 130	
Vinyl Chloride	0.021	0.050 ppbv		25			70 - 130	
m&p-Xylene	0.025	0.10 ppbv		25			70 - 130	
o-Xylene	0.014	0.050 ppbv		25			70 - 130	
surr: 4-Bromofluorobenzene (1)			70 - 130					
Bromochloromethane (1)								
1,4-Difluorobenzene (1)								
Chlorobenzene-d5 (1)								

# **Appendix C**

Historical Outdoor Reference Sample Results





**Appendix C.  
Summary of Analytical Results - Outdoor Air Reference Sampling  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Area:		Outdoor Air Reference Location																							
Location:		AA-1																							
Sample ID:		AA-1-091610	AA-1-120710	AA-1-021711	AA-1-060211	AA-1-091511	AA-1-120811	AA-1-030812	AA-1-061412	AA-1-091312	AA-1-010313	AA-1-031513	AA-1-060713	AA-1-090613	AA-1-100313	AA-1-121313	AA-1-030714	AA-1-061314	AA-1-091214	AA-1-121914	AA-01-032715	AA-1-061115	AA-1-091615	AA-1-121815	AA-1-021816
Sample Date:		9/16/2010	12/7/2010	2/17/2011	6/2/2011	9/15/2011	12/8/2011	3/8/2012	6/14/2012	9/13/2012	1/3/2013	3/15/2013	6/7/2013	9/6/2013	10/3/2013	12/13/2013	3/7/2014	6/13/2014	9/12/2014	12/19/2014	3/27/2015	6/11/2015	9/16/2015	12/18/2015	2/18/2016
Analyte	Units																								
1,1,1,2-Tetrachloroethane	ug/m3					0.62 U		0.37 U	0.37 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.42 U	0.44 U	0.44 U	0.44 U	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
1,1,1-Trichloroethane	ug/m3	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.29	0.082 U	0.1 J	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.19 U	0.19 U	0.055 U	0.19 U	0.19 U	0.19 U	0.073 J	0.19 U	0.19 U
1,1,2,2-Tetrachloroethane	ug/m3	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.21 U	0.1 U	0.21 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.23 U	0.24 U	0.24 U	0.24 U	0.069 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2-Trichloroethane	ug/m3	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.16 U	0.082 U	0.16 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.19 U	0.19 U	0.11 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
1,1-Dichloroethane	ug/m3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.063 J	0.061 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
1,1-Dichloroethene	ug/m3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.12 U	0.059 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.16	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	
1,2,4-Trichlorobenzene	ug/m3	0.37 U	0.37 U	0.37 U	0.37 U	0.74 U	0.62	0.45 U	0.12 J	0.52 U	0.52 U	0.52 U	0.26 U	0.26 U	0.25 U	0.26 U	0.26 U	0.26 U	0.15 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
1,2,4-Trimethylbenzene	ug/m3	0.94	0.25 U	1.1	0.25 U	0.25 U	0.16	0.15 U	0.15 U	0.26	0.17 U	0.069 J	0.21	0.17 U	0.19	0.17 U	0.17 U	0.51	0.069 J	0.17 U	0.2	0.059 J	0.29	0.31	0.17 U
1,2-Dibromoethane (EDB)	ug/m3	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.23 U	0.12 U	0.23 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.26 U	0.27 U	0.27 U	0.27 U	0.077 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,2-Dichlorobenzene	ug/m3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.34	0.18 U	0.18 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	ug/m3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.066 J	0.061 U	0.046 J	0.14 U	0.14 U	0.057 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.037 J	0.14 U	0.14 U	0.054 J	0.14 U	0.14 U	0.14 U
1,2-Dichloropropane	ug/m3	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.069 U	0.14 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.046 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
1,2-Dichlorotetrafluoroethane	ug/m3	0.35 U																							0.25 U
1,3,5-Trimethylbenzene	ug/m3	0.28	0.25 U	0.33	0.25 U	0.25 U	0.068 J	0.15 U	0.15 U	0.16 J	0.17 U	0.17 U	0.17 U	0.17 U	0.047 J	0.17 U	0.17 U	0.18	0.098 U	0.17 U	0.062 J	0.17 U	0.076 J	0.17 U	0.17 U
1,3-Butadiene	ug/m3	0.29	0.11 U	0.11 U	0.11 U	0.11 U	0.066 U	0.066 U	0.066 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.075 U	0.078 U	0.078 U	0.078 U	0.044 U	0.078 U	0.078 U	0.078 U	0.18	0.23	0.078 U
1,3-Dichlorobenzene	ug/m3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.18 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U	0.12 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,4-Dichlorobenzene	ug/m3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.18 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.12 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,4-Dioxane	ug/m3					0.18 U																			1.3 U
2-Butanone	ug/m3	2.7	0.37	1.8 B	2.9 U	5.9 J	0.35 J	1.4 J	1.1 J	2 J	4.1 J	1.9 J	3.9 J	3.7 J	0.94 J	0.82 J	1.4 J	2.2 J	1.1 J	1.2 J	0.96 J	2.1 J	1 J	2 J	0.69 J
2-Hexanone	ug/m3	0.41	0.2 U	0.2 U	4.1 U	0.67	0.12 U	0.34	0.14	0.27	0.14 U	0.13 J	0.49	0.32	0.14 U	0.14 U	0.26	0.34	0.16	0.14 U	0.17	0.14 U	0.14 U	0.14 U	0.14 U
4-Ethyltoluene	ug/m3	0.3	0.25 U	0.34	0.25 U	0.25 U	0.053 J	0.15 U	0.15 U	0.093 J	0.17 U	0.17 U	0.17 U	0.17 U	0.063 J	0.17 U	0.17 U	0.18	0.098 U	0.17 U	0.079 J	0.17 U	0.093 J	0.17 U	0.17 U
4-Methyl-2-pentanone	ug/m3	2.8	0.2 U	0.2 U	0.2 U	0.2 J	0.12 U	0.12 U	0.23	0.1 J	0.14 U	0.083 J	0.24	0.14 U	0.14 U	0.14 U	0.14 U	0.2	0.036 J	0.14 U	0.092 J	0.14 U	0.14 U	0.14 U	0.14 U
Acetone	ug/m3	14	5.7 B	19 B	8.7 B	20	4.9	9.4	10	12 B	3.3	18	28	16	12	26	9.3	22	25	10	8.7	10	13	18	6.3
Benzene	ug/m3	1.2	0.28	2.3	0.16 U	0.19	0.4	0.29	0.2	0.68	0.11	1	0.31	0.7	0.95	0.43	1	0.94	0.2	0.58	0.67	0.41	0.82	1.4	0.45
Benzyl chloride	ug/m3	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.16 U	0.16 U	0.16 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.052 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Bromodichloromethane	ug/m3	0.33 U	0.34 U	0.34 U	0.34 U	0.34 U	0.2 U	0.1 U	0.2 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.23 U	0.24 U	0.24 U	0.24 U	0.067 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Bromoform	ug/m3	0.51 U	0.52 U	0.52 U	0.52 U	0.52 U	0.31 U	0.31 U	0.31 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.35 U	0.36 U	0.36 U	0.36 U	0.21 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
Bromomethane	ug/m3	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.12 U	0.12 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.078 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Carbon disulfide	ug/m3	0.16 U	0.38	0.16 U	0.16 U	1.6 U	0.058 J	0.93 U	0.11 J	1.1 U	1.1 U	0.052 J	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.098 J	1.1 U	0.057 J	1.1 U	0.09 J	1.1 U	1.1 U	1.1 U
Carbon tetrachloride	ug/m3	0.43	0.42	0.48	0.53	0.48	0.49	0.43	0.43	0.36	0.22	0.41	0.55	0.47	0.43	0.45	0.22	0.42	0.45	0.36	0.34	0.36	0.43	0.55	0.38
Chlorobenzene	ug/m3	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.14 U	0.14 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.046 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Chloroethane	ug/m3	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.079 U	0.079 U	0.079 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.089 U	0.093 U	0.093 U	0.11	0.053 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U
Chloroform	ug/m3	0.24 U	0.24 U	0.24 U	0.24 U	0.24 J	0.094 J	0.073 U	0.067 J	0.096 J	0.17 U	0.21	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.082	0.082 J	0.065 J	0.11 J	0.18	0.31	0.17 U
Chloromethane	ug/m3	0.99	0.94	1	0.96	1.4	0.062 U	1.1	1.5	1.1	0.072	1.6	1.4	1.1	0.96	1.1	1.3	1.4	0.64	0.96	1.1	1.2	1.1	1.2	1
cis-1,2-Dichloroethene	ug/m3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.12	0.059 U	0.12 U	0.14 U	0.14 U	0.092 J	0.14 U	0.16	0.13 U	0.14 U	0.14 U	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
cis-1,3-Dichloropropene	ug/m3	0.22 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.068 U	0.14 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U	0.16 U	0.045 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Cyclohexane	ug/m3	0.46	0.17 U	0.17 U	0.17 U	0.17 U	0.1 U	0.1 U	0.1 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.31	0.069 U	0.12 U	0.12 U	0.12 U	0.12 U	0.59	0.12 U
Dibromochloromethane	ug/m3	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.26 U	0.13 U	0.26 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.29 U	0.3 U	0.3 U	0.3 U	0.085 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dichlorodifluoromethane	ug/m3	2.9	1.9	3.1	1.9	1.7	2.5	2	2.4	2.8	0.17	1.7	3	2	1.7	2.7	1.4	2	2.2	2.1	1.4	2.3	1.7	2.7	1.6
Ethanol	ug/m3	14	2.3	12	2.7	5.8	1.5 J	4.1	7.4	5.2	2.6	1.2 J	6.1	6.7	6.7	5.4	9	17	2.9	2.7	2 J	4.8	12	7.3	2.5 J
Ethyl acetate	ug/m3	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.46	0.56	0.43	0.67	0.13	1.1	0.56	17	0.12 U	0.13 U	0.18	0.13 U	0.17	0.13 U	0.27	0.13 U	0.68	0.14	0.42
Ethylbenzene	ug/m3	1.4	0.22 U	1.1	0.22 U	0.22 J	0.31	0.13 U	0.065 J	0.19	0.15 U	0.12 J	0.16	0.15 U	0.21	0.15 U	0.16	0.44	0.047 J	0.046 J	0.19	0.1 J	0.37	0.46	0.15 U
Hexachlorobutadiene	ug/m3	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.32 U	0.32 U	0.32 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.36 U	0.37 U	0.37 U	0.37 U	0.21 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
Hexane	ug/m3	1.2	0.35 U	3.3	0.88	7 J	0.47 J	0.54 J	1.3 J	0.67 J	4.9 J	1.3 J	1.8 J	2.3 J	0.81 J	0.32 J	0.44 J	1.2 J	0.19 J	0.39 J	5.1	0.29 J	1 J	0.64 J	0.28 J
Isopropyl alcohol	ug/m3	0.25 U	0.29	2.4	1.2 U	4.9 J	0.6 J	0.88 J	2.9 U	0.58 J	3.4 J	0.52 J	1.3 J	6.2	3.3 U	0.77 J	0.92 J	3.1 J	0.61 J	3.4 U	0.65 J	0.44 J	2.7 J	0.68 J	3.4 U
m,p-Xylene	ug/m3	3.7	0.43 U	3.3	0.43 U	0.43 J	0.41	0.17 J	0.18 J	0.64	0.3 U	0.34	0.58	0.21 J	0.53	0.3 U	0.42								

Appendix C.  
Summary of Analytical Results - Outdoor Air Reference Sampling  
Former Gorham Manufacturing Site  
Providence, Rhode Island

Area:		Outdoor Air Reference Location						
Location:		AA-1						
Sample ID:	AA-1-080516	AA-1-021017	AA-1-090717	AA-1-022818	AA-1-091218	AA-1-020819	AA-1-041119	AA-1-090619
Sample Date:	8/5/2016	2/10/2017	9/7/2017	2/28/2018	9/12/2018	2/8/2019	4/11/2019	9/6/2019
Analyte	Units							
1,1,1,2-Tetrachloroethane	ug/m3		0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
1,1,1-Trichloroethane	ug/m3	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
1,1,2,2-Tetrachloroethane	ug/m3	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2-Trichloroethane	ug/m3	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.42	0.19 U
1,1-Dichloroethane	ug/m3	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
1,1-Dichloroethene	ug/m3	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
1,2,4-Trichlorobenzene	ug/m3	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.52 U	0.26 U
1,2,4-Trimethylbenzene	ug/m3	0.17 U	0.17 U	0.17 U	0.12 J	0.18	0.17 U	0.17 U
1,2-Dibromoethane (EDB)	ug/m3	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,2-Dichlorobenzene	ug/m3	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.84 U	0.21 U
1,2-Dichloroethane	ug/m3	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
1,2-Dichloropropane	ug/m3	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
1,2-Dichlorotetrafluoroethane	ug/m3	0.25 U						
1,3,5-Trimethylbenzene	ug/m3	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
1,3-Butadiene	ug/m3	0.078 U	0.078 U	0.9	0.078 U	0.078 U	0.078 U	0.078 U
1,3-Dichlorobenzene	ug/m3	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.49 J	0.21 U
1,4-Dichlorobenzene	ug/m3	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.5 J	0.21 U
1,4-Dioxane	ug/m3	1.3 U						
2-Butanone	ug/m3	1.2 J	0.91 J	2.4 J	1.8 J	1.2 J	2.1 J	0.71 J
2-Hexanone	ug/m3	0.14 U	0.14 U	0.14 U	0.43	0.14 U	0.14 U	0.14 U
4-Ethyltoluene	ug/m3	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
4-Methyl-2-pentanone	ug/m3	0.14 U	0.14 U	0.3	0.072 J	0.14 U	0.14 U	0.14 U
Acetone	ug/m3	11	3.1 J	16	24	6.2	10	6.9
Benzene	ug/m3	0.35	0.37	2.2	0.47	0.39	1.4	0.22
Benzyl chloride	ug/m3	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Bromodichloromethane	ug/m3	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Bromoform	ug/m3	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
Bromomethane	ug/m3	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	1.4 U
Carbon disulfide	ug/m3	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Carbon tetrachloride	ug/m3	0.39	0.44	0.4	0.39	0.49	0.91	0.44
Chlorobenzene	ug/m3	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Chloroethane	ug/m3	0.093 U	0.093 U	0.19 U	0.093 U	0.093 U	0.19 U	0.093 U
Chloroform	ug/m3	0.17 U	0.17 U	0.17 U	0.086 J	0.11 J	0.53	0.17 U
Chloromethane	ug/m3	1.2	1.2	1.2	1.2	0.93	1.3	1
cis-1,2-Dichloroethene	ug/m3	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.33	0.14 U
cis-1,3-Dichloropropene	ug/m3	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Cyclohexane	ug/m3	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Dibromochloromethane	ug/m3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.64	0.3 U
Dichlorodifluoromethane	ug/m3	0.64	1	1.5	1.7	2.1	2.2	1.3
Ethanol	ug/m3	5.5	2.5 J	2.2 J	6.7	2.1 J	12	4
Ethyl acetate	ug/m3	6.5	2.3	0.25 U	0.17	0.25 U	0.13 U	1.1
Ethylbenzene	ug/m3	0.16	0.15 U	0.67	0.17	0.18	0.68	0.15 U
Hexachlorobutadiene	ug/m3	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.75 U	0.37 U
Hexane	ug/m3	7.7	0.69 J	0.4 J	0.31 J	0.47 J	2.2 J	4.9 U
Isopropyl alcohol	ug/m3	0.88 J	0.76 J	0.52 J	0.55 J	0.46 J	1.6 J	1.2 J
m,p-Xylene	ug/m3	0.46	0.35	2.4	0.56	0.48	1.7	0.3 U
Methyl methacrylate	ug/m3		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Methylene chloride	ug/m3	3.5	1 J	0.26 J	0.39 J	0.28 J	0.94 J	0.29 J
Methyl-t-butyl ether	ug/m3	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Naphthalene	ug/m3	0.18 U						
n-Heptane	ug/m3	0.24	0.14 U	0.47	0.18	0.31	1.1	0.14 U
o-Xylene	ug/m3	0.17	0.12 J	0.67	0.21	0.2	0.72	0.15 U
Propylene (Propene)	ug/m3	2.4 U	0.63 J	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
Styrene	ug/m3	0.15 U	0.15 U	0.46	0.15 U	0.15 U	0.15 U	0.15 U
Tetrachloroethene	ug/m3	0.41	0.24 U	0.24 U	0.24 U	0.24 U	1.1	0.24 U
Tetrahydrofuran	ug/m3	0.1 U	0.1 U	0.21 U	0.1 U	0.1 U	0.1 U	0.1 U
Toluene	ug/m3	1.1	2.4	2.2	0.77	1.1	2.8	0.31
trans-1,2-Dichloroethene	ug/m3	0.14 U	0.14 U	0.14 U	0.14 U	0.058 J	0.33 J	0.14 U
trans-1,3-Dichloropropene	ug/m3	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Trichloroethene	ug/m3	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.34
Trichlorofluoromethane	ug/m3	1.4	1.3	1.1	1.2	1.2	1.8	1.6
Trichlorotrifluoroethane	ug/m3	0.47 J	0.55 J	0.46 J	0.48 J	0.53 J	1.1 U	0.52 J
Vinyl acetate	ug/m3	1.6 J	2.5 U	2.5 U	0.99 J	0.72 J	2.5 U	2.5 U
Vinyl chloride	ug/m3	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U

Notes:  
NA - not available  
U - Not detected, value is the detection limit  
B - Compounds detected in method blank as well as field sample  
J - Indicates compound was detected at an estimated value.  
D - Result from diluted analyses  
ug/m3 - micrograms per cubic meter

Prepared By: AKN, 9/16/2019  
Checked By: HWC, 9/16/2019

# **Appendix D1**

Summary of Historical Analytical Results –  
Indoor Air Samples for Small Retail Space

**Appendix D1.  
Summary of Analytical Results - Indoor Air Sampling for Small Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Area:			Eastern Small Retail Space																							
Location:			IA-5																							
Sample ID:			IA-5	IA-5-020309	IA-5-021109	IA-5-021809	IA-5-022609	IA-5-030609	IA-5-041409	IA-5-051509	IA-5-061109	IA-5-091709	IA-5-122909	IA-5-032610	IA-5-070110	IA-5-091610	IA-5-120810	IA-5-021711	IA-5-060211	IA-5-091511	IA-5-120811	IA-5-030812	IA-5-061412	IA-5-091312	IA-5-010313	
Sample Date:			1/16/2009	2/3/2009	2/11/2009	2/18/2009	2/26/2009	3/6/2009	4/14/2009	5/15/2009	6/11/2009	9/17/2009	12/29/2009	3/26/2010	7/1/2010	9/16/2010	12/8/2010	2/17/2011	6/2/2011	9/15/2011	12/8/2011	3/8/2012	6/14/2012	9/13/2012	1/3/2013	
Analyte	Units	CT IACTIND 2003																								
1,1,1,2-Tetrachloroethane	ug/m3	1.1																								
1,1,1-Trichloroethane	ug/m3	500	48	0.92	0.27 U	0.27 U	0.27 U	0.27 U	0.98	0.27 U	0.27 U	0.27 U	0.27 U	0.38	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.24 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	
1,1,2-Trichloroethane	ug/m3	12	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.19 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	
1,1-Dichloroethane	ug/m3	430	1.8	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,1-Dichloroethene	ug/m3	20	0.58	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,2,4-Trichlorobenzene	ug/m3	NA	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.26 U	0.37 U	0.37 U	0.37 U	0.75 U	0.75 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.74 U	22	0.45 U	0.45 U	0.52 U	0.52 U
1,2,4-Trimethylbenzene	ug/m3	52	0.25 U	0.32	0.33	0.36	0.25 U	0.25 U	0.2	0.25 U	0.35	0.25 U	0.25 U	0.25 U	0.73	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
1,2-Dibromoethane (EDB)	ug/m3	0.038	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.27 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	
1,2-Dichlorobenzene	ug/m3	410	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	
1,2-Dichloroethane	ug/m3	0.31	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,2-Dichloropropane	ug/m3	0.42	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	
1,2-Dichlorotetrafluoroethane	ug/m3	NA	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.25 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	
1,3,5-Trimethylbenzene	ug/m3	52	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
1,3-Butadiene	ug/m3	NA	0.11 U	0.11 U	0.11 U	0.25	0.11 U	0.11 U	0.08 U	0.11 U	0.11 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	
1,3-Dichlorobenzene	ug/m3	410	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	
1,4-Dichlorobenzene	ug/m3	24	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	
1,4-Dioxane	ug/m3	NA																								
2-Butanone	ug/m3	500	7.2	2.4	2.7	2.6	0.75	0.45	3.8	1.9	5.3	2.1	0.79	1.5	2.1	1.4	0.78	0.78 B	3.6	5.9 J	0.98 J	2 J	0.94 J	2.3 J	4.1 J	
2-Hexanone	ug/m3	NA	0.2 U	0.48	0.38	0.27	0.2 U	0.2 U	0.47	0.45	1.1	0.48	0.2 U	0.23	0.44	0.2 U	0.2 U	0.2 U	4.1 U	0.2 J	0.13	0.32	0.081 J	0.17	0.14	
4-Ethyltoluene	ug/m3	NA	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	
4-Methyl-2-pentanone	ug/m3	200	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.18	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
Acetone	ug/m3	500	32	11	21	20	9.5	6.5	14	14	46	16	15	11	18	17	6.4 B	9.5 B	24 B	15	6.6	11	13	13 B	3.3	
Benzene	ug/m3	3.3	0.79	0.6	0.99	1.6	0.41	0.55	0.62	0.49	0.53	0.35	0.45	0.65	0.16 U	1.1	0.26	1.1	0.33	0.29	0.38	0.34	0.2	0.53	0.11	
Benzyl chloride	ug/m3	NA	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.19 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	
Bromodichloromethane	ug/m3	0.46	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.24 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	
Bromoform	ug/m3	7.3	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.36 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	
Bromomethane	ug/m3	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.14 U	0.23	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	
Carbon disulfide	ug/m3	NA	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.12 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	
Carbon tetrachloride	ug/m3	0.54	0.33	0.44	0.5	0.55	0.47	0.61	0.44	0.64	0.46	0.39	0.41	0.48	0.53	0.44	0.54	0.6	0.59	0.48	0.49	0.46	0.42	0.38	0.22	
Chlorobenzene	ug/m3	200	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	
Chloroethane	ug/m3	500	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.1 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	
Chloroform	ug/m3	0.5	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.17 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	
Chloromethane	ug/m3	80	1.1	1	1.5	1.4	1.1	1.1	1.1	1	1.4	1	2	1.2	1	1	0.76	0.96	1.1	1.3	1	1.1	1.4	1.2	0.072	
cis-1,2-Dichloroethene	ug/m3	100	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
cis-1,3-Dichloropropene	ug/m3	NA	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.16 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	
Cyclohexane	ug/m3	NA	0.17 U	0.17 U	0.38	0.41	0.17 U	0.17 U	0.12 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	
Dibromochloromethane	ug/m3	NA	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.31 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	
Dichlorodifluoromethane	ug/m3	500	2	2.2	2.5	2.7	2.6	2.6	1.9	2.5	2.2	2.1	1.9	1.8	2.4	1.9	2.3	3.1	1.7	2	2.6	2	2.9	2.8	0.17	
Ethanol	ug/m3	NA	590	12	23	140	85	32	41	180	500	62	51	25	58	150	2.4	14	7.7	7.9	5.4	14	43	11	2.6	
Ethyl acetate	ug/m3	NA	0.75	0.37 U	0.18 U	0.18 U	0.37 U	0.18 U	0.26 U	0.18 U	0.31	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	
Ethylbenzene	ug/m3	290	0.22 U	0.25	0.33	0.43	0.43	0.22 U	0.22 U	0.24	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	
Hexachlorobutadiene	ug/m3	NA	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.75 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	
Hexane	ug/m3	NA	0.84	0.54	1.1	0.99	0.39	0.5	0.71	0.58	1	0.52	0.57	0.43	0.48	1	0.3	1.3	1.7	7 J	0.36 J	0.48 J	0.57 J	1.2 J	4.9 J	
Isopropyl alcohol	ug/m3	NA	3.8	3.5	580	2.9	3	1.3	1.7	2	19	3.5	3.8	3.8	1.9	8.2	0.12 U	1.7	1.2 U	6.4	2.9 U	2.9 U	2.9 U	3.3 J	3.4 J	
m,p-Xylene	ug/m3	NA	0.6	0.74	0.91	1.2	0.43 U	0.43 U	0.68	0.51	0.88	0.59	0.43 U	0.46	1.2	2.4	0.43 U	0.85	0.57	0.53	3	0.12 J	0.36	0.97	0.3	
Methyl methacrylate	ug/m3	NA																								
Methylene chloride	ug/m3	17	2	3.6	5.2	1.1	1.2	0.74	2.5</																	

**Appendix D1.  
Summary of Analytical Results - Indoor Air Sampling for Small Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Area:			Eastern Small Retail Space																		Small Center Retail Space				
Location:			IA-5																		IA-6				
Sample ID:			IA-5-031513	IA-5-060713	IA-5-090613	IA-5-121313	IA-5-030714	IA-5-061314	IA-5-091214	IA-5-121914	IA-05-032715	IA-5-061115	IA-5-091615	IA-5-121815	IA-5-021816	IA-5-080516	IA-5-021017	IA-5-090717	IA-5-022818	IA-5-091218	IA-5-020819	IA-5-090619	IA-6	IA-6-020309	IA-6-021109
Sample Date:			3/15/2013	6/7/2013	9/6/2013	12/13/2013	3/7/2014	6/13/2014	9/12/2014	12/19/2014	3/27/2015	6/11/2015	9/16/2015	12/18/2015	2/18/2016	8/5/2016	2/10/2017	9/7/2017	2/28/2018	9/12/2018	2/8/2019	9/6/2019	1/16/2009	2/3/2009	2/11/2009
Analyte	Units	CT IACTIND 2003																							
1,1,1,2-Tetrachloroethane	ug/m3	1.1	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U		0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U			
1,1,1-Trichloroethane	ug/m3	500	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	110	3.9	0.27 U
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.069 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	ug/m3	12	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.11 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.27 U	0.27 U	0.27 U
1,1-Dichloroethane	ug/m3	430	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	3.9	0.2 U	0.2 U
1,1-Dichloroethene	ug/m3	20	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	1.2	0.2 U	0.2 U
1,2,4-Trichlorobenzene	ug/m3	NA	0.52 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.15 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.52 U	0.26 U	0.37 U	0.37 U
1,2,4-Trimethylbenzene	ug/m3	52	0.072 J	0.21	0.27	0.17 U	0.69	0.23	0.19	0.17 U	0.13 J	0.12 J	0.23	0.2	0.17 U	0.27	0.17 U	0.19	0.17 U	0.3	0.17 U	0.17 U	0.75	0.32	0.29
1,2-Dibromoethane (EDB)	ug/m3	0.038	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.077 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.38 U	0.38 U	0.38 U
1,2-Dichlorobenzene	ug/m3	410	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.12 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.67 J	0.21 U	0.3 U	0.3 U
1,2-Dichloroethane	ug/m3	0.31	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.04	0.14 U	0.045 J	0.065 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.057 J	0.08 J	0.14 U	0.14 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	ug/m3	0.42	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.046 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.13 J	0.16 U	0.23 U	0.23 U
1,2-Dichlorotetrafluoroethane	ug/m3	NA												0.25 U		0.25 U							0.35 U	0.35 U	0.35 U
1,3,5-Trimethylbenzene	ug/m3	52	0.17 U	0.17 U	0.17 U	0.17 U	0.19	0.17 U	0.057 J	0.17 U	0.038 J	0.038 J	0.066 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.42	0.17 U	0.25 U	0.25 U	0.25 U
1,3-Butadiene	ug/m3	NA	0.078 U	0.078 U	0.078 U	0.078 U	0.58	0.078 U	0.044 U	0.078 U	0.078 U	0.078 U	0.19	0.14	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.057 J	0.078 U	0.11 U	0.11 U
1,3-Dichlorobenzene	ug/m3	410	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.12 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.5 J	0.21 U	0.3 U	0.3 U
1,4-Dichlorobenzene	ug/m3	24	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.12 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.28	0.57 J	0.21 U	0.3 U
1,4-Dioxane	ug/m3	NA												1.3 U		1.3 U									
2-Butanone	ug/m3	500	1.3 J	3.2 J	2.4 J	2.2 J	1.8 J	3.7 J	2.1 J	0.8 J	2.1 J	1.4 J	1.6 J	1.8 J	0.86 J	1.3 J	0.67 J	2.9 J	1.2 J	1.9 J	2.1 J	0.37 J	120	10	3.2
2-Hexanone	ug/m3	NA	0.16	0.48	0.44	0.14 U	0.32	0.52	0.29	0.14 U	0.43	0.16	0.14 U	0.14 U	0.15	0.31	0.14 U	0.57	0.26	0.14 U	0.14 U	0.14 U	0.2 U	0.42	0.37
4-Ethyltoluene	ug/m3	NA	0.17 U	0.17 U	0.17 U	0.17 U	0.22	0.17 U	0.09 J	0.17 U	0.17 U	0.041 J	0.079 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.25 U	0.25 U	0.25 U
4-Methyl-2-pentanone	ug/m3	200	0.14 U	0.19	0.14 U	0.14 U	0.24	0.35	0.17	0.14 U	0.19	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.37	0.078 J	0.14 U	0.14 U	0.14 U	0.2 U	0.2 U	0.2 U
Acetone	ug/m3	500	9.7	24	19	40	12	25	14	10	14	12	18	23	7.1	18	5.4	24	10	18	12	6.1	44	14	14
Benzene	ug/m3	3.3	0.8	0.27	0.68	0.55	2.9	0.55	0.25	0.4	0.54	0.33	0.76	0.93	0.45	0.29	0.45	0.53	0.57	0.44	1.1	0.41	1	0.6	0.98
Benzyl chloride	ug/m3	NA	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.052 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.26 U	0.26 U	0.26 U
Bromodichloromethane	ug/m3	0.46	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.067 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.33 U	0.33 U	0.33 U
Bromoform	ug/m3	7.3	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.21 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.51 U	0.51 U	0.51 U
Bromomethane	ug/m3	NA	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.078 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	1.4 U	0.19 U	0.19 U	0.19 U
Carbon disulfide	ug/m3	NA	1.1 U	1.1 U	0.13 J	1.1 U	1.1 U	1.1 U	0.041 J	1.1 U	1.1 U	0.096 J	0.098 J	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.063 J	0.19 J	1.1 U	1.1 U	0.16 U	0.16 U	0.16 U
Carbon tetrachloride	ug/m3	0.54	0.37	0.59	0.47	0.5	0.43	0.45	0.45	0.36	0.35	0.37	0.44	0.47	0.33	0.42	0.43	0.41	0.39	0.49	0.88	0.37	0.39	0.42	0.52
Chlorobenzene	ug/m3	200	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.046 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.23 U	0.23 U	0.23 U
Chloroethane	ug/m3	500	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.053 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.19 U	0.093 U	0.093 U	0.093 U	0.19 U	0.13 U	0.13 U	0.13 U
Chloroform	ug/m3	0.5	0.069 J	0.17 U	0.17	0.17 U	0.17 U	0.17 U	0.12	0.099 J	0.062 J	0.14 J	0.19	0.17	0.17 U	0.19	0.17	0.84	0.11 J	0.36	0.55	0.24	0.24 U	0.24 U	0.24 U
Chloromethane	ug/m3	80	1.2	1.5	1.2	1.3	1.3	1.2	0.67	0.81	0.97	1.3	1.1	1.3	0.91	1.1	1.2	2.4	1.2	1.2	1.3	0.97	1.3	0.9	1.4
cis-1,2-Dichloroethene	ug/m3	100	0.14 U	0.14 U	0.18	0.14 U	0.14 U	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.075 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.63	0.14 U	0.4	0.2 U
cis-1,3-Dichloropropene	ug/m3	NA	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.045 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.22 U	0.22 U	0.22 U
Cyclohexane	ug/m3	NA	0.12 U	0.12 U	0.12 U	0.12 U	0.4	0.12 U	0.069 U	0.12 U	0.12 U	0.12 U	0.18	0.39	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.17 U	0.17 U	0.25
Dibromochloromethane	ug/m3	NA	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.085 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.43 U	0.43 U	0.43 U
Dichlorodifluoromethane	ug/m3	500	1.6	3.4	1.9	2.5	1.3	2.2	2	1.9	1.3	2	1.7	2.4	2.5	0.54	1.1	1.3	1.7	2.1	2.3	1.6	2	2.1	2.6
Ethanol	ug/m3	NA	1.9 J	12	15	4.5	18	20	160	7.7	12	25	13	6.8	3.4	38	3.3	130	19	33	15	24	41	23	12
Ethyl acetate	ug/m3	NA	0.13 U	1.5	0.29	0.83	0.17	0.43	0.56	0.29	5	0.17	0.61	0.46	0.47	0.64	0.13 U	0.4	0.16	0.7	0.13 U	0.13 U	0.37 U	0.37 U	0.18 U
Ethylbenzene	ug/m3	290	0.091 J	0.15 U	0.26	0.15 U	0.65	0.3	0.13	0.12 J	0.17	0.12 J	0.34	0.44	0.26	0.2	0.15 U	0.43	0.098 J	0.47	0.55	0.15 U	0.29	0.25	0.33
Hexachlorobutadiene	ug/m3	NA	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.21 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.75 U	0.37 U	1.1 U	1.1 U
Hexane	ug/m3	NA	1.1 J	1.4 J	0.75 J	0.46 J	1.4 J	0.56 J	0.33 J	0.3 J	5.1	0.42 J	0.92 J	0.48 J	0.34 J	0.82 J	4.9 U	0.43 J	0.33 J	0.77 J	0.99 J	4.9 U	1.2	0.78	0.7
Isopropyl alcohol	ug/m3	NA	3.4 U	3.4 U	3.4 U	3.4 U	2.4 J	6.5	180	0.47 J	2.6 J	9.4	5.3	3.4 U	0.68 J	5.7	0.81 J	6.2	2.3 J	26	1.7 J	1.6 J	4.7	6.6	3.2
m,p-Xylene	ug/m3	NA	0.24 J	0.49	0.81	0.3	1.9	1	0.3	0.54	0.5	0.36	1	2.1	0.2 J	0.55	0.15 J	1.1	0.27 J	1.1	1.3	0.36	0		

**Appendix D1.  
Summary of Analytical Results - Indoor Air Sampling for Small Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Area:		Small Center Retail Space																							
Location:		IA-6																							
Sample ID:		IA-6-021809	IA-6-022609	IA-6-030609	IA-6-041409	IA-6-051509	IA-6-061109	IA-6-091709	IA-6-122909	IA-6-032610	IA-6-070110	IA-6-091610	IA-6-120710	IA-6-021711	IA-6-060211	IA-6-091511	IA-6-120811	IA-6-030812	IA-6-061412	IA-6-091312	IA-6-010313	IA-6-031513	IA-6-060713	IA-6-090613	
Sample Date:		2/18/2009	2/26/2009	3/6/2009	4/14/2009	5/15/2009	6/11/2009	9/17/2009	12/29/2009	3/26/2010	7/1/2010	9/16/2010	12/7/2010	2/17/2011	6/2/2011	9/15/2011	12/8/2011	3/8/2012	6/14/2012	9/13/2012	1/3/2013	3/15/2013	6/7/2013	9/6/2013	
Analyte	Units	CT IACTIND 2003																							
1,1,1,2-Tetrachloroethane	ug/m3	1.1																							
1,1,1-Trichloroethane	ug/m3	500	0.29	0.27 U	0.27 U	1.6	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.34 U	0.34 U	0.34 U	0.24 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	
1,1,2-Trichloroethane	ug/m3	12	0.27 U	0.27 U	0.27 U	0.19 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	
1,1-Dichloroethane	ug/m3	430	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,1-Dichloroethene	ug/m3	20	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,2,4-Trichlorobenzene	ug/m3	NA	0.37 U	0.37 U	0.37 U	0.26 U	0.37 U	0.37 U	0.37 U	0.75 U	0.75 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.74 U	0.45 U	0.45 U	2.8	0.52 U	0.52 U	0.52 U	0.26 U	
1,2,4-Trimethylbenzene	ug/m3	52	1.5	0.25 U	0.25 U	0.18 U	0.25 U	0.29	0.34	0.25 U	0.25 U	0.33	0.25 U	0.35	0.25 U	0.25	0.16	0.15 U	0.21	0.17 U	0.17 U	0.076 J	0.21	0.27	
1,2-Dibromoethane (EDB)	ug/m3	0.038	0.38 U	0.38 U	0.38 U	0.27 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	
1,2-Dichlorobenzene	ug/m3	410	0.3 U	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	
1,2-Dichloroethane	ug/m3	0.31	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
1,2-Dichloropropane	ug/m3	0.42	0.23 U	0.23 U	0.23 U	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	
1,2-Dichlorotetrafluoroethane	ug/m3	NA	0.35 U	0.35 U	0.35 U	0.25 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	
1,3,5-Trimethylbenzene	ug/m3	52	0.38	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 J	0.059 J	0.15 U	0.091 J	0.17 U	0.17 U	0.17 U	0.17 U	
1,3-Butadiene	ug/m3	NA	1.1	0.11 U	0.11 U	0.08 U	0.11 U	0.11 U	0.11 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.066 U	0.066 U	0.066 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	
1,3-Dichlorobenzene	ug/m3	410	0.3 U	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	
1,4-Dichlorobenzene	ug/m3	24	0.41	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 J	0.18 U	0.18 U	0.13 J	0.21 U	0.21 U	0.21 U	0.21 U	
1,4-Dioxane	ug/m3	NA															0.18 U								
2-Butanone	ug/m3	500	2.9	2.4	2.3	1	2.5	4.1	2.4	1.8	1.4	1.1	0.89	0.87	1.9 B	2.9 U	5.9 J	1.3 J	0.63 J	1.4 J	2.8 J	4.1 J	1.4 J	0.91 J	2.8 J
2-Hexanone	ug/m3	NA	0.34	0.2 U	0.37	0.14 U	0.62	0.72	0.7	0.2 U	0.26	0.2 U	0.2 U	0.2 U	0.22	4.1 U	0.6	0.15	0.12 U	0.2	0.27	0.14 U	0.2	0.14 U	0.48
4-Ethyltoluene	ug/m3	NA	0.47	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 J	0.15 U	0.15 U	0.08 J	0.17 U	0.17 U	0.17 U	0.17 U	
4-Methyl-2-pentanone	ug/m3	200	0.36	0.2 U	0.2 U	0.14 U	0.34	0.7	0.29	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.28	0.31	0.13	0.12 U	0.92	0.25	0.14 U	0.14 U	0.3	
Acetone	ug/m3	500	25	11	8.5	6.1	11	28	20	14	6.5	14	13	11 B	14 B	19 B	26	10	7.4	15	18 B	3.3	10	20	29
Benzene	ug/m3	3.3	4.1	0.41	0.7	0.59	0.47	0.43	0.31	0.4	0.55	0.19	0.6	0.44	1.3	0.29	0.31	0.42	0.39	0.2	0.49	0.11	0.8	0.23	0.7
Benzyl chloride	ug/m3	NA	0.26 U	0.26 U	0.26 U	0.19 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	
Bromodichloromethane	ug/m3	0.46	0.33 U	0.33 U	0.33 U	0.24 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	
Bromoform	ug/m3	7.3	0.51 U	0.51 U	0.51 U	0.36 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.52 U	0.52 U	0.52 U	0.52 U	0.31 U	0.31 U	0.31 U	0.36 U	0.36 U	
Bromomethane	ug/m3	NA	0.19 U	0.19 U	0.19 U	0.14 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	
Carbon disulfide	ug/m3	NA	0.16 U	0.16 U	0.16 U	0.12 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	1.6 J	0.93 U	0.93 U	0.93 U	0.2 J	1.1 U	1.1 U	0.13 J	
Carbon tetrachloride	ug/m3	0.54	0.59	0.47	0.6	0.42	0.77	0.45	0.42	0.4	0.43	0.55	0.44	0.46	0.57	0.64	0.52	0.46	0.48	0.44	0.37	0.22	0.42	0.58	0.47
Chlorobenzene	ug/m3	200	0.23 U	0.23 U	0.23 U	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	
Chloroethane	ug/m3	500	0.13 U	0.13 U	0.13 U	0.1 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.079 U	0.079 U	0.079 U	0.093 U	0.093 U	0.093 U	0.093 U	
Chloroform	ug/m3	0.5	0.24 U	0.24 U	0.24 U	0.17 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.36	0.36	0.24 U	0.24 U	0.24 U	0.24 J	0.1 J	0.073 U	0.24	0.17	0.17 U	0.075 J	0.17 U	0.19
Chloromethane	ug/m3	80	1.5	1	1.1	1.1	1.1	1.9	0.97	1.8	1.4	1	1.1	0.95	0.92	1.1	1.4	1.3	1.2	1.4	1.2	0.072	1.4	1.5	1.1
cis-1,2-Dichloroethene	ug/m3	100	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.098 J	0.059 J	0.052 J	0.042 J	0.14 U	0.14 U
cis-1,3-Dichloropropene	ug/m3	NA	0.22 U	0.22 U	0.22 U	0.16 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.068 U	0.14 U	0.16 U	0.16 U
Cyclohexane	ug/m3	NA	0.91	0.17 U	0.17 U	0.12 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.29	0.17 U	0.1 U	0.1 U	0.2	0.12 U	0.12 U	0.12 U	
Dibromochloromethane	ug/m3	NA	0.43 U	0.43 U	0.43 U	0.31 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.26 U	0.13 U	0.26 U	0.3 U	0.3 U	0.3 U
Dichlorodifluoromethane	ug/m3	500	2.8	2.6	2.6	2	2.7	2.5	2.2	1.9	1.6	2.4	1.6	1.9	3.1	1.8	1.9	2.9	2	2.9	2.8	0.17	1.7	3.4	1.9
Ethanol	ug/m3	NA	40	13	12	8.6	51	31	12	10	7.1	18	36	5.9	10	7.7	14	24	41	67	23	2.6	2.9	20	21
Ethyl acetate	ug/m3	NA	0.22	0.37 U	0.18 U	0.26 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.48	0.69	0.31	1	0.13	0.34	0.64	0.42
Ethylbenzene	ug/m3	290	1.6	0.22 U	0.22 U	0.21	0.22 U	0.24	0.23	0.22 U	0.22 U	0.22 U	0.43	0.22 U	0.45	0.22 U	0.22 J	0.15	0.22	0.71	0.23	0.15	0.11 J	0.18	0.29
Hexachlorobutadiene	ug/m3	NA	1.1 U	1.1 U	1.1 U	0.75 U	1.1 U	1.1 U	0.53 U	1.1 U	1.1 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.32 U	0.32 U	0.32 U	0.37 U	0.37 U	0.37 U	0.37 U	
Hexane	ug/m3	NA	2.6	0.33	0.4	0.63	0.38	0.68	0.45	0.18 U	0.22	1.3	0.69	0.39	1.5	0.41	7 J	0.41 J	0.48 J	0.73 J	1 J	4.9 J	0.76 J	0.83 J	0.85 J
Isopropyl alcohol	ug/m3	NA	4.9	1.7	1.6	0.18 U	4.5	22	7	1.4	4.9	1	3.2	1.1	2.8	1.2 U	11	2.9 U	2.9 U	6.7	3.4 U	3.4 U	3.4 U	3.4 U	
m,p-Xylene	ug/m3	NA	4.9	0.43 U	0.43 U	0.51	0.43 U	0.67	0.62	0.43 U	0.51	0.58	1.1	0.43 U	1.2	0.48	0.59	0.45	0.54	0.73	0.38	0.3	0.31	0.54	0.81
Methyl methacrylate	ug/m3	NA												0.2 U	0.2 U	0.2 U	0.2 U	0.12 U	0.12 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	
Methylene chloride	ug/m3	17	1.6	0.83	0.69	2	2	2.6	0.7 U	2.9	0.7 U	4.5	0.64	0.94	3	1	1.7 J	1.5	1.8	1.5	2.2 B	1.2	1.1 J	1.3	1.1 J
Methyl-t-butyl ether	ug/m3	190	0																						

**Appendix D1.  
Summary of Analytical Results - Indoor Air Sampling for Small Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Area:			Small Center Retail Space																	Western Small Retail Space					
Location:			IA-6																	IA-7					
Sample ID:			IA-6-121313	IA-6-030714	IA-6-061314	IA-6-091214	IA-6-121914	IA-06-032715	IA-6-061115	IA-6-091615	IA-6-121815	IA-6-021816	IA-6-080516	IA-6-021017	IA-6-090717	IA-6-022818	IA-6-091218	IA-6-020819	IA-6-090619	IA-7	IA-7-020309	IA-7-021109	IA-7-021809	IA-7-022609	IA-7-030609
Sample Date:			12/13/2013	3/7/2014	6/13/2014	9/12/2014	12/19/2014	3/27/2015	6/11/2015	9/16/2015	12/18/2015	2/18/2016	8/5/2016	2/10/2017	9/7/2017	2/28/2018	9/12/2018	2/8/2019	9/6/2019	1/16/2009	2/3/2009	2/11/2009	2/18/2009	2/26/2009	3/6/2009
Analyte	Units	CT IACTIND 2003																							
1,1,1,2-Tetrachloroethane	ug/m3	1.1	0.44 U	0.44 U	0.44 U	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U		0.44 U		0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.5 U	0.44 U					
1,1,1-Trichloroethane	ug/m3	500	0.19 U	0.19 U	0.19 U	0.12	0.19 U	0.19 U	0.19 U	0.14 J	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.39	44	2.4	0.4	1.3	0.27 U	0.27 U
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.24 U	0.24 U	0.24 U	0.069 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	ug/m3	12	0.19 U	0.19 U	0.19 U	0.11 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,1-Dichloroethane	ug/m3	430	0.14 U	0.14 U	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	1.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	ug/m3	20	0.14 U	0.14 U	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.52	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trichlorobenzene	ug/m3	NA	0.26 U	0.26 U	0.26 U	0.15 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.52 U	0.26 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
1,2,4-Trimethylbenzene	ug/m3	52	0.17 U	0.55	0.21	0.29	0.17 U	0.13 J	0.13 J	0.066 J	0.17 U	0.17 U	0.31	0.17 U	0.15 J	0.17 U	0.33	0.17 U	0.29	0.25 U	0.34	0.34	0.99	0.25 U	0.25 U
1,2-Dibromoethane (EDB)	ug/m3	0.038	0.27 U	0.27 U	0.27 U	0.077 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
1,2-Dichlorobenzene	ug/m3	410	0.21 U	0.21 U	0.21 U	0.12 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.73 J	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethane	ug/m3	0.31	0.14 U	0.14 U	0.14 U	0.039 J	0.14 U	0.14 U	0.054 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.06 J	0.097 J	0.14 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	ug/m3	0.42	0.16 U	0.16 U	0.16 U	0.046 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.13 J	0.16 U	0.16 U	0.23 U	0.23 U	0.23 U	0.23 U
1,2-Dichlorotetrafluoroethane	ug/m3	NA																		0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
1,3,5-Trimethylbenzene	ug/m3	52	0.17 U	0.17 U	0.17 U	0.071 J	0.17 U	0.038 J	0.052 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Butadiene	ug/m3	NA	0.078 U	0.59	0.078 U	0.044 U	0.078 U	0.061 J	0.078 U	0.14	0.12	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.064 J	0.078 U	0.11 U	0.11 U	0.14	0.97	0.11 U	0.11 U
1,3-Dichlorobenzene	ug/m3	410	0.21 U	0.21 U	0.21 U	0.12 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.58 J	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	ug/m3	24	0.21 U	0.21 U	0.21 U	0.12 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.27	0.65 J	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dioxane	ug/m3	NA																							
2-Butanone	ug/m3	500	2.2 J	1.6 J	3.1 J	0.66 J	0.81 J	1 J	1.2 J	1.1 J	0.73 J	0.51 J	1.8 J	0.65 J	3.7 J	0.91 J	2.5 J	2.9 J	0.85 J	70	6.5	3.9	5.2	2.2	1.3
2-Hexanone	ug/m3	NA	0.14 U	0.29	0.41	0.043 J	0.14 U	0.18	0.12 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.22	0.16	0.14 U	0.14 U	0.14 U	0.2 U	0.29	0.2 U	0.91	0.2 U	0.2 U
4-Ethyltoluene	ug/m3	NA	0.17 U	0.19	0.17 U	0.073 J	0.17 U	0.045 J	0.055 J	0.059 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.55	0.17 U	0.25 U	0.25 U	0.25 U	0.27	0.25 U	0.25 U
4-Methyl-2-pentanone	ug/m3	200	0.14 U	0.22	0.24	0.092	0.14 U	0.12 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.37	0.14 U	0.14 U	0.14 U	0.14 U	0.2 U	0.2 U	0.2 U	0.42	0.2 U	0.2 U
Acetone	ug/m3	500	27	12	26	9.2	8.2	9.2	11	17	9.3	5	21	7	38	7.8	29	14	11	29	12	13	32	7.8	6.6
Benzene	ug/m3	3.3	0.53	2.4	0.67	0.26	0.37	0.53	0.23	0.56	1.1	0.39	0.41	0.61	0.5	0.64	0.49	0.94	0.48	0.95	0.75	1.1	3.2	0.67	0.73
Benzyl chloride	ug/m3	NA	0.18 U	0.18 U	0.18 U	0.052 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Bromodichloromethane	ug/m3	0.46	0.24 U	0.24 U	0.24 U	0.067 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Bromoforn	ug/m3	7.3	0.36 U	0.36 U	0.36 U	0.21 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U
Bromomethane	ug/m3	NA	0.14 U	0.14 U	0.14 U	0.078 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Carbon disulfide	ug/m3	NA	1.1 U	1.1 U	0.23 J	0.057 J	1.1 U	0.039 J	0.083 J	0.16 J	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.32 J	1.1 U	1.1 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Carbon tetrachloride	ug/m3	0.54	0.45	0.45	0.43	0.42	0.33	0.31	0.37	0.41	0.54	0.35	0.42	0.44	0.41	0.38	0.5	0.92	0.35	0.32	0.44	0.52	0.56	0.48	0.6
Chlorobenzene	ug/m3	200	0.16 U	0.16 U	0.16 U	0.046 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
Chloroethane	ug/m3	500	0.093 U	0.093 U	0.2	0.053 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.19 U	0.093 U	0.093 U	0.093 U	0.19 U	0.093 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Chloroform	ug/m3	0.5	0.17 U	0.17 U	0.25	0.11	0.082 J	0.069 J	0.15 J	0.18	0.17 U	0.17 U	0.17 U	0.17 U	0.2	0.1 J	0.45	0.17 U	0.17 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Chloromethane	ug/m3	80	1.2	1.3	1.9	1	0.88	0.95	1.2	1.1	1.3	1	1.2	1.2	1.3	1.2	1.3	1.4	1	1.7	0.98	1.4	1.5	1	1.2
cis-1,2-Dichloroethene	ug/m3	100	0.14 U	0.14 U	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.29	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,3-Dichloropropene	ug/m3	NA	0.16 U	0.16 U	0.16 U	0.045 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Cyclohexane	ug/m3	NA	0.12 U	0.34	0.16	0.069 U	0.12 U	0.12 U	0.12 U	0.12 U	0.49	0.12 U	0.12 U	0.12 U	0.12 U	0.23	0.12 U	0.12 U	0.12 U	0.17 U	0.17 U	0.32	0.7	0.17 U	0.17 U
Dibromochloromethane	ug/m3	NA	0.3 U	0.3 U	0.3 U	0.095 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
Dichlorodifluoromethane	ug/m3	500	2.5	1.5	2.1	2.1	1.9	1.4	2.6	1.7	2.3	1.5	0.55	0.99	1.4	1.7	2.2	2.2	1.7	2.1	2.2	2.6	2.7	2.6	2.6
Ethanol	ug/m3	NA	6.1	20	38	160	9.4	17	29	31	8.5	3.6	15	6.5	21	29	59	49	30	7.3	16	11	26	7.9	8.4
Ethyl acetate	ug/m3	NA	0.13 U	0.17	0.34	1.7	0.13 U	0.3	0.13 U	0.51	1.6	0.13 U	40	30	1.9	0.13	0.74	0.13 U	0.13 U	0.37 U	0.37 U	0.18 U	0.21	0.37 U	0.18 U
Ethylbenzene	ug/m3	290	0.15 U	0.56	0.2	0.18	0.088 J	0.18	0.13 J	0.22	0.26	0.15 U	0.26	0.15 U	0.27	0.11 J	0.42	0.49	0.31	0.23	0.29	0.36	0.95	0.24	0.22 U
Hexachlorobutadiene	ug/m3	NA	0.37 U	0.37 U	0.37 U	0.21 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.75 U	0.37 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Hexane	ug/m3	NA	0.38 J	1.2 J	0.69 J	0.35 J	0.29 J	4.9 J	0.32 J	0.72 J	0.9 J	4.9 U	2.1 J	1.8 J	0.75 J	0.35 J	1.4 J	4.9 U	0.35 J	0.9	0.87	0.91	2	1.1	0.6
Isopropyl alcohol	ug/m3	NA	0.85 J	1.7 J	8.1	3.4	0.52 J	3.1 J	4.7	7.7	3.4 U	3.4 U	3.3 J	1.6 J	3.4 J	6.4	35	3.1 J	3.9	3.7	6.2	3.6	8.3	0.25 U	2.7
m,p-Xylene	ug/m3	NA	0.2 J	1.6	0.64	0.36	0.31	0.44	0.35	0.53	0.87	0.2 J	0.77	0.22 J	0.81	0.27 J	1	1.1	0.9	0.61	0.82	0.94	2.8	0.73	0.43 U
Methyl methacrylate	ug/m3																								

**Appendix D1.  
Summary of Analytical Results - Indoor Air Sampling for Small Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Area:			Western Small Retail Space																							
Location:			IA-7																							
Sample ID:			IA-7-041409	IA-7-051509	IA-7-061109	IA-7-091709	IA-7-122909	IA-7-032610	IA-7-070110	IA-7-091610	IA-7-120710	IA-7-021711	IA-7-060211	IA-7-091511	IA-7-120811	IA-7-030812	IA-7-061412	IA-7-091312	IA-7-010313	IA-7-031513	IA-7-060713	IA-7-090613	IA-7-100313	IA-7-121313	IA-7-030714	
Sample Date:			4/14/2009	5/15/2009	6/11/2009	9/17/2009	12/29/2009	3/26/2010	7/1/2010	9/16/2010	12/7/2010	2/17/2011	6/2/2011	9/15/2011	12/8/2011	3/8/2012	6/14/2012	9/13/2012	1/3/2013	3/15/2013	6/7/2013	9/6/2013	10/3/2013	12/13/2013	3/7/2014	
Analyte	Units	CT IACTIND 2003																								
1,1,1,2-Tetrachloroethane	ug/m3	1.1												0.62 U		0.37 U	0.37 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.42 U	0.44 U	0.44 U	
1,1,1-Trichloroethane	ug/m3	500	0.87	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.069 J	0.082 U	0.088 J	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.19 U
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.24 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.21 U	0.1 U	0.21 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.23 U	0.24 U	0.24 U	0.24 U
1,1,2-Trichloroethane	ug/m3	12	0.19 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.16 U	0.082 U	0.16 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.19 U
1,1-Dichloroethane	ug/m3	430	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.12 U	0.061 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
1,1-Dichloroethene	ug/m3	20	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.12 U	0.059 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U
1,2,4-Trichlorobenzene	ug/m3	NA	0.26 U	0.37 U	0.37 U	0.37 U	0.75 U	0.75 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.74 U	0.45 U	0.45 U	0.17 J	0.52 U	0.52 U	0.52 U	0.26 U	0.26 U	0.25 U	0.26 U	0.26 U	0.26 U
1,2,4-Trimethylbenzene	ug/m3	52	0.18 U	0.25 U	0.29	0.39	0.25 U	0.35	0.36	0.36	0.25 U	0.25 U	0.56	0.41	0.32	0.36	0.21	0.46	0.17 U	0.1 J	0.58	0.4	0.7	0.25	0.38	0.38
1,2-Dibromoethane (EDB)	ug/m3	0.038	0.27 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.23 U	0.12 U	0.23 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.26 U	0.27 U	0.27 U	0.27 U
1,2-Dichlorobenzene	ug/m3	410	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.18 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	ug/m3	0.31	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.07 J	0.061 U	0.051 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.11 J	0.14 U	0.14 U	0.14 U
1,2-Dichloropropane	ug/m3	0.42	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.3	0.23 U	0.23 U	0.23 U	0.63	0.23 J	0.14 U	0.069 U	0.14 U	0.094 J	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
1,2-Dichlorotetrafluoroethane	ug/m3	NA	0.25 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U												
1,3,5-Trimethylbenzene	ug/m3	52	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 J	0.1 J	0.15	0.083 J	0.26	0.17 U	0.17 U	0.17 U	0.17 U	0.23	0.17 U	0.17 U
1,3-Butadiene	ug/m3	NA	0.08 U	0.11 U	0.11 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.066 U	0.066 U	0.066 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.075 U	0.078 U	0.078 U	0.48
1,3-Dichlorobenzene	ug/m3	410	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.18 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U
1,4-Dichlorobenzene	ug/m3	24	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.065 J	0.063 J	0.21 U	0.21 U	0.21 U	0.21 U	0.086 J	0.21 U	0.21 U	0.21 U
1,4-Dioxane	ug/m3	NA												0.18 U												
2-Butanone	ug/m3	500	1.3	2.3	7.3	2.2	0.49	2.1	4.3	1.8	0.42	1.7 B	4.7	5.9 J	2.1 J	0.97 J	1.1 J	2.8 J	4.1 J	1.9 J	1.7 J	1.6 J	3.8 J	0.69 J	1.5 J	1.5 J
2-Hexanone	ug/m3	NA	0.14 U	0.53	1.5	0.53	0.2 U	0.2 U	0.82	0.55	0.2 U	0.2 U	1.4 J	0.73	0.12 U	0.081 J	0.23	0.41	0.14	0.35	0.14 U	0.15	1.1	0.14 U	0.37	0.37
4-Ethyltoluene	ug/m3	NA	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.074 J	0.097 J	0.065 J	0.16 J	0.17 U	0.17 U	0.17 U	0.17 U	0.2	0.17 U	0.17 U	0.17 U
4-Methyl-2-pentanone	ug/m3	200	0.14 U	0.22	0.79	0.24	0.2 U	0.2 U	0.43	0.61	0.2 U	0.2 U	0.53	0.36	0.15	0.13	1.4	0.29	0.14	0.14 U	0.21	0.2	0.44	0.14 U	0.14 U	0.14 U
Acetone	ug/m3	500	6.5	10	31	22	31	12	41	27	12 B	15 B	48 B	38	17	13	18	24 B	3.3	15	49	46	46	20	15	15
Benzene	ug/m3	3.3	0.42	0.35	0.52	0.43	0.52	0.53	0.27	0.56	0.45	1.1	0.41	0.34	0.44	0.36	0.2	0.49	0.11	0.87	0.32	0.43	1.8	0.54	1.9	1.9
Benzyl chloride	ug/m3	NA	0.19 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.16 U	0.16 U	0.16 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Bromodichloromethane	ug/m3	0.46	0.24 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U	0.34 U	0.34 U	0.2 U	0.1 U	0.2 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.23 U	0.24 U	0.24 U	0.24 U
Bromoform	ug/m3	7.3	0.36 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.52 U	0.52 U	0.52 U	0.52 U	0.31 U	0.31 U	0.31 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.35 U	0.36 U	0.36 U	0.36 U
Bromomethane	ug/m3	NA	0.14 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.12 U	0.12 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U
Carbon disulfide	ug/m3	NA	0.26	0.16 U	0.16 U	0.26	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.27	1.6 J	0.93 U	0.93 U	0.93 U	0.09 J	1.1 U	1.1 U	0.6 J	0.14 J	1.1 U	1.1 U
Carbon tetrachloride	ug/m3	0.54	0.43	0.65	0.43	0.42	0.44	0.43	0.5	0.47	0.45	0.56	0.69	0.5	0.45	0.46	0.43	0.38	0.22	0.39	0.55	0.46	0.45	0.49	0.42	0.42
Chlorobenzene	ug/m3	200	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.14 U	0.14 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Chloroethane	ug/m3	500	0.1 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.079 U	0.079 U	0.079 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.089 U	0.093 U	0.093 U	0.093 U
Chloroform	ug/m3	0.5	0.17 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.34	0.12 J	0.073 U	0.13 J	0.2	0.17 U	0.082 J	0.21	0.47	0.17	0.24	0.17 U
Chloromethane	ug/m3	80	1.1	0.93	1.8	1.2	2.1	1.2	1.3	1.4	0.99	1	1.6	1.6	1.3	1.6	1.2	1.3	0.72	1.4	1.5	1.3	1.2	1.2	1.4	1.4
cis-1,2-Dichloroethene	ug/m3	100	0.14	0.2 U	0.2 U	0.2 U	0.27	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.064 J	0.059 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U
cis-1,3-Dichloropropene	ug/m3	NA	0.16 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.068 U	0.14 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U	0.16 U
Cyclohexane	ug/m3	NA	0.12 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.1 U	0.1 U	0.1 U	0.23	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.3
Dibromochloromethane	ug/m3	NA	0.31 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.26 U	0.13 U	0.26 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.29 U	0.3 U	0.3 U	0.3 U
Dichlorodifluoromethane	ug/m3	500	2	2.4	2.7	2.3	2.1	1.8	2.7	1.7	2	3.1	2.5	1.8	2.8	2.1	2.7	2.9	2.9	1.7	3.1	2.1	1.5	2.7	1.5	1.5
Ethanol	ug/m3	NA	7.1	11	14	11	10	13	39	240	13	14	28	76	60	70	110	60	2.6	11	45	21	40	25	50	50
Ethyl acetate	ug/m3	NA	0.26 U	0.18 U	0.24	2.6	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.7	0.21	1.8	0.94	0.39	0.57	0.13	0.13 U	5.5	1.3	1.9	0.34	0.56	0.56
Ethylbenzene	ug/m3	290	0.16 U	0.22 U	0.25	0.32	0.68	0.32	0.45	0.45	0.22 U	0.22 U	0.68	0.45	0.24	0.12 J	0.24	0.45	0.15	0.14 J	0.36	0.48	0.62	0.15 U	0.43	0.43
Hexachlorobutadiene	ug/m3	NA	0.75 U	1.1 U	1.1 U	0.53 U	1.1 U	1.1 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.32 U	0.32 U	0.32 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.36 U	0.37 U	0.37 U	0.37 U
Hexane	ug/m3	NA	0.69	0.33	1.5	0.88	0.25	0.33	0.7	0.64	0.5	1.3	0.58	7 J	3.9 J	0.8 J	0.67 J	0.97 J	4.9 J	0.87 J	2.9 J	1.3 J	0.97 J	0.39 J	1.1 J	1.1 J
Isopropyl alcohol	ug/m3	NA	0.18 U	7	14	4	1.9	18	5.8	28	2.8	11	1.2 U	77	2.9 U	2.9 U	48	22	3.4 J	3.4 U	3.4 U	3.4 U	6	40	1.9 J	1.9 J
m,p-Xylene	ug/m3	NA																								



Appendix D1.  
Summary of Analytical Results - Indoor Air Sampling for Small Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island

Area:			Western Small Retail Space														
Location:			IA-7														
Sample ID:			IA-7-061314	IA-7-091214	IA-7-121914	IA-07-032715	IA-7-061115	IA-7-091615	IA-7-121815	IA-7-021816	IA-7-080516	IA-7-021017	IA-7-090717	IA-7-022818	IA-7-091218	IA-7-020819	IA-7-090619
Sample Date:			6/13/2014	9/12/2014	12/19/2014	3/27/2015	6/11/2015	9/16/2015	12/18/2015	2/18/2016	8/5/2016	2/10/2017	9/7/2017	2/28/2018	9/12/2018	2/8/2019	9/6/2019
Analyte	Units	CT IACTIND 2003															
1,1,1,2-Tetrachloroethane	ug/m3	1.1	0.44 U	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U		0.44 U		0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
1,1,1-Trichloroethane	ug/m3	500	0.19 U	0.055 U	0.19 U	0.19 U	0.19 U	0.054 J	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.24 U	0.069 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
1,1,2-Trichloroethane	ug/m3	12	0.19 U	0.11 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.4	0.19 U
1,1-Dichloroethane	ug/m3	430	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
1,1-Dichloroethene	ug/m3	20	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
1,2,4-Trichlorobenzene	ug/m3	NA	0.26 U	0.15 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.52 U	0.26 U
1,2,4-Trimethylbenzene	ug/m3	52	0.31	0.37	0.052 J	0.33	0.21	0.15 J	0.28	0.17 U	0.23	0.17 U	0.21	0.17 U	0.29	0.54	0.17 U
1,2-Dibromoethane (EDB)	ug/m3	0.038	0.27 U	0.077 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,2-Dichlorobenzene	ug/m3	410	0.21 U	0.12 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.65 J	0.21 U
1,2-Dichloroethane	ug/m3	0.31	0.14 U	0.15	0.14 U	0.065 J	0.19	0.18	0.14 U	0.14 U	0.14 U	0.14 U	0.062 J	0.34	0.14 U	0.46	
1,2-Dichloropropane	ug/m3	0.42	0.16 U	0.085	0.16 U	0.16 U	0.16 U	0.16 J	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.097 J	0.4	0.8	
1,2-Dichlorotetrafluoroethane	ug/m3	NA							0.25 U		0.25 U						
1,3,5-Trimethylbenzene	ug/m3	52	0.17 U	0.057 J	0.17 U	0.083 J	0.083 J	0.048 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.39	0.17 U
1,3-Butadiene	ug/m3	NA	0.078 U	0.044 U	0.078 U	0.078 U	0.078 U	0.078 U	0.14	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U
1,3-Dichlorobenzene	ug/m3	410	0.21 U	0.06 J	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.5	0.21 U
1,4-Dichlorobenzene	ug/m3	24	0.21 U	0.12 U	0.21 U	0.16 J	0.15 J	0.055 J	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.57	0.21 U
1,4-Dioxane	ug/m3	NA							1.3 U		1.3 U						
2-Butanone	ug/m3	500	3 J	2.2 J	0.75 J	1.4 J	1.7 J	1.7 J	2 J	0.59 J	1.9 J	0.81 J	2.4 J	1.9 J	1.3 J	2.1 J	1.1 J
2-Hexanone	ug/m3	NA	0.35	0.41	0.14 U	0.43	0.17	0.14 U	0.28	0.14 U	0.36	0.14 U	0.43	0.37	0.14 U	0.14 U	0.14 U
4-Ethyltoluene	ug/m3	NA	0.17 U	0.065 J	0.17 U	0.09 J	0.069 J	0.055 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.49	0.17 U	
4-Methyl-2-pentanone	ug/m3	200	0.34	0.18	0.14 U	0.18	0.15	0.14 U	0.18	0.14 U	0.14 U	0.14 U	0.28	0.1 J	0.14 U	0.14 U	0.14 U
Acetone	ug/m3	500	30	41	12	16	24	39	15	9.1	33	7.5	37	14	23	13	18
Benzene	ug/m3	3.3	0.57	0.36	0.4	0.57	0.27	0.91	0.97	0.43	0.27	0.47	0.47	0.53	0.5	0.85	0.4
Benzyl chloride	ug/m3	NA	0.18 U	0.052 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Bromodichloromethane	ug/m3	0.46	0.24 U	0.067 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Bromoform	ug/m3	7.3	0.36 U	0.21 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
Bromomethane	ug/m3	NA	0.14 U	0.056 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Carbon disulfide	ug/m3	NA	0.15 J	0.11 J	1.1 U	0.042 J	0.1 J	0.15 J	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Carbon tetrachloride	ug/m3	0.54	0.45	0.46	0.33	0.34	0.36	0.39	0.51	0.37	0.45	0.42	0.4	0.37	0.5	0.83	0.43
Chlorobenzene	ug/m3	200	0.16 U	0.046 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Chloroethane	ug/m3	500	0.093 U	0.053 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.19 U	0.093 U	0.076 J	0.19 U	0.093 U
Chloroform	ug/m3	0.5	0.18	0.12	0.096 J	0.079 J	0.19	0.23	0.17 U	0.17 U	0.2	0.15 J	0.31	0.13 J	0.23	0.57	0.34
Chloromethane	ug/m3	80	1.4	0.76	0.86	1	1.3	1.3	1.4	1	1.4	1.2	1.5	1.3	1.9	0.14 U	0.14 U
cis-1,2-Dichloroethene	ug/m3	100	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.086 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
cis-1,3-Dichloropropene	ug/m3	NA	0.16 U	0.045 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Cyclohexane	ug/m3	NA	0.12 U	0.069 U	0.12 U	0.12 U	0.12 U	0.12 U	0.46	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
Dibromochloromethane	ug/m3	NA	0.3 U	0.085 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Dichlorodifluoromethane	ug/m3	500	2.1	2.2	1.8	1.3	1.9	1.8	2.3	1.6	0.57	0.88	1.4	1.7	2.1	2.5	0.17 U
Ethanol	ug/m3	NA	79	96	39	110	110	440 E	33	13	23	15	95	46	28	45	200
Ethyl acetate	ug/m3	NA	0.41	0.37	0.13 U	0.64	0.39	1.1	0.31	0.32	1.4	3.5	1.7	0.17	0.35	0.13 U	0.13 U
Ethylbenzene	ug/m3	290	0.35	0.2	0.085 J	0.58	0.19	0.3	0.25	0.15 U	0.31	0.15 U	0.29	0.14 J	0.37	0.48	0.48
Hexachlorobutadiene	ug/m3	NA	0.37 U	0.21 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.75 U	0.37 U
Hexane	ug/m3	NA	0.9 J	0.37 J	0.35 J	4.9 J	0.36 J	0.67 J	0.52 J	0.28 J	1.9 J	0.36 J	0.65 J	0.29 J	0.78 J	4.9 U	4.9 U
Isopropyl alcohol	ug/m3	NA	11	2 U	1.4 J	30	11	30	3.4 U	4.8	3.4 U	8.5	3.4 U	3.8	92	5.6	18
m,p-Xylene	ug/m3	NA	1.1	0.54	0.29 J	0.67	0.48	0.64	0.84	0.27 J	0.93	0.16 J	0.82	0.3 J	1.1	1.1	1.5
Methyl methacrylate	ug/m3	NA	0.14 U	0.082 U	0.14 U	0.14 U		0.14 U		0.14 U		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Methylene chloride	ug/m3	17	0.74 J	0.63 J	0.39 J	0.6 J	0.58 J	0.54 J	1.2 J	0.4 J	1.1 J	0.49 J	0.59 J	0.46 J	0.39 J	0.66 J	0.4 J
Methyl-t-butyl ether	ug/m3	190	0.13 U	0.072 U	0.13 U	0.13 U	0.063 J	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Naphthalene	ug/m3	NA							0.18 U		0.21						
n-Heptane	ug/m3	NA	4.6	1.9	4.3	0.19	0.14 J	0.25	0.28	0.14 U	0.29	0.14 U	0.29	0.17	0.44	0.14 U	0.43
o-Xylene	ug/m3	NA	0.39	0.19	0.088 J	0.26	0.19	0.23	0.3	0.15 U	0.34	0.15 U	0.29	0.12 J	0.38	0.48	0.51
Propylene (Propene)	ug/m3	NA	1.5 J	1.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	0.78 J	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
Styrene	ug/m3	290	0.29	0.24	0.15 U	0.096 J	0.29	0.27	0.18	0.15 U	0.41	0.15 U	0.59	0.13 J	0.42	0.15 U	0.33
Tetrachloroethene	ug/m3	5	0.34	0.13	0.13 J	0.23 J	0.25	0.23 J	0.36	0.24 U	0.38	0.24 U	0.34	0.24 U	0.6	0.88	1.6
Tetrahydrofuran	ug/m3	NA	0.14	0.13	0.1 U	0.11	0.15	0.11	0.1 U	0.1 U	0.1 U	0.1 U	0.21 U	0.1 U	0.1 U	0.1 U	0.1 U
Toluene	ug/m3	500	2.2	1.3	0.72	1.1	1	2.1	1.6	0.59	1.8	0.51	1.8	0.95	2.6	1.2	3.9
trans-1,2-Dichloroethene	ug/m3	200	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.083 J	0.28 U	0.14 U
trans-1,3-Dichloropropene	ug/m3	NA	0.16 U	0.045 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Trichloroethene	ug/m3	1	0.19 U	0.077	0.19 U	0.1 J	0.19 U	0.31	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 J	0.19 U	0.43
Trichlorofluoromethane	ug/m3	500	1.4	1.3	1.4	1.2	1.5	1.3	1.7	1.1	1.1	1.4	1.2	1.2	1.2	1.8	1.2
Trichlorotrifluoroethane	ug/m3	NA	0.52	0.58	0.63	0.64 J	0.65 J	0.59 J	0.6 J	0.46 J	0.48 J	0.58 J	0.46 J	0.49 J	0.54 J	1.1 U	1.1 U
Vinyl acetate	ug/m3	NA	2.5 U	1.4 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	1.6 J	2.5 U	1.2 J	2.5 U	2.5 U
Vinyl chloride	ug/m3	1.9	0.09 U	0.026 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U

Notes:  
NA - not available  
U - Not detected, value is the detection limit  
B - Compounds detected in method blank as well as field sample  
J - Indicates compound was detected at an estimated value.  
D - Result from diluted analyses  
ug/m3 - micrograms per cubic meter  
Bolded and shaded values are above the CT target indoor air concentration for industrial/commercial scenarios

Prepared By: AKN, 9/16/2019

Checked By: HWC, 9/16/2019

## **Appendix D2**

Summary of Historical Analytical Results –  
Extraction Well Samples for Small Retail Space

Appendix D2.  
 Summary of Analytical Results - Small Extraction Wells  
 Former Gorham Manufacturing Site  
 Providence, Rhode Island

Area:		Extraction Well - Center Small Retail Space																						
Location:		EW-6																						
Sample ID:	EW-6-020309	EW-6-021109	EW-6-021809	EW-6-022609	EW-6-030609	EW-6-041409	EW-6-051509	EW-6-061109	EW-6-091709	EW-6-122909	EW-6-070110	EW-6-091610	EW-6-120710	EW-6-021711	EW-6-060211	EW-6-091511	EW-6-120811	EW-6-030812	EW-6-061412	EW-6-091312	EW-6-010313	EW-6-031513	EW-6-060713	
Sample Date:	2/3/2009	2/11/2009	2/18/2009	2/26/2009	3/6/2009	4/14/2009	5/15/2009	6/11/2009	9/17/2009	12/29/2009	7/1/2010	9/16/2010	12/7/2010	2/17/2011	6/2/2011	9/15/2011	12/8/2011	3/8/2012	6/14/2012	9/13/2012	1/3/2013	3/15/2013	6/7/2013	
Analyte	Units																							
1,1,1,2-Tetrachloroethane	ug/m3															25 U		1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	
1,1,1-Trichloroethane	ug/m3	69000	32000	21000	16000	16000	5600	8200	5700	5400	1100	430	390	130	0.55 U	80	230	33	0.27 U	75	0.55 U	0.55 U	0.55 U	4.3
1,1,2,2-Tetrachloroethane	ug/m3	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	68 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	6.8 U	0.69 U	0.69 U	6.9 U	14 U	3.4 U	0.34 U	0.69 U	0.69 U	0.69 U	0.69 U	
1,1,2-Trichloroethane	ug/m3	5.4 U	5.4 U	5.4 U	5.4 U	5.4 U	54 U	2.7 U	2.7 U	2.7 U	2.7 U	2.7 U	5.4 U	0.55 U	0.55 U	5.5 U	11 U	2.7 U	0.27 U	0.55 U	0.55 U	0.55 U	0.55 U	
1,1-Dichloroethane	ug/m3	5200	2500	2100	2200	1600	780	1200	1100	930	580	47	38	21	0.4 U	12	27	6.4	0.2 U	9.6	0.4 U	0.4 U	0.4 U	0.78
1,1-Dichloroethene	ug/m3	850	210	100	110	55	74	87	83	3.5	87	4 U	0.4 U	0.4 U	4 U	7.9 U	2 U	0.2 U	0.84	0.4 U	0.4 U	0.4 U	0.4 U	
1,2,4-Trichlorobenzene	ug/m3	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	74 U	3.7 U	3.7 U	3.7 U	7.5 U	3.7 U	7.4 U	0.74 U	0.74 U	7.4 U	30 U	7.4 U	1.5 U	1.5 U	1.5 U	1.5 U	0.74 U	
1,2,4-Trimethylbenzene	ug/m3	5 U	5 U	5 U	16	6.2	50 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	0.49 U	0.49 U	4.9 U	9.8 U	2.5 U	0.49 U	0.26 J	0.6	0.49 U	0.49 U	0.49 U
1,2-Dibromoethane (EDB)	ug/m3	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	76 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	7.6 U	0.77 U	0.77 U	7.7 U	15 U	3.8 U	0.38 U	0.77 U	0.77 U	0.77 U	0.77 U	
1,2-Dichlorobenzene	ug/m3	6 U	6 U	6 U	6 U	6 U	60 U	3 U	3 U	3 U	3 U	3 U	6 U	0.6 U	0.6 U	6 U	12 U	3 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	
1,2-Dichloroethane	ug/m3	4 U	4 U	4 U	4 U	4 U	40 U	2 U	2 U	2 U	2 U	2 U	4 U	0.4 U	0.4 U	4 U	8.1 U	2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.4 U	
1,2-Dichloropropane	ug/m3	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	46 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	4.6 U	0.46 U	0.46 U	4.6 U	9.2 U	2.3 U	0.23 U	0.46 U	0.46 U	0.46 U	0.46 U	
1,2-Dichlorotetrafluoroethane	ug/m3	7 U	7 U	7 U	7 U	7 U	70 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	7 U											
1,3,5-Trimethylbenzene	ug/m3	5 U	5 U	5 U	7.3	5 U	50 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	0.49 U	0.49 U	4.9 U	9.8 U	2.5 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	
1,3-Butadiene	ug/m3	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	22 U	1.1 U	1.1 U	2.3 U	1.1 U	1.1 U	2.2 U	0.22 U	0.22 U	2.2 U	4.4 U	1.1 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	
1,3-Dichlorobenzene	ug/m3	6 U	6 U	6 U	6 U	6 U	60 U	3 U	3 U	3 U	3 U	3 U	6 U	0.6 U	0.6 U	6 U	12 U	3 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	
1,4-Dichlorobenzene	ug/m3	6 U	6 U	6 U	6 U	6 U	60 U	3 U	3 U	3 U	3 U	3 U	6 U	0.6 U	0.6 U	6 U	12 U	3 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	
1,4-Dioxane	ug/m3															7.2 U								
2-Butanone	ug/m3	120	280	300	130	97	160	37	65	8.7	23	1800	110	20	1.9 B	59 U	240 J	13 J	2.1 J	200	3.7 J	12 J	1.9 J	120
2-Hexanone	ug/m3	4 U	4 U	4 U	4 U	4 U	40 U	2 U	2 U	2 U	2 U	4 U	0.41 U	0.41 U	82 U	8.2 U	2 U	0.41 U	0.7	0.52	0.41 U	0.41 U	0.41 U	
4-Ethyltoluene	ug/m3	5 U	5 U	5 U	5 U	5 U	50 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	0.49 U	0.49 U	4.9 U	9.8 U	2.5 U	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	
4-Methyl-2-pentanone	ug/m3	4 U	4 U	4 U	4 U	4 U	40 U	2 U	2 U	2 U	2 U	4 U	0.41 U	0.41 U	4.1 U	8.2 U	2 U	0.41 U	0.35 J	0.41 U	0.41 U	0.41 U	0.41 U	
Acetone	ug/m3	580	64	81	33	22	410	16	20	4.8 U	27	490	70	15 B	15 B	48 U	190 J	21 J	9.9	36	25 B	9.5 J	6.3 J	42
Benzene	ug/m3	5.2	5.2	4.1	3.2 U	3.2 U	32 U	1.7	1.6 U	1.6 U	1.6 U	1.6 U	3.2 U	0.92	1.1	3.2 U	6.4 J	1.6 U	0.31 J	1.2	0.77	0.32	0.4	0.32 U
Benzyl chloride	ug/m3	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	52 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	5.2 U	0.52 U	0.52 U	5.2 U	10 U	2.6 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	
Bromodichloromethane	ug/m3	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	66 U	3.3 U	3.3 U	3.3 U	3.3 U	3.3 U	6.6 U	0.67 U	0.67 U	6.7 U	13 U	3.4 U	0.34 U	0.67 U	0.67 U	0.67 U	0.67 U	
Bromoform	ug/m3	11 U	11 U	11 U	11 U	11 U	110 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	11 U	1 U	1 U	10 U	21 U	5.2 U	1 U	1 U	1 U	1 U	1 U	
Bromomethane	ug/m3	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	38 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	3.8 U	0.39 U	0.39 U	3.9 U	7.8 U	1.9 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	
Carbon disulfide	ug/m3	3.2 U	3.2 U	3.2 U	3.2 U	3.2 U	180	1.6 U	1.6 U	1.6 U	1.6 U	8	12	0.66	0.31 U	11	62 J	7.1 J	3.1 U	29	3.1 U	3.1 U	0.35 J	
Carbon tetrachloride	ug/m3	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	62 U	3.1 U	3.1 U	3.1 U	3.1 U	3.1 U	6.2 U	0.63 U	0.63 U	6.3 U	13 U	3.1 U	0.39	0.34 J	0.4 J	0.63 U	0.23 J	0.63 U
Chlorobenzene	ug/m3	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	46 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	4.6 U	0.46 U	0.46 U	4.6 U	9.2 U	2.3 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	
Chloroethane	ug/m3	140	50	34	18	13	26 U	1.3	14	11	4	1.3 U	2.8	0.26 U	0.26 U	2.6 U	5.3 U	1.3 U	0.26 U	1.4	0.26 U	0.26 U	0.26 U	0.26 U
Chloroform	ug/m3	42	24	19	29	21	50	14	12	12	7.2	3.7	4.8 U	2.4	0.49 U	4.9 U	9.8 U	1 J	0.36	0.92	0.21 J	0.49 U	0.49 U	0.49 U
Chloromethane	ug/m3	2 U	2 U	2 U	2 U	2 U	34	1 U	1 U	1 U	1 U	38	40	0.21 U	1	16	45	2.9	1.5	7.8	1.3	0.21	1.2	1.3
cis-1,2-Dichloroethene	ug/m3	700	360	220	250	150	700	360	190	170	130	36	11	7.9 J	2.3	0.4 U	4 U	7.9 J	0.83 J	0.2 U	2.8	0.4 U	0.4 U	0.4 U
cis-1,3-Dichloropropene	ug/m3	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	44 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	4.4 U	0.45 U	0.45 U	4.5 U	9.1 U	2.3 U	0.23 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U
Cyclohexane	ug/m3	3.4 U	5.3	3.4 U	3.4 U	3.4 U	34 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	3.4 U	0.34 U	0.34 U	3.4 U	6.9 U	1.7 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	
Dibromochloromethane	ug/m3	8.6 U	8.6 U	8.6 U	8.6 U	8.6 U	86 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	8.6 U	0.85 U	0.85 U	8.5 U	17 U	4.3 U	0.43 U	0.85 U	0.85 U	0.85 U	0.85 U	
Dichlorodifluoromethane	ug/m3	5 U	5 U	5 U	5 U	5 U	50 U	3.6	3.9	2.7	2.5 U	2.5 U	5 U	2.3	3.6	4.9 U	9.9 U	3	2.2	2.9	2.9	0.49	2.5	2.3
Ethanol	ug/m3	360	38	73	38	25	110	18	14	6.7	18	15	19 U	4.6	11	38 U	150 J	38 U	29	5.8 J	68	7.5	3.5 J	13
Ethyl acetate	ug/m3	7.3 U	3.6 U	3.6 U	7.3 U	3.6 U	73 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	3.6 U	0.36 U	0.36 U	3.6 U	7.2 U	1.8 U	0.52	1.2	24	0.36 U	0.36 U	0.94
Ethylbenzene	ug/m3	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	44 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	4.4 U	0.43 U	0.43 U	4.3 U	8.7 J	2.2 U	0.43 U	0.18 J	0.66	0.43 U	0.43 U	0.43 U
Hexachlorobutadiene	ug/m3	22 U	22 U	22 U	22 U	22 U	220 U	11 U	11 U	5.3 U	11 U	5.3 U	11 U	1.1 U	1.1 U	11 U	21 U	5.3 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Hexane	ug/m3	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	36 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	3.6 U	0.7 U	1.3	3.5 U	280 U	70 U	1.4 J	1.2 J	7.6 J	14 U	0.6 J	1.6 J
Isopropyl alcohol	ug/m3	210	18	33	15	10	230	8.2	11	20	2.5 U	1.2 U	8.2	9.4	0.49 U	2.9	25 U	200 J	49 U	1.3 J	9.8 U	7.6 J	9.8 J	9.8 U
m,p-Xylene	ug/m3	8.6 U	8.6 U	8.6 U	8.6 U	8.6 U	120	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	8.6 U	0.87 U	0.94	8.7 U	17 J	4.3 U	0.87 U	0.24 J	1.9	0.87 U	0.87 U	0.87 U
Methyl methacrylate	ug/m3														0.41 U	4.1 U	8.2 U	2 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	
Methylene chloride	ug/m3	7 U	7 U	7.5	7 U	7 U	780	12	15	7 U	27	10	7 U	1.3	2.8	6.9 U	69 U	3.6 J	4.8	2.5 J	14 B	3.5 J	1.4 J	3.8
Methyl-t-butyl ether	ug/m3	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	36 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	3.6 U	0.36 U	0.36 U	3.6 U	7.2 U	1.8 U	0.36 U	0.36 U	0.13 J	0.36 U	0.36 U	0.36 U
Naphthalene	ug/m3																							
n-Heptane	ug/m3	4 U	4 U	4 U	4 U	4 U	40 U	2 U	2 U	2 U	2 U	2 U	4 U	0.41 U	0.41 U	4.1 U	8.2 U	2 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
o-Xylene	ug/m3	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	44 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	4.4 U	0.43 U	0.43 U	4.3 U	8.7 J	2.2 U	0.43 U	0.16 J	0.73	0.43 U	0.43 U	0.43 U
Propylene (Propene)	ug/m3	3.5 U	1.8 U	1.8 U	3.5 U	1.8 U	35 U	0.9 U	0.9 U	3.5 U	3.5 U	8.7 U	6.9 U	0.69 U	1.7 U	17 U	140 U	3.8 J	6.9 U	2.8 J	6.9 U	6.9 U	6.9 U	6.9 U
Styrene	ug/m3	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	42 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	4.2 U	0.43 U	0.43 U	4.3 U	8.5 U	2.1 U	0.43 U	0.2 J	0.35 J	0.43 U	0.43 U	0.43 U

**Appendix D2.**  
**Summary of Analytical Results - Small Extraction Wells**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:		Extraction Well - Center Small Retail Space																Extraction Well - Eastern Small Retail Space						
Location:		EW-6																EW-5						
Sample ID:		EW-6-090613	EW-6-121313	EW-6-030714	EW-6-061314	EW-6-091214	EW-6-121914	EW-06-032715	EW-6-061115	EW-6-091615	EW-6-121815	EW-6-021816	EW-6-080516	EW-6-021017	EW-6-090717	EW-6-022818	EW-6-091218	EW-6-020819	EW-6-090619	EW-5-020309	EW-5-021109	EW-5-021809	EW-5-022609	EW-5-030609
Sample Date:		9/6/2013	12/13/2013	3/7/2014	6/13/2014	9/12/2014	12/19/2014	3/27/2015	6/11/2015	9/16/2015	12/18/2015	2/18/2016	8/5/2016	2/10/2017	9/7/2017	2/28/2018	9/12/2018	2/8/2019	9/6/2019	2/3/2009	2/11/2009	2/18/2009	2/26/2009	3/6/2009
Analyte	Units																							
1,1,1,2-Tetrachloroethane	ug/m3	0.44 U	1.2 U	1.2 U	1.2 U	2.5 U	1.2 U	1.2 U	1.2 U	2.5 U	1.2 U	2.5 U	1.2 U	2.5 U	2.5 U	2.5 U	2.5 U	1.2 U	1.2 U					
1,1,1-Trichloroethane	ug/m3	71	18	13	26	58	19	14	13	5.9	27	10	180	4	3.9	2.6	27	0.55 U	0.55 U	190000	41000	17000	7100	1800
1,1,2,2-Tetrachloroethane	ug/m3	0.24 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	1.4 U	1.4 U	1.4 U	6.9 U	0.69 U	1.4 U	1.4 U	1.4 U	0.69 U	0.69 U	6.8 U	6.8 U	6.8 U	6.8 U	1.7 U
1,1,2-Trichloroethane	ug/m3	0.19 U	0.55 U	0.55 U	0.55 U	1.1 U	0.55 U	0.55 U	0.55 U	1.1 U	1.1 U	1.1 U	5.5 U	0.55 U	1.1 U	1.1 U	1.1 U	0.55 U	0.55 U	5.4 U	5.4 U	5.4 U	5.4 U	1.4 U
1,1-Dichloroethane	ug/m3	13	2.7	2.2	4.7	8.2	3.5	2.8	2.5	1.1	3.1	1.7	24	0.88	0.58 J	0.45 J	4.1	0.4 U	0.4 U	11000	1900	890	770	190
1,1-Dichloroethene	ug/m3	1.1	0.4 U	0.4 U	0.4 U	0.52	1.1	0.4 U	0.4 U	0.79 U	0.79 U	0.79 U	4 U	0.4 U	0.79 U	0.79 U	0.79 U	1.1	0.4 U	2500	290	130	190	61
1,2,4-Trichlorobenzene	ug/m3	0.26 U	0.74 U	0.74 U	0.74 U	1.5 U	0.74 U	0.74 U	0.74 U	1.5 U	1.5 U	1.5 U	7.4 U	0.74 U	1.5 U	1.5 U	1.5 U	1.5 U	0.74 U	7.4 U	7.4 U	7.4 U	7.4 U	1.9 U
1,2,4-Trimethylbenzene	ug/m3	0.59	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.2 J	0.24 J	0.98 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	0.98 U	0.98 U	0.49 U	0.49 U	5 U	5 U	5 U	5 U	1.3 U
1,2-Dibromoethane (EDB)	ug/m3	0.27 U	0.77 U	0.77 U	0.77 U	1.5 U	0.77 U	0.77 U	0.77 U	1.5 U	1.5 U	1.5 U	7.7 U	0.77 U	1.5 U	1.5 U	1.5 U	0.77 U	0.77 U	7.6 U	7.6 U	7.6 U	7.6 U	1.9 U
1,2-Dichlorobenzene	ug/m3	0.21 U	0.6 U	0.6 U	0.6 U	1.2 U	0.6 U	0.6 U	0.6 U	1.2 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	1.2 U	1.2 U	2.4 U	0.6 U	6 U	6 U	6 U	6 U	1.5 U
1,2-Dichloroethane	ug/m3	0.14 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.81 U	0.81 U	0.81 U	4 U	0.4 U	0.81 U	0.81 U	0.81 U	0.4 U	0.4 U	4 U	4 U	4 U	4 U	1 U
1,2-Dichloropropane	ug/m3	0.16 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.92 U	0.92 U	0.92 U	4.6 U	0.46 U	0.92 U	0.92 U	0.92 U	0.46 U	0.46 U	4.6 U	4.6 U	4.6 U	4.6 U	1.2 U
1,2-Dichlorotetrafluoroethane	ug/m3									1.4 U		7 U								7 U	7 U	7 U	7 U	1.8 U
1,3,5-Trimethylbenzene	ug/m3	0.3	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.49 U	0.49 U	0.98 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	0.98 U	0.98 U	0.49 U	0.49 U	5 U	5 U	5 U	5 U	1.3 U
1,3-Butadiene	ug/m3	0.078 U	0.22 U	0.22 U	0.22 U	0.44 U	0.22 U	0.22 U	0.22 U	0.44 U	0.44 U	0.44 U	2.2 U	0.22 U	0.44 U	0.44 U	0.44 U	0.22 U	0.22 U	2.2 U	2.2 U	2.2 U	2.2 U	0.55 U
1,3-Dichlorobenzene	ug/m3	0.21 U	0.6 U	0.6 U	0.6 U	1.2 U	0.6 U	0.6 U	0.6 U	1.2 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	1.2 U	1.2 U	1.5 J	0.6 U	6 U	6 U	6 U	6 U	1.5 U
1,4-Dichlorobenzene	ug/m3	0.21 U	0.6 U	0.6 U	0.6 U	1.2 U	0.6 U	0.6 U	0.6 U	1.2 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	1.2 U	1.2 U	1.6 J	0.6 U	6 U	6 U	6 U	6 U	1.5 U
1,4-Dioxane	ug/m3									7.2 U		36 U												
2-Butanone	ug/m3	95	4 J	4 J	6.8 J	11 J	5.2 J	11 J	13	7 J	2.2 J	6.1 J	79 J	3.1 J	120	57	160	6.4 J	17	6.3	89	75	170	3700
2-Hexanone	ug/m3	0.38	0.41 U	0.41 U	0.41 U	0.82 U	0.41 U	0.32 J	0.18 J	0.82 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	0.82 U	0.82 U	0.41 U	0.41 U	4 U	4 U	4 U	4 U	1 U
4-Ethyltoluene	ug/m3	0.17 U	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.49 U	0.49 U	0.98 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	0.98 U	0.98 U	0.49 U	0.49 U	5 U	5 U	5 U	5 U	1.3 U
4-Methyl-2-pentanone	ug/m3	0.14 U	0.41 U	0.41 U	0.41 U	0.82 U	0.41 U	0.13 J	0.41 U	0.82 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	0.82 U	0.82 U	0.41 U	0.41 U	4 U	4 U	4 U	4 U	1 U
Acetone	ug/m3	35	17	16	27	36	35	39	35	44	17 J	33	210	25	26	17 J	42	33	38	530	32	52	29	460
Benzene	ug/m3	1.2	0.42	0.96	0.73	1.1	0.7	0.65	0.56	0.56 J	0.64 U	0.64 U	9.6	1.3	0.46 J	0.58 J	0.91	2.5	1.2	13	12	6.2	4.8	5.6
Benzyl chloride	ug/m3	0.18 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	1 U	1 U	1 U	5.2 U	0.52 U	1 U	1 U	1 U	0.52 U	0.52 U	5.2 U	5.2 U	5.2 U	5.2 U	1.3 U
Bromodichloromethane	ug/m3	0.24 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	1.3 U	1.3 U	1.3 U	6.7 U	0.67 U	1.3 U	1.3 U	1.3 U	0.62 J	0.67 U	6.6 U	6.6 U	6.6 U	6.6 U	1.7 U
Bromoform	ug/m3	0.36 U	1 U	1 U	1 U	2.1 U	1 U	1 U	1 U	2.1 U	2.1 U	2.1 U	10 U	1 U	2.1 U	2.1 U	2.1 U	1 U	1 U	11 U	11 U	11 U	11 U	2.6 U
Bromomethane	ug/m3	0.14	0.39 U	0.39 U	0.39 U	0.78 U	0.39 U	0.39 U	0.39 U	0.78 U	0.78 U	0.78 U	3.9 U	0.39 U	0.78 U	0.78 U	0.78 U	0.39 U	0.39 U	3.8 U	3.8 U	3.8 U	3.8 U	0.95 U
Carbon disulfide	ug/m3	74	5.6	6.3	31	71	8	15	14	19	6.2 U	6 J	420	3.6	2.3 J	2 J	160	3.1 U	3.1 U	3.2 U	3.2 U	3.2 U	3.2 U	0.8 U
Carbon tetrachloride	ug/m3	0.48	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.35 J	0.3 J	0.36 J	0.4 J	1.3 U	1.3 U	6.3 U	0.63 U	1.3 U	1.3 U	0.45 J	2	0.36 J	6.2 U	6.2 U	6.2 U	1.6 U
Chlorobenzene	ug/m3	0.16 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.92 U	0.92 U	0.92 U	4.6 U	0.46 U	0.92 U	0.92 U	0.92 U	0.46 U	0.46 U	4.6 U	4.6 U	4.6 U	4.6 U	1.2 U
Chloroethane	ug/m3	1.7	0.26 U	0.26 U	0.67	1.1	1.7	0.26 U	0.26 U	0.26 U	0.53 U	0.26 U	0.53 U	1.1 U	0.53 U	0.53 U	0.53 U	0.53 U	0.26 U	260	23	16	11	4.5
Chloroform	ug/m3	1.7	0.49 U	0.49 U	0.64	1	0.63	0.37 J	0.45 J	0.39 J	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	0.98 U	0.98 U	0.74 J	3.3	0.49 U	83	32	20	16
Chloromethane	ug/m3	35	3.4	1.8	3.3	4.4	1.4	2.4	3.6	3.3	1.2	1.4	38	1.4	3.5	1.2	0.83 U	0.41 U	1.1	2 U	2 U	2 U	2 U	0.5 U
cis-1,2-Dichloroethene	ug/m3		0.4 U	0.4 U	0.71	1.1	0.21 J	0.29 J	0.25 J	0.79 U	0.79 U	0.79 U	4 U	0.4 U	0.79 U	0.79 U	0.79 U	0.4 J	0.4 U	2900	710	400	410	100
cis-1,3-Dichloropropene	ug/m3	0.16 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.91 U	0.91 U	0.91 U	4.5 U	0.45 U	0.91 U	0.91 U	0.91 U	0.45 U	0.45 U	4.4 U	4.4 U	4.4 U	4.4 U	1.1 U
Cyclohexane	ug/m3	0.12 U	0.34 U	0.34 U	0.34 U	0.69 U	0.34 U	0.34 U	0.34 U	0.69 U	0.69 U	0.69 U	3.4 U	0.34 U	0.69 U	0.69 U	0.69 U	0.34 U	0.34 U	3.4 U	3.4 U	3.4 U	3.4 U	0.85 U
Dibromochloromethane	ug/m3	0.3 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	1.7 U	1.7 U	1.7 U	8.5 U	0.85 U	1.7 U	1.7 U	1.7 U	0.85 U	0.85 U	8.6 U	8.6 U	8.6 U	8.6 U	2.2 U
Dichlorodifluoromethane	ug/m3	1.3	2.6	2.3	2	2.3	2.6	1.8	2.7	2.7	3.1	2.5	5.5	1.4	2.2	2.2	0.99 U	0.49 U	2.2	5 U	5 U	5 U	5 U	2.7
Ethanol	ug/m3	14	4.3 J	7.5 U	6.9 J	15 U	3.5 J	5.6 J	27	28	7.2 J	15 U	75 U	24	15	21	9.5 J	39	44	320	36	46	33	22
Ethyl acetate	ug/m3	0.13 U	0.36 U	0.36 U	0.36 U	0.72 U	0.36 U	0.37	0.36 U	0.72 U	0.72 U	0.72 U	9.4	140	5.9	0.72 U	1.4 U	59	0.36 U	7.3 U	3.6 U	3.6 U	7.3 U	0.9 U
Ethylbenzene	ug/m3	0.38	0.43 U	0.43 U	0.43 U	0.87 U	0.43 U	0.34 J	0.43 U	0.87 U	0.87 U	0.87 U	4.3 U	0.43 U	0.87 U	0.87 U	0.87 U	1.4	0.43 U	4.4 U	4.4 U	4.4 U	4.4 U	1.1 U
Hexachlorobutadiene	ug/m3	0.37 U	1.1 U	1.1 U	1.1 U	2.1 U	1.1 U	1.1 U	1.1 U	2.1 U	2.1 U	2.1 U	11 U	1.1 U	2.1 U	2.1 U	2.1 U	2.1 U	1.1 U	22 U	22 U	22 U	22 U	5.4 U
Hexane	ug/m3	0.89 J	14 U	14 U	14 U	28 U	14 U	7.3 J	14 U	28 U	28 U	28 U	16 J	5.3 J	28 U	28 U	28 U	14 U	14 U	5	3.6 U	3.6 U	3.6 U	2.3
Isopropyl alcohol	ug/m3	3.4 U	9.8 U	9.8 U	1.1 J	5.9 J	9.8 U	1.8 J	5 J	4.4 J	20 U	20 U	11 J	4.5 J	3.3 J	5.9 J	20 U	9.1 J	0.83 J	190	5.1	4.6	5 U	4.6
m,p-Xylene	ug/m3	0.76	0.87 U	0.87 U	0.52 J	1.7 U	0.87 U	0.35 J	0.3 J	1.7 U	1.7 U	1.7 U	8.7 U	0.87 U	1.7 U	1.7 U	1.7 U	2.9	0.76 J	8.6 U	8.6 U	8.6 U	8.6 U	2.2 U
Methyl methacrylate	ug/m3	0.14 U	0.41 U	0.41 U	0.41 U	0.82 U	0.41 U	0.41 U	0.41 U	0.82 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	0.82 U	0.82 U	0.41 U	0.41 U	4.1 U	4.1 U	4.1 U	4.1 U	1.1 U
Methylene chloride	ug/m3	0.84 J	0.99 J	0.89 J	1.2 J	1.6 J	3.5 U	0.43 J	0.89 J	3.5 U	6.9 U	6.9 U	24 J	4.4	1.2 J	6.9 U	6.9 U	1.8 J	0.68 J	7.8	7 U	9.6	7 U	12
Methyl-t-butyl ether	ug/m3	0.13 U	0.36 U	0.36 U	0.36 U	0.72 U	0.36 U	0.36 U	0.36 U	0.72 U	0.72 U	0.72 U	3.6 U	0.36 U	0.72 U	0.72 U	0.72 U	0.36 U	0.36 U	3.6 U	3.6 U	3.6 U	3.6 U	0.9 U
Naphthalene	ug/m3									1 U		8.9												
n-Heptane	ug/m3	0.45	0.41 U	0.41 U</																				

**Appendix D2.  
Summary of Analytical Results - Small Extraction Wells  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Area:	Extraction Well - Eastern Small Retail Space																							
Location:	EW-5																							
Sample ID:	EW-5-041409	EW-5-051509	EW-5-061109	EW-5-091709	EW-5-122909	EW-5-032610	EW-5-070110	EW-5-091610	EW-5-120710	EW-5-021711	EW-5-060211	EW-5-091511	EW-5-120811	EW-5-030812	EW-5-061412	EW-5-091312	EW-5-010313	EW-5-031513	EW-5-060713	EW-5-090613	EW-5-121313	EW-5-030714	EW-5-061314	
Sample Date:	4/14/2009	5/15/2009	6/11/2009	9/17/2009	12/29/2009	3/26/2010	7/1/2010	9/16/2010	12/7/2010	2/17/2011	6/2/2011	9/15/2011	12/8/2011	3/8/2012	6/14/2012	9/13/2012	1/3/2013	3/15/2013	6/7/2013	9/6/2013	12/13/2013	3/7/2014	6/13/2014	
Analyte	Units																							
1,1,1,2-Tetrachloroethane	ug/m3											25 U		12 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	0.39 J	1.2 U	1.2 U	1.2 U	
1,1,1-Trichloroethane	ug/m3	2600	3100	1900	3500	920	540	550	460	210	400	340	430	81	100	190	0.55 U	0.55 U	59	180	40	68	54	
1,1,2,2-Tetrachloroethane	ug/m3	68 U	3.4 U	3.4 U	3.4 U	3.4 U	6.8 U	3.4 U	6.8 U	1.4 U	1.4 U	6.9 U	14 U	3.4 U	3.4 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.32 U	0.69 U	0.69 U	
1,1,2-Trichloroethane	ug/m3	54 U	2.7 U	2.7 U	2.7 U	2.7 U	5.4 U	2.7 U	5.4 U	1.1 U	1.1 U	5.5 U	11 U	2.7 U	2.7 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.26 U	0.55 U	0.55 U	
1,1-Dichloroethane	ug/m3	360	450	430	230	100	50	53	42	29	34	33	44	16	11	21	0.4 U	0.4 U	6.4	20	4.8	7	7.4	
1,1-Dichloroethene	ug/m3	160	160	160	98	30	18	21	15	13	15	11	14	5	4.5	4.5	6.9	0.4 U	0.4 U	1.7	4.7	1.5	1.8	
1,2,4-Trichlorobenzene	ug/m3	74 U	3.7 U	3.7 U	3.7 U	7.5 U	15 U	3.7 U	7.4 U	1.5 U	1.5 U	7.4 U	30 U	7.4 U	15 U	1.5 U	1.5 U	1.5 U	1.5 U	0.74 U	0.35 U	0.74 U	0.74 U	
1,2,4-Trimethylbenzene	ug/m3	50 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	5 U	0.98 U	0.98 U	4.9 U	9.8 U	2.5 U	4.9 U	0.2 J	0.63	0.49 U	0.49 U	0.49 U	0.37	0.49 U	0.49 U	
1,2-Dibromoethane (EDB)	ug/m3	76 U	3.8 U	3.8 U	3.8 U	3.8 U	7.6 U	3.8 U	7.6 U	1.5 U	1.5 U	7.7 U	15 U	3.8 U	3.8 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.36 U	0.77 U	0.77 U	
1,2-Dichlorobenzene	ug/m3	60 U	3 U	3 U	3 U	3 U	6 U	3 U	6 U	1.2 U	1.2 U	6 U	12 U	3 U	6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.28 U	0.6 U	0.6 U	
1,2-Dichloroethane	ug/m3	40 U	2 U	2 U	2 U	2 U	4 U	2 U	4 U	0.81 U	0.81 U	4 U	8.1 U	2 U	2 U	0.17 J	0.4 U	0.4 U	0.4 U	0.4 U	0.19 U	0.4 U	0.4 U	
1,2-Dichloropropane	ug/m3	46 U	2.3 U	2.3 U	2.3 U	2.3 U	4.6 U	2.3 U	4.6 U	0.92 U	0.92 U	4.6 U	9.2 U	2.3 U	2.3 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.22 U	0.46 U	0.46 U	
1,2-Dichlorotetrafluoroethane	ug/m3	70 U	3.5 U	3.5 U	3.5 U	3.5 U	7 U	3.5 U	7 U															
1,3,5-Trimethylbenzene	ug/m3	50 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	5 U	0.98 U	0.98 U	4.9 U	9.8 U	2.5 U	4.9 U	0.49 U	0.19 J	0.49 U	0.49 U	0.49 U	0.23 U	0.49 U	0.49 U	
1,3-Butadiene	ug/m3	22 U	1.1 U	1.1 U	2.3 U	1.1 U	2.2 U	1.1 U	2.2 U	0.44 U	0.44 U	2.2 U	4.4 U	1.1 U	2.2 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.1 U	0.22 U	0.22 U	
1,3-Dichlorobenzene	ug/m3	60 U	3 U	3 U	3 U	3 U	6 U	3 U	6 U	1.2 U	1.2 U	6 U	12 U	3 U	6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.28 U	0.6 U	0.6 U	
1,4-Dichlorobenzene	ug/m3	60 U	3 U	3 U	3 U	3 U	6 U	3 U	6 U	1.2 U	1.2 U	6 U	12 U	3 U	6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.28 U	0.6 U	0.6 U	
1,4-Dioxane	ug/m3											7.2 U												
2-Butanone	ug/m3	64000	100000	230000	110000	7800	18000	28000	15000	4000	7200 B	17000	13000	2700	1800	870	840	12 J	1.7 J	1900	31000	680	1200	2100
2-Hexanone	ug/m3	40 U	2.7	2 U	2 U	2 U	4 U	2 U	4 U	0.82 U	0.82 U	82 U	8.2 U	2 U	4.1 U	0.43	0.41 U	0.41 U	0.41 U	0.41 U	0.49	0.41 U	0.53	0.41 U
4-Ethyltoluene	ug/m3	50 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	5 U	0.98 U	0.98 U	4.9 U	9.8 U	2.5 U	4.9 U	0.49 U	0.18 J	0.49 U	0.49 U	0.49 U	0.23 U	0.49 U	0.49 U	
4-Methyl-2-pentanone	ug/m3	40 U	2 U	2 U	2 U	2 U	4 U	2 U	4 U	0.82 U	0.82 U	4.1 U	8.2 U	2 U	4.1 U	0.27 J	0.34 J	0.41 U	0.41 U	0.41 U	0.56	0.41 U	0.41 U	0.46
Acetone	ug/m3	5600	14000	6900	9200	1700	3200	6000	4500	2000 B	1800 B	2200 B	3400	710	400	440	670 B	9.5	8.5 J	610	6800	210	380	610
Benzene	ug/m3	32 U	11	7.1	11	6.3	5.5	8.2	5	4.2	4.5	4.2	6.4 J	2.8	2 J	1.1	3.7	0.32	0.47	1	7.1	2.4	3.8	3
Benzyl chloride	ug/m3	52 U	2.6 U	2.6 U	2.6 U	2.6 U	5.2 U	2.6 U	5.2 U	1 U	1 U	5.2 U	10 U	2.6 U	5.2 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.24 U	0.52 U	0.52 U	
Bromodichloromethane	ug/m3	66 U	3.3 U	3.3 U	3.3 U	3.3 U	6.6 U	3.3 U	6.6 U	1.3 U	1.3 U	6.7 U	13 U	3.3 U	3.3 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.31 U	0.67 U	0.67 U	
Bromoform	ug/m3	110 U	5.1 U	5.1 U	5.1 U	5.1 U	11 U	5.1 U	11 U	2.1 U	2.1 U	10 U	21 U	5.2 U	10 U	1 U	1 U	1 U	1 U	1 U	0.48 U	1 U	1 U	1 U
Bromomethane	ug/m3	38 U	1.9 U	1.9 U	1.9 U	1.9 U	3.8 U	1.9 U	3.8 U	0.78 U	0.78 U	3.9 U	7.8 U	1.9 U	3.9 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.18 U	0.39 U	0.39 U	
Carbon disulfide	ug/m3	230	4	5.4	8.2	2.9	5.7	12	14	8	15	22	62 J	13 J	11 J	25	49	3.1 U	3.1 U	19	77	8.9	26	35
Carbon tetrachloride	ug/m3	62 U	3.1 U	3.1 U	3.1 U	3.1 U	6.2 U	3.1 U	6.2 U	1.3 U	1.3 U	6.3 U	13 U	1.2 J	3.1 U	0.4 J	0.38 J	0.63 U	0.39 J	0.63 U	0.47	0.63 U	0.63 U	
Chlorobenzene	ug/m3	46 U	2.3 U	2.3 U	2.3 U	2.3 U	4.6 U	2.3 U	4.6 U	0.92 U	0.92 U	4.6 U	9.2 U	2.3 U	4.6 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.22 U	0.46 U	0.46 U	
Chloroethane	ug/m3	26 U	11	15	7	6.5	3.5	3.6	5.5	3.1	3.4	2.6 U	7.5	1.3 U	2.6 U	2.9	5.3	0.26 U	0.26 U	1.5	4	0.86	1.9	1.9
Chloroform	ug/m3	48 U	7.2	6.5	5.8	2.6	4.8 U	2.4 U	4.8 U	1.1	1.2	4.9 U	9.8 U	1.1 J	2.4 U	0.98	1.1	0.49 U	0.49 U	0.59	1.6	0.49 U	0.59	0.76
Chloromethane	ug/m3	20 U	1 U	1 U	1 U	1 U	2 U	1 U	2 U	0.41 U	0.41 U	2.1 U	4.1 U	1 U	2.1 U	0.21 U	0.21 U	0.21	1.1	0.41 U	0.19 U	0.41 U	0.41 U	
cis-1,2-Dichloroethene	ug/m3	150	270	250	170	58	32	43	31	17	27	27	35	11	17	6.9	8.6	14	0.4 U	0.4 U	4.3	13	1.9	4.1
cis-1,3-Dichloropropene	ug/m3	44 U	2.2 U	2.2 U	2.2 U	2.2 U	4.4 U	2.2 U	4.4 U	0.91 U	0.91 U	4.5 U	9.1 U	2.3 U	2.3 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.21 U	0.45 U	0.45 U	
Cyclohexane	ug/m3	34 U	1.7 U	1.7 U	1.7 U	1.7 U	3.4 U	1.7 U	3.4 U	0.69 U	0.69 U	3.4 U	6.9 U	1.7 U	3.4 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.16 U	0.34 U	0.34 U	
Dibromochloromethane	ug/m3	86 U	4.3 U	4.3 U	4.3 U	4.3 U	8.6 U	4.3 U	8.6 U	1.7 U	1.7 U	8.5 U	17 U	4.3 U	4.3 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.4 U	0.85 U	0.85 U	
Dichlorodifluoromethane	ug/m3	50 U	3	3.2	2.5 U	2.5 U	5 U	2.5	3.7	4.9 U	9.9 U	2.8	4.9 U	2.9	2.9	2.6	0.49	2.5	2.1	1.7	2.5	2.1	2	
Ethanol	ug/m3	130	30	26	3.8 U	45	28	68	89	23	19	24 J	150 J	12 J	290	14	100	7.5	3.5 J	13	3.5 U	39	43	32
Ethyl acetate	ug/m3	73 U	1.8 U	1.8 U	1.8 U	1.8 U	3.6 U	1.8 U	3.6 U	0.72 U	0.72 U	3.6 U	7.2 U	1.8 U	3.6 U	0.42	0.30	0.36 U	1.2	2.6	0.17 U	5.5	4.8	3.4
Ethylbenzene	ug/m3	44 U	2.2 U	2.2 U	2.2 U	2.2 U	4.4 U	2.2 U	4.4 U	0.87 U	0.87 U	4.3 U	8.7 U	2.2 U	4.3 U	0.12 J	0.69	0.43 U	0.43 U	0.43 U	0.41	0.43 U	0.43 U	
Hexachlorobutadiene	ug/m3	220 U	11 U	11 U	5.3 U	11 U	22 U	5.3 U	11 U	2.1 U	2.1 U	11 U	21 U	4.2 J	11 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.5 U	1.1 U	1.1 U	
Hexane	ug/m3	36 U	3.3	1.8 U	1.8 U	1.8 U	3.6 U	1.8 U	3.6 U	0.7 U	0.7 U	3.5 U	7.0 U	9.4 J	4.3 J	2 J	14 J	2.2 J	14 U	6.6 U	14 U	14 U	14 U	
Isopropyl alcohol	ug/m3	290	24	57	35	2.5 U	20	54	59	11	13	25 U	200 J	49 U	11	13 J	9.8 U	11	9.8 J	9.8 U	4.6 U	2.9 J	6 J	11
m,p-Xylene	ug/m3	86 U	4.3 U	4.3 U	4.3 U	4.3 U	8.6 U	4.3 U	8.6 U	1.7 U	1.7 U	8.7 U	17 U	4.3 U	5.4 J	0.87 U	1.9	0.87 J	0.87 U	0.87 U	1.2	0.87 U	0.56 J	0.81 J
Methyl methacrylate	ug/m3									0.82 U	4.1 U	8.2 U	2 U	4.1 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.19 U	0.41 U	0.41 U	0.41 U	
Methylene chloride	ug/m3	720	21	15	7 U	25	14 U	8.6																

**Appendix D2.**  
**Summary of Analytical Results - Small Extraction Wells**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:	Extraction Well - Eastern Small Retail Space												Extraction Well - Western Small Retail Space										
	EW-5												EW-7										
Location:	EW-5-091214	EW-5-121914	EW-05-032715	EW-5-061115	EW-5-091615	EW-5-121815	EW-5-021816	EW-5-080516	EW-5-021017	EW-5-090717	EW-5-022818	EW-5-091218	EW-5-020819	EW-5-090619	EW-7-020309	EW-7-021109	EW-7-021809	EW-7-022609	EW-7-030609	EW-7-041409	EW-7-051509	EW-7-061109	EW-7-091709
Sample ID:	9/12/2014	12/19/2014	3/27/2015	6/11/2015	9/16/2015	12/18/2015	2/18/2016	8/5/2016	2/10/2017	9/7/2017	2/28/2018	9/12/2018	2/8/2019	9/6/2019	2/3/2009	2/11/2009	2/18/2009	2/26/2009	3/6/2009	4/14/2009	5/15/2009	6/11/2009	9/17/2009
Sample Date:																							
Analyte	Units																						
1,1,1,2-Tetrachloroethane	ug/m3	2.5 U	1.2 U	1.2 U	1.2 U	2.5 U		2.5 U	1.2 U	2.5 U	12 U	2.5 U	1.2 U	1.2 U									
1,1,1-Trichloroethane	ug/m3	74	25	14	0.19 J	55	32	68	7.4	42	17	49	11	40	5600	8500	7800	8200	8100	1600	3600	2600	1400
1,1,2,2-Tetrachloroethane	ug/m3	0.69 U	0.69 U	0.69 U	0.69 U	3.4 U	1.4 U	1.4 U	6.9 U	0.69 U	1.4 U	6.9 U	1.4 U	0.69 U	0.69 U	6.8 U	1.4 U	1.7 U	1.7 U	1.7 U	6.8 U	3.4 U	3.4 U
1,1,2-Trichloroethane	ug/m3	1.1 U	0.55 U	0.55 U	0.55 U	2.7 U	1.1 U	1.1 U	5.5 U	0.55 U	1.1 U	5.5 U	1.1 U	0.55 U	0.55 U	5.4 U	1.1 U	1.4 U	1.4 U	1.4 U	5.4 U	2.7 U	2.7 U
1,1-Dichloroethane	ug/m3	9.3	4.2	2.9	0.4 U	6.9	4.4	2.8	7.5	1.8	6.2	2.3 J	5.9	0.4 U	4.9	1700	1800	1600	2100	1700	590	1000	1100
1,1-Dichloroethene	ug/m3	2.4	1	0.9	0.4 U	1.5 J	2.4	1.1	0.84	4 U	0.4	1.3	4 U	0.4 U	0.4 U	1.4	15	8.5	9.4	6.6	4 U	4.2	4.2
1,2,4-Trichlorobenzene	ug/m3	1.5 U	0.74 U	0.74 U	0.74 U	3.7 U	1.5 U	1.5 U	7.4 U	0.74 U	1.5 U	7.4 U	1.5 U	0.74 U	0.74 U	7.4 U	1.5 U	1.9 U	1.9 U	1.9 U	7.4 U	3.7 U	3.7 U
1,2,4-Trimethylbenzene	ug/m3	0.98 U	0.49 U	0.16 J	0.22 J	2.5 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	4.9 U	0.98 U	1.4	0.49 U	5 U	1 U	1.3 U	1.3 U	5 U	2.5 U	2.5 U	2.5 U
1,2-Dibromoethane (EDB)	ug/m3	0.77 U	0.77 U	0.77 U	0.77 U	3.8 U	1.5 U	1.5 U	7.7 U	0.77 U	1.5 U	7.7 U	1.5 U	0.77 U	0.77 U	7.6 U	1.6 U	1.9 U	1.9 U	1.9 U	7.6 U	3.8 U	3.8 U
1,2-Dichlorobenzene	ug/m3	1.2 U	0.6 U	0.6 U	0.6 U	3 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	6 U	1.2 U	2.4 U	0.6 U	6 U	1.2 U	1.5 U	1.5 U	1.5 U	6 U	3 U	3 U
1,2-Dichloroethane	ug/m3	0.4 U	0.4 U	0.4 U	0.4 U	2 U	0.81 U	0.81 U	4 U	0.4 U	0.81 U	4 U	0.81 U	0.4 U	0.4 U	4 U	0.8 U	1 U	1 U	4 U	2 U	2 U	2 U
1,2-Dichloropropane	ug/m3	0.46 U	0.46 U	0.46 U	0.46 U	2.3 U	0.92 U	0.92 U	4.6 U	0.46 U	0.92 U	4.6 U	0.46 U	0.46 U	0.46 U	4.6 U	0.92 U	1.2 U	1.2 U	1.2 U	4.6 U	2.3 U	2.3 U
1,2-Dichlorotetrafluoroethane	ug/m3					1.4 U		7 U							7 U	1.4 U	1.8 U	1.8 U	1.8 U	7 U	3.5 U	3.5 U	
1,3,5-Trimethylbenzene	ug/m3	0.98 U	0.49 U	0.49 U	0.11 J	2.5 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	4.9 U	0.98 U	0.49 U	0.49 U	5 U	1 U	1.3 U	1.3 U	5 U	2.5 U	2.5 U	2.5 U
1,3-Butadiene	ug/m3	0.44 U	0.22 U	0.22 U	0.22 U	1.1 U	0.44 U	0.44 U	2.2 U	0.22 U	0.44 U	2.2 U	0.44 U	0.22 U	0.22 U	2.2 U	0.44 U	0.55 U	0.55 U	0.55 U	2.2 U	1.1 U	1.1 U
1,3-Dichlorobenzene	ug/m3	1.2 U	0.6 U	0.6 U	0.6 U	3 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	6 U	1.2 U	1.6 J	0.6 U	6 U	1.2 U	1.5 U	1.5 U	1.5 U	6 U	3 U	3 U
1,4-Dichlorobenzene	ug/m3	1.2 U	0.6 U	0.6 U	0.6 U	3 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	6 U	1.2 U	1.6 J	0.6 U	6 U	1.2 U	1.5 U	1.5 U	1.5 U	6 U	3 U	3 U
1,4-Dioxane	ug/m3					7.2 U		36 U															
2-Butanone	ug/m3	3800	260	91	9.1 J	1700 E	410	130	4800	29	4500	750	5500	110	7300	8.7	12	7.3	8.5	5.5	4.5	7.1	16
2-Hexanone	ug/m3	0.82 U	0.41 U	0.16 J	0.34 J	2 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	4.1 U	0.82 U	0.41 U	0.41 U	4 U	0.8 U	1 U	1 U	4 U	2 U	2 U	2 U
4-Ethyltoluene	ug/m3	0.98 U	0.49 U	0.49 U	0.49 U	2.5 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	4.9 U	0.98 U	0.49 U	0.49 U	5 U	1 U	1.3 U	1.3 U	5 U	2.5 U	2.5 U	2.5 U
4-Methyl-2-pentanone	ug/m3	0.82 U	0.41 U	0.41 U	0.41 U	2 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	4.1 U	0.82 U	0.41 U	0.41 U	4 U	0.8 U	1 U	1 U	4 U	2 U	2 U	2 U
Acetone	ug/m3	500	98	49	21	550	120	58	570	11	700	320	710	47	1700	580	38	58	30	24	15	24	7.9
Benzene	ug/m3	2.7	3.4	3.1	0.35	2.9	5	2.8	4	0.38	2.7	3.1	3.6	2.5	3.2 U	3.9	4.5	1.9	2.3	3.2 U	2.6	2.8	3
Benzyl chloride	ug/m3	0.52 U	0.52 U	0.52 U	0.52 U	2.6 U	1 U	1 U	5.2 U	0.52 U	1 U	5.2 U	1 U	0.52 U	0.52 U	5.2 U	1.1 U	1.3 U	1.3 U	1.3 U	5.2 U	2.6 U	2.6 U
Bromodichloromethane	ug/m3	0.67 U	0.67 U	0.67 U	0.67 U	3.4 U	1.3 U	1.3 U	6.7 U	0.67 U	1.3 U	6.7 U	1.3 U	0.67 U	0.67 U	6.6 U	1.4 U	1.7 U	1.7 U	1.7 U	6.6 U	3.3 U	3.3 U
Bromoform	ug/m3	2.1 U	1 U	1 U	1 U	5.2 U	2.1 U	2.1 U	10 U	1 U	2.1 U	10 U	2.1 U	1 U	1 U	11 U	2.1 U	2.6 U	2.6 U	2.6 U	11 U	5.1 U	5.1 U
Bromomethane	ug/m3	0.78 U	0.39 U	0.39 U	0.39 U	1.9 U	0.78 U	0.78 U	3.9 U	0.39 U	0.78 U	3.9 U	0.78 U	0.39 U	0.39 U	3.8 U	0.76 U	0.95 U	0.95 U	0.95 U	3.8 U	1.9 U	1.9 U
Carbon disulfide	ug/m3	46	13	7.4	0.98 J	56	19	6.1 J	100	1.2 J	120	62	200	66 J	210	5.7	3.4	2.7	3.7	3.3	3.2 U	3.2	2.7
Carbon tetrachloride	ug/m3	0.63 U	0.33 J	0.31 J	0.33 J	3.1 U	1.3 U	1.3 U	6.3 U	0.63 U	1.3 U	6.3 U	1.3 U	0.63 U	6	6.2 U	1.3 U	1.6 U	1.6 U	1.6 U	6.2 U	3.1 U	3.1 U
Chlorobenzene	ug/m3	0.46 U	0.46 U	0.46 U	0.46 U	2.3 U	0.92 U	0.92 U	4.6 U	0.46 U	0.92 U	4.6 U	0.46 U	0.46 U	4.6 U	0.92 U	1.2 U	1.2 U	1.2 U	4.6 U	2.3 U	2.3 U	2.3 U
Chloroethane	ug/m3	1.6	0.95	0.26 U	0.26 U	1.3 U	0.53 U	0.53 U	2.6 U	0.53 U	1.3 U	2.6 U	1.2	0.53 U	0.26 U	1.70	150	88	41	33	7.1	9.6	10
Chloroform	ug/m3	0.82	0.53	0.18 J	0.17 J	0.63 J	0.98 U	0.98 U	4.9 U	0.49 U	1	4.9 U	0.84 J	15	0.49 U	4.8 U	1	1.2 U	1.3	1.2 U	4.8 U	2.7	2.6
Chloromethane	ug/m3	61	0.41 U	0.41 U	0.41 U	2.1 U	83	0.83 U	4.1 U	0.41 U	76	4.1 U	0.83 U	0.41 U	0.41 U	2 U	0.4 U	0.5 U	0.5 U	2 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/m3	5	1.4	0.78	0.4 U	4	0.79 U	0.79 U	4 U	0.4 U	2.8	4 U	2.3	1.8	2.1	1100	1300	1200	1700	1200	520	1100	1200
cis-1,3-Dichloropropene	ug/m3	0.45 U	0.45 U	0.45 U	0.45 U	2.3 U	0.91 U	0.91 U	4.5 U	0.45 U	0.91 U	4.5 U	0.91 U	0.45 U	0.45 U	4.4 U	0.88 U	1.1 U	1.1 U	1.1 U	4.4 U	2.2 U	2.2 U
Cyclohexane	ug/m3	0.69 U	0.34 U	0.34 U	0.34 U	1.7 U	0.69 U	0.69 U	3.4 U	0.34 U	0.69 U	3.4 U	0.69 U	0.34 U	0.34 U	3.4 U	5.6	5	3.7	2.1	3.4 U	1.7 U	1.7 U
Dibromochloromethane	ug/m3	0.85 U	0.85 U	0.85 U	0.85 U	4.3 U	1.7 U	1.7 U	8.5 U	0.85 U	1.7 U	8.5 U	1.7 U	0.85 U	0.85 U	8.6 U	1.8 U	2.2 U	2.2 U	2.2 U	8.6 U	4.3 U	4.3 U
Dichlorodifluoromethane	ug/m3	2.3	2.5	2	3.3	2.2 J	3.1	2.4	4.9 U	1.5	2.2	4.9 U	2.1	0.49 U	0.49 U	5 U	2.5	3.2	770	2.6	5 U	2.9	3.3
Ethanol	ug/m3	15	33	31	15	17 J	21	28	75 U	6.7 J	13 J	35 J	11 J	36	18	350	26	29	17	15	3.8 U	19	18
Ethyl acetate	ug/m3	3.6	3.6	2.6	0.36 U	1.8 U	2.8	0.72 U	3.6 U	2.5	5.2	3.6 U	2.6	0.36 U	0.36 U	7.3 U	0.72 U	0.9 U	1.9 U	0.9 U	7.3 U	1.8 U	1.8 U
Ethylbenzene	ug/m3	0.87 U	0.43 U	0.16 J	0.15 J	2.2 U	0.87 U	0.87 U	4.3 U	0.43 U	0.87 U	4.3 U	0.87 U	1.2	0.43 U	4.4 U	0.88 U	1.1 U	1.1 U	4.4 U	2.2 U	2.2 U	2.2 U
Hexachlorobutadiene	ug/m3	2.1 U	1.1 U	1.1 U	1.1 U	5.3 U	2.1 U	2.1 U	11 U	1.1 U	2.1 U	11 U	2.1 U	2.1 U	2.1 U	22 U	4.3 U	5.4 U	5.4 U	5.4 U	22 U	11 U	11 U
Hexane	ug/m3	28 U	14 U	7.4 J	1.4 J	70 U	28 U	28 U	140 U	1.4 J	28 U	140 U	28 U	14 U	14 U	10	10	7.6	5.5	3.1	3.6 U	4	2.1
Isopropyl alcohol	ug/m3	8.4 J	2 J	9.8 J	9.8 U	49 U	20 U	14 J	20 U	2 J	20 U	5.1 J	6.2 J	9.8 U	8.7 J	210	18	21	12	8.5	5 U	12	17
m,p-Xylene	ug/m3	1.7 U	0.24 J	0.39 J	0.54 J	4.3 U	1.3 J	1.7 U	8.7 U	0.87 U	1.7 U	8.7 U	1.7 U	2.6	0.87 U	8.6 U	1.8 U	2.2 U	2.2 U	2.2 U	8.6 U	4.3 U	4.3 U
Methyl methacrylate	ug/m3	0.82 U	0.41 U	0.41 U		2 U		0.82 U		0.41 U	0.82 U		0.41 U	0.41 U									

**Appendix D2.**  
**Summary of Analytical Results - Small Extraction Wells**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:		Extraction Well - Western Small Retail Space																							
Location:		EW-7																							
Sample ID:	EW-7-122909	EW-7-032610	EW-7-070110	EW-7-091610	EW-7-120710	EW-7-021711	EW-7-060211	EW-7-091511	EW-7-120811	EW-7-030812	EW-7-061412	EW-7-091312	EW-7-010313	EW-7-031513	EW-7-060713	EW-7-090613	EW-7-100313	EW-7-121313	EW-7-030714	EW-7-061314	EW-7-091214	EW-7-121914	EW-07-032715		
Sample Date:	12/29/2009	3/26/2010	7/1/2010	9/16/2010	12/7/2010	2/17/2011	6/2/2011	9/15/2011	12/8/2011	3/8/2012	6/14/2012	9/13/2012	1/3/2013	3/15/2013	6/7/2013	9/6/2013	10/3/2013	12/13/2013	3/7/2014	6/13/2014	9/12/2014	12/19/2014	3/27/2015		
Analyte	Units																								
1,1,1,2-Tetrachloroethane	ug/m3							2.5 U		12 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	0.44 U	1.2 U	1.2 U	1.2 U	1.2 U	2.5 U	1.2 U	1.2 U		
1,1,1-Trichloroethane	ug/m3	340	51	250	290	160	110	5.5 U	110	66	11	47	95	0.55 U	3.1	15	76	52	41	30	15	52	6.1	25	
1,1,2,2-Tetrachloroethane	ug/m3	3.4 U	0.68 U	0.68 U	0.68 U	0.69 U	0.69 U	6.9 U	1.4 U	0.69 U	3.4 U	0.69 U	0.69 U	0.69 U	0.69 U	0.24 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	
1,1,2-Trichloroethane	ug/m3	2.7 U	0.54 U	0.54 U	0.54 U	0.55 U	0.55 U	5.5 U	1.1 U	0.55 U	2.7 U	0.55 U	0.55 U	0.55 U	0.55 U	0.19 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	1.1 U	0.55 U	0.55 U	
1,1-Dichloroethane	ug/m3	470	85	320	340	220	150	45	150	80	6.4	42	100	0.4 U	2	7	51	25	12	6.9	5.4	20	1.8	4.9	
1,1-Dichloroethene	ug/m3	2 U	0.4 U	0.81	0.94	0.63	0.4 U	4 U	0.79 J	0.13 J	2 U	0.4 U	0.4 U	0.4 U	0.4 U	0.14 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	
1,2,4-Trichlorobenzene	ug/m3	7.5 U	1.5 U	0.74 U	0.74 U	0.74 U	0.74 U	7.4 U	3 U	1.5 U	15 U	1.5 U	1.5 U	1.5 U	0.74 U	0.26 U	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	1.5 U	0.74 U	0.74 U	
1,2,4-Trimethylbenzene	ug/m3	2.5 U	2.5	0.5 U	0.5 U	0.49 U	0.49 U	4.9 U	0.98 J	0.32 J	4.9 U	0.32 J	0.97	0.49	0.3 J	0.49 U	0.5	0.77	0.58	0.49 U	0.49 U	0.98 U	0.49 U	1.4	
1,2-Dibromoethane (EDB)	ug/m3	3.8 U	0.76 U	0.76 U	0.76 U	0.77 U	0.77 U	7.7 U	1.5 U	0.77 U	3.8 U	0.77 U	0.77 U	0.77 U	0.77 U	0.27 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	
1,2-Dichlorobenzene	ug/m3	3 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	6 U	1.2 U	0.6 U	6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.21 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	1.2 U	0.6 U	0.6 U	
1,2-Dichloroethane	ug/m3	2 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	4 U	0.81 U	0.4 U	2 U	0.4 U	0.4 U	0.4 U	0.4 U	0.14 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	
1,2-Dichloropropane	ug/m3	2.3 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	4.6 U	0.92 U	0.46 U	2.3 U	0.46 U	0.46 U	0.46 U	0.46 U	0.16 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	
1,2-Dichlorotetrafluoroethane	ug/m3	3.5 U	0.7 U	0.7 U	0.7 U																				
1,3,5-Trimethylbenzene	ug/m3	2.5 U	1.1	0.5 U	0.5 U	0.49 U	0.49 U	4.9 U	0.98 U	0.49 U	4.9 U	0.49 U	0.5	0.49 U	0.49 U	0.49 U	0.24	0.32 J	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.69	
1,3-Butadiene	ug/m3	1.1 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	2.2 U	0.44 U	0.22 U	2.2 U	0.22 U	0.22 U	0.22 U	0.22 U	0.078 U	0.22 U	0.22 U	0.22 U	0.22 U	0.44 U	0.22 U	0.22 U	0.22 U	
1,3-Dichlorobenzene	ug/m3	3 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	6 U	1.2 U	0.6 U	6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.21 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	1.2 U	0.6 U	0.6 U	
1,4-Dichlorobenzene	ug/m3	3 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	6 U	1.2 U	0.6 U	6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.21 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	1.2 U	0.6 U	0.6 U	
1,4-Dioxane	ug/m3							0.72 U																	
2-Butanone	ug/m3	3.5	31	3.8	1.8	4.1	5.3 B	59 U	24 J	6.2 J	100 J	14	3.6 J	12	210	99	12	8.5 J	5.9 J	3.8 J	9.3 J	7.2 J	35	9.7 J	
2-Hexanone	ug/m3	2 U	0.4 U	1	0.4 U	0.41 U	0.41 U	82 U	0.82 J	0.14 J	4.1 U	0.28 J	0.64	0.41 U	0.39 J	0.41 U	0.51	0.41 U	0.41 U	0.41 U	0.41 U	0.49	0.82 U	0.41 U	1
4-Ethyltoluene	ug/m3	2.5 U	0.5 U	0.5 U	0.5 U	0.49 U	0.49 U	4.9 U	0.98 U	0.49 U	4.9 U	0.49 U	0.21 J	0.49 U	0.49 U	0.17 U	0.27 J	0.49 U	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.33 J	
4-Methyl-2-pentanone	ug/m3	2 U	0.4 U	0.4 U	0.4 U	0.41 U	0.41 U	4.1 U	0.82 U	0.13 J	4.1 U	0.41 U	1.6	0.31 J	0.41 U	0.41 U	0.14 U	0.41 U	0.41 U	0.41 U	0.41 U	0.82 U	0.41 U	0.46	
Acetone	ug/m3	49	26	25	12	42 B	35 B	48 U	23	12	46 J	31	17 B	9.5	55	28	24	35	14	6.9 J	19	18 J	9.4 J	13	
Benzene	ug/m3	2.2	1.5	1.7	2.1	1.4	1.6	3.2 U	2.5	1.6	3.2 U	1.5	1.2	0.32	0.54	0.61	1.9	1.9	0.86	1.3	1.1	0.59 J	0.49	2.1	
Benzyl chloride	ug/m3	2.6 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	5.2 U	1 U	0.52 U	5.2 U	0.52 U	0.52 U	0.52 U	0.52 U	0.18 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	
Bromodichloromethane	ug/m3	3.3 U	0.66 U	0.66 U	0.66 U	0.67 U	0.67 U	6.7 U	1.3 U	0.67 U	3.4 U	3.2	0.67 U	0.67 U	0.67 U	0.24 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	
Bromoforn	ug/m3	5.1 U	1.1 U	1.1 U	1.1 U	1 U	1 U	10 U	2.1 U	1 U	10 U	1 U	1 U	1 U	1 U	0.36 U	1 U	1 U	1 U	1 U	1 U	2.1 U	1 U	1 U	
Bromomethane	ug/m3	1.9 U	0.38 U	0.38 U	0.38 U	0.39 U	0.39 U	3.9 U	0.78 U	0.39 U	3.9 U	0.39 U	0.39 U	0.39 U	0.39 U	0.14 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.78 U	0.39 U	0.39 U	
Carbon disulfide	ug/m3	1.6 U	1.5	0.93	0.9	0.78	0.31 U	3.1 U	6.2 J	3.1 U	31 U	0.41 J	3.1 U	3.1 U	0.57 J	7.4	0.42 J	3.1 U	4.6	7.4	12	6.2 U	3.7	10	
Carbon tetrachloride	ug/m3	3.1 U	0.62 U	0.62 U	0.62 U	0.63 U	0.63 U	6.3 U	1.3 U	0.34 J	3.1 U	0.3 J	0.33 J	0.63	0.47 J	0.63 U	0.38	0.4 J	0.63 U	0.63 U	0.63 U	0.63 U	0.36 J	0.21 J	
Chlorobenzene	ug/m3	2.3 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	4.6 U	0.92 U	0.46 U	4.6 U	0.46 U	0.46 U	0.46 U	0.46 U	0.16 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	
Chloroethane	ug/m3	6.5	1.6	2.2	3.6	2	6.5	2.6 U	2.6 U	2.6 U	1.9	0.26 U	0.26 U	0.26 U	0.26 U	0.92	0.093 U	0.61	0.63	1.6	1.4	0.53 U	0.26 U	0.97	
Chloroform	ug/m3	2.7	1.1	4.2	4.4	3.9	3	4.9 U	5	3.8	2.4 U	3.1	4.1	0.49 U	0.36 J	2	6.6	2.7	2.6	2	2.4	3.8	0.91	2.1	
Chloromethane	ug/m3	1 U	0.2 U	0.2 U	0.2 U	0.21 U	0.21 U	2.1 U	0.41 U	0.21 U	2.1 U	0.21 U	0.21 U	0.21 U	0.21 U	0.14 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.83 U	0.41 U	0.41 U	
cis-1,2-Dichloroethene	ug/m3	680	120	660	490	350	65	210	99	5.1	53	120	0.4 U	1.4	5.1	54	24	6	5	4.7	18	0.99	3.1		
cis-1,3-Dichloropropene	ug/m3	2.2 U	0.44 U	0.44 U	0.44 U	0.45 U	0.45 U	4.5 U	0.91 U	0.45 U	2.3 U	0.45 U	0.45 U	0.45 U	0.45 U	0.16 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	
Cyclohexane	ug/m3	1.7 U	0.34 U	0.34 U	0.41	0.34 U	0.34 U	3.4 U	0.69 J	0.34 U	3.4 U	0.34 U	0.34 U	0.34 U	0.34 U	0.12 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.69 U	0.34 U	0.34 U	
Dibromochloromethane	ug/m3	4.3 U	0.86 U	0.86 U	0.86 U	0.85 U	0.85 U	8.5 U	1.7 U	0.85 U	4.3 U	0.85 U	0.85 U	0.85 U	0.85 U	0.3 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	
Dichlorodifluoromethane	ug/m3	2.5 U	1.5	2.2	1.5	2.1	0.49 U	4.9 U	2.7	2.6	4.9 U	3	0.49 U	0.49	2.5	2	1.5	0.49 U	2.4	2	1.9	2.5	2.6	1.5	
Ethanol	ug/m3	18	37	31	1.9 U	1.9 U	18	38 U	22	23	160	31	140	75	27	22	14	30	12	13	32	18	11	7.5 U	
Ethyl acetate	ug/m3	1.8 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	3.6 U	0.72 U	0.36 U	11	0.63	0.36 U	0.36 U	3	3.6	0.13 U	0.36 U	0.36 U	0.36 U	0.36 U	0.72 U	1.7	29	
Ethylbenzene	ug/m3	2.2 U	0.57	0.44 U	0.44 U	0.43 U	0.43 U	4.3 U	0.87 J	0.44 J	4.3 U	0.43 U	0.43 U	0.43 U	0.43 U	0.44	0.56	0.43 U	0.43 U	0.43 U	0.43 U	0.87 U	0.43 U	1.2	
Hexachlorobutadiene	ug/m3	11 U	2.2 U	1.1 U	1.1 U	1.1 U	1.1 U	11 U	2.1 U	1.1 U	11 U	1.1 U	1.1 U	1.1 U	1.1 U	0.37 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	2.1 U	1.1 U	1.1 U	
Hexane	ug/m3	1.8 U	0.36 U	0.97	0.71 U	0.87	0.35 U	3.5 U	28 U	14 U	4 J	0.55 J	14 U	14 J	3.5 J	0.78 J	0.9 J	0.9 J	14 U	14 U	14 U	28 U	14 U	8.1 J	
Isopropyl alcohol	ug/m3	2.5 U	80	2.2	2.6	2.8	0.25 U	25 U	2.3	30	9.8 U	98 U	14	9.8 U	9.8	9.8 U	9.8 U	17	13	9.8 U	1.8 J	20 U	4.8 J	12	
m,p-Xylene	ug/m3	4.3 U	1.4	0.93	1	0.87 U	0.87 U	8.7 U	1.7 J	0.82 J	8.7 U	0.45 J	1.3	0.87	0.33 J	0.5 J	1	1.5	0.87 U	0.49 J	0.9	1.7 U	0.26 J	0.68 J	
Methyl methacrylate	ug/m3					0.41 U	0.41 U	4.1 U	0.82 U	0.41 U	4.1 U	0.41 U	0.41 U	0.41 U	0.41 U	0.14 U	0.41 U	0.41 U	0.41 U	0.41 U	0.82 U	0.41 U	0.41 U	0.41 U	
Methylene chloride	ug/m3	27	1.4 U	2.4	0.81	1.9	2.4	6.9 U	6.9 J	1.5 J	33 J	2.1 J	5.4 B	3.5	10	1.5 J	1.7	1.5 J	0.82 J	0.85 J	1.3 J	3.5 U	0.49 J		
Methyl-t-butyl ether	ug/m3	1.8 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	3.6 U	0.72 J	0.36 U	3.6 U	0.36 U	0.36 U	0.36 U	0.36 U	0.13 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.72 U	0.36 U	0.36 U	
Naphthalene	ug/m3																								
n-Heptane	ug/m3	2 U	0.4 U	0.4 U	0.4 U	0.41 U																			

**Appendix D2.  
Summary of Analytical Results - Small Extraction Wells  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Area:		Extraction Well - Western Small Retail Space										
Location:		EW-7										
Sample ID:	EW-7-061115	EW-7-091615	EW-7-121815	EW-7-021816	EW-7-080516	EW-7-021017	EW-7-090717	EW-7-022818	EW-7-091218	EW-7-020819	EW-7-090619	
Sample Date:	6/11/2015	9/16/2015	12/18/2015	2/18/2016	8/5/2016	2/10/2017	9/7/2017	2/28/2018	9/12/2018	2/8/2019	9/6/2019	
Analyte	Units											
1,1,1,2-Tetrachloroethane	ug/m3	1.2 U	2.5 U		2.5 U		1.2 U	2.5 U	2.5 U	2.5 U	1.2 U	1.2 U
1,1,1-Trichloroethane	ug/m3	14	63	40	1.1 U		30	1.2	20	7.9	8.7	8.3
1,1,2,2-Tetrachloroethane	ug/m3	0.69 U	1.4 U	1.4 U	1.4 U	6.9 U	0.69 U	1.4 U	1.4 U	1.4 U	0.69 U	0.69 U
1,1,2-Trichloroethane	ug/m3	0.55 U	1.1 U	1.1 U	1.1 U	5.5 U	0.55 U	1.1 U	1.1 U	1.1 U	0.55 U	0.55 U
1,1-Dichloroethane	ug/m3	3.7	16	6.5	0.81 U	30	6.3	0.81 U	2.2	1.3	0.4 U	1.3
1,1-Dichloroethene	ug/m3	0.4 U	0.79 U	0.79 U	0.79 U	4 U	0.4 U	0.79 U	0.79 U	0.79 U	0.4 U	0.4 U
1,2,4-Trichlorobenzene	ug/m3	0.74 U	1.5 U	1.5 U	1.5 U	7.4 U	0.74 U	1.5 U	1.5 U	1.5 U	1.5 U	0.74 U
1,2,4-Trimethylbenzene	ug/m3	0.44 J	0.98 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	0.98 U	0.98 U	0.49 U	0.49 U
1,2-Dibromoethane (EDB)	ug/m3	0.77 U	1.5 U	1.5 U	1.5 U	7.7 U	0.77 U	1.5 U	1.5 U	1.5 U	0.77 U	0.77 U
1,2-Dichlorobenzene	ug/m3	0.6 U	1.2 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	1.2 U	1.2 U	2.4 U	0.6 U
1,2-Dichloroethane	ug/m3	0.16 J	0.81 U	0.81 U	0.81 U	4 U	0.4 U	0.81 U	0.81 U	0.81 U	0.4 U	0.4 U
1,2-Dichloropropane	ug/m3	0.46 U	0.92 U	0.92 U	0.92 U	4.6 U	0.46 U	0.92 U	0.92 U	0.92 U	0.46 U	0.46 U
1,2-Dichlorotetrafluoroethane	ug/m3			1.4 U		7 U						
1,3,5-Trimethylbenzene	ug/m3	0.23 J	0.98 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	0.98 U	0.98 U	0.49 U	0.49 U
1,3-Butadiene	ug/m3	0.22 U	0.44 U	0.44 U	0.44 U	2.2 U	0.22 U	0.44 U	0.44 U	0.42 J	0.22 U	0.22 U
1,3-Dichlorobenzene	ug/m3	0.6 U	1.2 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	1.2 U	1.2 U	0.6 U	0.6 U
1,4-Dichlorobenzene	ug/m3	0.17 J	1.2 U	1.2 U	1.2 U	6 U	0.6 U	1.2 U	1.2 U	1.2 U	0.6 U	0.6 U
1,4-Dioxane	ug/m3			7.2 U		36 U						
2-Butanone	ug/m3	8.3 J	5 J	4.6 J	67	35 J	6 J	180	17 J	21 J	12 U	22
2-Hexanone	ug/m3	0.38 J	0.82 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	0.82 U	0.82 U	0.41 U	0.41 U
4-Ethyltoluene	ug/m3	0.12 J	0.98 U	0.98 U	0.98 U	4.9 U	0.49 U	0.98 U	0.98 U	0.98 U	0.49 U	0.49 U
4-Methyl-2-pentanone	ug/m3	0.41 U	0.82 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	0.82 U	0.82 U	0.41 U	0.41 U
Acetone	ug/m3	7.4 J	8.2 J	19 U	29	81 J	25	51	10 J	23	21	17
Benzene	ug/m3	2.3	2.3	1.3	1.2	3.2 U	0.44	0.42 J	0.74	1.6	2.1	1.4
Benzyl chloride	ug/m3	0.52 U	1 U	1 U	1 U	5.2 U	0.52 U	1 U	1 U	1 U	0.52 U	0.52 U
Bromodichloromethane	ug/m3	0.67 U	1.3 U	3.9	1.3 U	6.7 U	0.67 U	1.3 U	1.3 U	1 J	0.67 U	0.67 U
Bromoform	ug/m3	1 U	2.1 U	2.1 U	2.1 U	10 U	1 U	2.1 U	2.1 U	2.1 U	1 U	1 U
Bromomethane	ug/m3	0.39 U	0.78 U	0.78 U	0.78 U	3.9 U	0.39 U	0.78 U	0.78 U	0.78 U	0.39 U	0.39 U
Carbon disulfide	ug/m3	16	6.2 U	6.2 U	6.2 U	31 U	3.1 U	1.9 J	17	47	30 J	47
Carbon tetrachloride	ug/m3	0.33 J	0.38 J	1.3 U	1.3 U	6.3 U	0.63 U	1.3 U	1.3 U	0.48 J	0.63 U	0.63 U
Chlorobenzene	ug/m3	0.46 U	0.92 U	0.92 U	0.92 U	4.6 U	0.46 U	0.92 U	0.92 U	0.92 U	0.46 U	0.46 U
Chloroethane	ug/m3	1.3	0.45 J	0.53 U	0.53 U	2.6 U	0.26 U	1.1 U	0.53 U	0.53 U	0.53 U	0.26 U
Chloroform	ug/m3	2.6	4.1	2.8	0.98 U	9.3	2.2	0.98 U	1.5	1.4	2.1	1.7
Chloromethane	ug/m3	0.41 U	0.83 U	0.83 U	0.83 U	4.1 U	0.41 U	0.83 U	0.83 U	0.83 U	0.41 U	0.41 U
cis-1,2-Dichloroethene	ug/m3	2.5	9.1	2.7	0.79 U	19	2.7	0.79 U	1.3	1.1	1.7	1.2
cis-1,3-Dichloropropene	ug/m3	0.45 U	0.91 U	0.91 U	0.91 U	4.5 U	0.45 U	0.91 U	0.91 U	0.91 U	0.45 U	0.45 U
Cyclohexane	ug/m3	0.34 U	0.69 U	0.69 U	0.69 U	3.4 U	0.34 U	0.69 U	0.69 U	0.69 U	0.34 U	0.34 U
Dibromochloromethane	ug/m3	0.85 U	1.7 U	1.7 U	1.7 U	8.5 U	0.85 U	1.7 U	1.7 U	1.7 U	2.2	0.85 U
Dichlorodifluoromethane	ug/m3	2.3	2.9	3.2	2	6.9	1.1	2.2	0.99 U	2.2	0.49 U	0.49 U
Ethanol	ug/m3	42	93	14 J	18	49 J	13	65	8.6 J	19	7.5 U	63
Ethyl acetate	ug/m3	0.36 U	0.72 U	0.72 U	0.72 U	3.6 U	0.36 U	0.72 U	0.72 U	0.63 J	0.36 U	0.36 U
Ethylbenzene	ug/m3	0.23 J	0.87 U	0.87 U	0.87 U	4.3 U	0.43 U	0.87 U	0.87 U	0.87 U	1.3	0.43 U
Hexachlorobutadiene	ug/m3	1.1 U	2.1 U	2.1 U	2.1 U	11 U	1.1 U	2.1 U	2.1 U	2.1 U	2.1 U	1.1 U
Hexane	ug/m3	14 U	28 U	28 U	28 U	140 U	14 U	28 U	28 U	28 U	14 U	14 U
Isopropyl alcohol	ug/m3	6.6 J	22	20 U	6.4 J	98 U	5.1 J	11 J	3.9 J	47	5.4 J	4.6 J
m,p-Xylene	ug/m3	0.5 J	1.7 U	1.7 U	1.7 U	8.7 U	0.87 U	1.7 U	1.7 U	1.7 U	2.6	0.87 U
Methyl methacrylate	ug/m3		0.82 U		0.82 U		0.41 U	0.82 U	0.82 U	0.82 U	0.41 U	0.41 U
Methylene chloride	ug/m3	3.5 U	6.9 U	6.9 U	1.4 J	35 U	1.3 J	6.9 U	6.9 U	6.9 U	1.5 J	3.5 U
Methyl-t-butyl ether	ug/m3	0.36 U	0.72 U	0.72 U	0.72 U	3.6 U	0.36 U	0.72 U	0.72 U	0.72 U	0.36 U	0.36 U
Naphthalene	ug/m3			1 U		7.1						
n-Heptane	ug/m3	0.15 J	0.82 U	0.82 U	0.82 U	4.1 U	0.41 U	0.82 U	0.82 U	0.82 U	0.41 U	0.41 U
o-Xylene	ug/m3	0.22 J	0.87 U	0.87 U	0.87 U	4.3 U	0.43 U	0.87 U	0.87 U	0.87 U	1.3	0.43 U
Propylene (Propene)	ug/m3	1.6 J	1.3 J	14 U	14 U	69 U	0.77 J	14 U	14 U	14 U	6.9 U	6.9 U
Styrene	ug/m3	0.46	0.85 U	0.85 U	0.85 U	4.3 U	0.43 U	0.85 U	0.85 U	0.78 J	0.43 U	0.43 U
Tetrachloroethene	ug/m3	89	390	170	2.7	1200	27	5	95	62	15	93
Tetrahydrofuran	ug/m3	720	3.5	5.8	38	31	2.5	130	880	1100	220	2500
Toluene	ug/m3	0.99	0.59 J	0.75 U	0.75 U	5.7	0.39	1.2	0.99	2.1	2.4	1.5
trans-1,2-Dichloroethene	ug/m3	4.9	22	7.7	0.79 U	46	9	0.79 U	2.6	1.7	2.2 J	1.4
trans-1,3-Dichloropropene	ug/m3	0.45 U	0.91 U	0.91 U	0.91 U	4.5 U	0.45 U	0.91 U	0.91 U	0.91 U	0.45 U	0.45 U
Trichloroethene	ug/m3	170	610	380	6.2	1500	140	15	170	120	42	150
Trichlorofluoromethane	ug/m3	340	1300	850	23	2500	890	23	370	120	190	140
Trichlorotrifluoroethane	ug/m3	0.74 J	1.3 J	6.1 U	6.1 U	31 U	0.9 J	6.1 U	6.1 U	6.1 U	3.1 U	3.1 U
Vinyl acetate	ug/m3	7 U	14 U	14 U	14 U	8.8 J	7 U	14 U	14 U	14 U	7 U	7 U
Vinyl chloride	ug/m3	1.4	0.51 U	0.51 U	0.51 U	2.6 U	0.26 U	0.51 U	0.51 U	0.51 U	0.26 U	0.26 U

Notes:  
 NA - not available  
 U - Not detected, value is the detection limit  
 B - Compounds detected in method blank as well as field sample  
 J - Indicates compound was detected at an estimated value.  
 D - Result from diluted analyses  
 ug/m3 - micrograms per cubic meter

Prepared By: AKN, 9/16/2019  
 Checked By: HWC, 9/16/2019



# **Appendix E1**

Summary of Historical Analytical Results –  
Indoor Air Samples for Large Retail Space

**Appendix E1.**  
**Summary of Analytical Results - Indoor Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:			Large Retail Space																						
Location:	AIR-13	AIR-4	AIR-5	AIR-6	AIR-7	AIR-8	IA-1																		
Sample ID:	AIR-13	AIR-4	AIR-5 DUP	AIR-6	AIR-7	AIR-8	IA-1	IA-1-020309	IA-1-021109	IA-1-021809	IA-1-022609	IA-1-030609	IA-1-033109	IA-1-041409	IA-1-042409	IA-1-091709	IA-1-092409	IA-1-100109	IA-1-100809	IA-1-120209	IA-1-010810	IA-1-012810	IA-1-020510		
Sample Date:	9/12/2007	9/12/2007	9/12/2007	9/12/2007	9/12/2007	9/12/2007	1/16/2009	2/3/2009	2/11/2009	2/18/2009	2/26/2009	3/6/2009	3/31/2009	4/14/2009	4/24/2009	9/17/2009	9/24/2009	10/1/2009	10/8/2009	12/2/2009	1/8/2010	1/28/2010	2/5/2010		
Analyte	Units	CT IACTIND 2003																							
1,1,1,2-Tetrachloroethane	ug/m3	1.1	0.137 U	0.137 U	0.137 U	0.137 U	0.327 U	0.137 U																	
1,1,1-Trichloroethane	ug/m3	500	1.54	2.35	2.11	1.68	1.81	2.11	10	0.56	1.1	0.99	0.35	1.8	1.5	1.4	2	0.27 U	0.27 U	0.27 U	0.27 U	0.24	0.27 U	0.27 U	0.76
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.137 U	0.137 U	0.137 U	0.137 U	0.327 U	0.137 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.24 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.24 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	ug/m3	12	0.109 U	0.109 U	0.109 U	0.109 U	0.26 U	0.109 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.19 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.19 U	0.27 U	0.27 U	0.27 U
1,1-Dichloroethane	ug/m3	430	0.182	0.321	0.233	0.224	0.218	0.235	0.71	0.2 U	0.2 U	0.2 U	0.27	0.32	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	ug/m3	20	0.104	0.098	0.091	0.08	0.189 U	0.086	0.38	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U
1,2,4-Trichlorobenzene	ug/m3	NA					0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.26 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.52 U	0.37 U	0.37 U	0.37 U
1,2,4-Trimethylbenzene	ug/m3	52	0.176	0.236	0.265	0.212	0.234 U	0.22	0.25 U	0.36	0.7	0.77	0.25 U	0.25 U	0.25 U	0.18 U	0.48	0.29	0.35	0.28	0.51	0.52	0.37	0.25 U	0.26
1,2-Dibromoethane (EDB)	ug/m3	0.038	0.154 U	0.154 U	0.154 U	0.154 U	0.366 U	0.154 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.27 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.27 U	0.38 U	0.38 U
1,2-Dichlorobenzene	ug/m3	410	0.12 U	0.12 U	0.12 U	0.12 U	0.287 U	0.12 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethane	ug/m3	0.31	0.0809 U	0.0809 U	0.0809 U	0.0809 U	0.193 U	0.0809 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	ug/m3	0.42	0.0924 U	0.0924 U	0.0924 U	0.0924 U	0.22 U	0.0924 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.17 U	0.23 U	0.23 U	0.23 U
1,2-Dichlorotetrafluoroethane	ug/m3	NA	0.349 U	0.349 U	0.349 U	0.349 U	0.834 U	0.349 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.25 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.25 U	0.35 U	0.35 U	0.35 U
1,3,5-Trimethylbenzene	ug/m3	52	0.0982 U	0.103	0.115	0.0982 U	0.234 U	0.0982 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.18	0.25 U	0.25 U	0.25 U
1,3-Butadiene	ug/m3	NA	0.0442 U	0.0442 U	0.0442 U	0.0442 U	0.106 U	0.0442 U	0.11 U	0.11 U	0.34	0.84	0.11 U	0.11 U	0.11 U	0.08 U	0.11 U	0.23 U	0.23 U	0.23 U	0.23 U	0.17	0.23 U	0.23 U	0.23 U
1,3-Dichlorobenzene	ug/m3	410	0.12 U	0.12 U	0.12 U	0.12 U	0.287 U	0.12 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	ug/m3	24	0.12 U	0.12 U	0.12 U	0.12 U	0.287 U	0.12 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U
1,4-Dioxane	ug/m3	NA																							
2-Butanone	ug/m3	500	2.12	1.47 U	2.42	2.47	3.52 U	2.86	20	3.1	5.8	3.4	2.6	2.2	1.3	1.2	4.4	2	2.6	2.7	1.3	2.7	1.6	0.3 U	2.4
2-Hexanone	ug/m3	NA							0.2 U	0.2 U	0.6	0.42	0.2 U	0.23	0.2 U	0.14 U	0.48	0.43	0.52	0.73	0.31	0.71	0.36	0.2 U	0.47
4-Ethyltoluene	ug/m3	NA							0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.18	0.25 U	0.25 U	0.25 U
4-Isopropyltoluene	ug/m3	370	2.74 U	2.74 U	2.74 U	2.74 U	6.55 U	2.74 U																	
4-Methyl-2-pentanone	ug/m3	200	2.05 U	2.05 U	2.05 U	2.05 U	4.88 U	2.05 U	0.2 U	0.2 U	0.43	0.3	0.2 U	0.2 U	0.2 U	0.14 U	0.52	0.21	0.35	0.32	0.2 U	0.34	0.2 U	0.2 U	0.2 U
Acetone	ug/m3	500	7.48	8.88	8.52	8.39	11.3 U	9.34	18	7.7	19	21	10	8.7	14	12	310	11	18	13	10	13	12	2	19
Acrylonitrile	ug/m3	NA	1.08 U	1.08 U	1.08 U	1.08 U	2.59 U	1.08 U																	
Benzene	ug/m3	3.3	0.46	0.663	0.731	0.621	0.746	0.707	1	0.68	1.9	3	0.69	0.87	0.71	0.56	0.78	0.49	0.47	0.39	0.48	1.1	1.2	0.16 U	0.98
Benzyl chloride	ug/m3	NA							0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.19 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.19 U	0.26 U	0.26 U	0.26 U
Bromodichloromethane	ug/m3	0.46	0.134 U	0.134 U	0.134 U	0.134 U	0.32 U	0.134 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.24 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.24 U	0.33 U	0.33 U	0.33 U
Bromoform	ug/m3	7.3	0.206 U	0.206 U	0.206 U	0.206 U	0.493 U	0.206 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.36 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.36 U	0.51 U	0.51 U	0.51 U
Bromomethane	ug/m3	NA	0.092	0.0776 U	0.086	0.0776 U	0.185 U	0.0776 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.14 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.14 U	0.19 U	0.19 U	0.19 U
Carbon disulfide	ug/m3	NA							0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.12 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.12 U	0.16 U	0.16 U	0.16 U
Carbon tetrachloride	ug/m3	0.54	0.412	0.414	0.522	0.402	0.408	0.505	0.35	0.41	0.52	0.55	0.46	0.59	0.53	0.31	0.43	0.48	0.38	0.42	0.43	0.48	0.43	0.48	0.4
Chlorobenzene	ug/m3	200	0.092 U	0.092 U	0.092 U	0.092 U	0.22 U	0.092 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.17 U	0.23 U	0.23 U	0.23 U
Chloroethane	ug/m3	500	0.0527 U	0.0527 U	0.0527 U	0.0527 U	0.126 U	0.0527 U	0.13 U	0.13 U	0.42	0.13 U	0.13 U	0.13 U	0.13 U	0.1 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Chloroform	ug/m3	0.5	0.335	0.163	0.225	0.173	0.233 U	0.204	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.17 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.17 U	0.24 U	0.24 U	0.47
Chloromethane	ug/m3	80	2.44 U	2.44 U	2.44 U	2.44 U	5.82 U	2.44	1.1	1	1.4	1.5	1	1	1.2	1.1	1.3	1.1	1.1	0.98	0.95	1.3	1.1	1.4	1.3
cis-1,2-Dichloroethene	ug/m3	100	2.35	1.21	1.38	1.01	0.787	1.26	2	0.2 U	1	1.1	0.73	1.3	0.5	0.6	1.3	0.2 U	0.2 U	0.83	0.44	0.57	0.2 U	0.2 U	0.2 U
cis-1,3-Dichloropropene	ug/m3	NA	0.0907 U	0.0907 U	0.0907 U	0.0907 U	0.216 U	0.0907 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.16 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.16 U	0.22 U	0.22 U	0.22 U
Cyclohexane	ug/m3	NA							0.17 U	0.17 U	0.49	0.61	0.17 U	0.17 U	0.17 U	0.34	0.18 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Dibromochloromethane	ug/m3	NA	0.096 U	0.096 U	0.096 U	0.096 U	0.229 U	0.096 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.31 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.31 U	0.43 U	0.43 U	0.43 U
Dichlorodifluoromethane	ug/m3	500	1.92	1.98	2.38	1.95	1.95	2.2	1.8	2.1	2.6	2.8	2.6	2.6	3.1	2	8.3	2.4	2	2.3	2.1	1.6	3.1	2.4	2.4
Ethanol	ug/m3	NA							5.7	8.3	14	20	9.8	7.5	18	5	39	6.2	7	6.5	8.8	10	8.4	7	29
Ethyl acetate	ug/m3	NA							0.37 U	0.37 U	0.18 U	0.18 U	0.37 U	0.18 U	0.18 U	0.26 U	0.37 U	0.32	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Ethylbenzene	ug/m3	290	0.18	0.278	0.288	0.223	0.207 U	0.238	0.26	0.28	0.66	0.85	0.23	0.22 U	0.22 U	0.16 U	0.94	0.23	0.23	0.22 U	0.28	0.46	0.4	0.22 U	0.32
Hexachlorobutadiene	ug/m3	NA							1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.75 U	1.1 U	0.53 U	0.53 U	0.53 U	0.53 U	0.75 U	0.53 U	0.53 U	0.53 U
Hexane	ug/m3	NA							0.92	0.74	1.2	1.6	1	0.51	0.53	0.65	1.7	0.99	1.3	0.41	0.77	0.78	0.74	0.18 U	0.82
Isopropyl alcohol	ug/m3	NA							3.4	3.1	5.3	5.8	3.8	2	9.1	0.18 U	240	5.2	5.2	0.25 U	2.7	1.8	2.4	0.25 U	9.4
Isopropylbenzene	ug/m3	120	2.46 U	2.46 U	2.46 U	2.46 U	5.86 U	2.46 U																	
m,p-Xylene	ug/m3	NA	0.616	0.998	1.08	0.859	0.688	0.894	0.76	0.87	2.1	2.8	0.8	0.43 U	0.63	0.31 U	2.5								

Appendix E1.  
Summary of Analytical Results - Indoor Air Sampling for Large Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island

Area:			Large Retail Space																						
Location:			IA-1																						
Sample ID:	IA-1-021210	IA-1-021910	IA-1-032610	IA-1-043010	IA-1-052810	IA-1-070110	IA-1-091610	IA-1-120710	IA-1-021711	IA-1-060211	IA-1-091511	IA-1-120811	IA-1-030812	IA-1-061412	IA-1-091312	IA-1-010313	IA-1-031513	IA-1-060713	IA-1-090613	IA-1-121313	IA-1-030714	IA-1-061314	IA-1-091214		
Sample Date:	2/12/2010	2/19/2010	3/26/2010	4/30/2010	5/28/2010	7/1/2010	9/16/2010	12/7/2010	2/17/2011	6/2/2011	9/15/2011	12/8/2011	3/8/2012	6/14/2012	9/13/2012	1/3/2013	3/15/2013	6/7/2013	9/6/2013	12/13/2013	3/7/2014	6/13/2014	9/12/2014		
Analyte	Units	CT IACTIND 2003																							
1,1,1,2-Tetrachloroethane	ug/m3	1.1											0.62 U		0.37 U	0.37 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.37 U	
1,1,1-Trichloroethane	ug/m3	500	0.3	0.88	0.27 U	1.2	0.33	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.12 J	0.082 U	0.16 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2	
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.21 U	0.1 U	0.21 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.1 U	
1,1,2-Trichloroethane	ug/m3	12	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.16 U	0.082 U	0.16 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.16 U	
1,1-Dichloroethane	ug/m3	430	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.12 U	0.061 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.061 U	
1,1-Dichloroethene	ug/m3	20	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.12 U	0.059 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.059 U	
1,2,4-Trichlorobenzene	ug/m3	NA	0.37 U	0.37 U	0.75 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.74 U	0.45 U	0.45 U	0.52 U	0.52 U	0.52 U	0.52 U	0.26 U	0.26 U	0.26 U	0.26 U	0.22 U	
1,2,4-Trimethylbenzene	ug/m3	52	0.25 U	0.25 U	0.25 U	0.25 U	0.4	0.43	0.56	0.25 U	0.55	0.25 U	0.25 J	0.1 J	0.15 U	0.16	0.55	0.17 U	0.17 U	0.21	0.32	0.17 U	0.52	0.25	0.14 J
1,2-Dibromomethane (EDB)	ug/m3	0.038	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.23 U	0.12 U	0.23 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.12 U	
1,2-Dichlorobenzene	ug/m3	410	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.18 U	
1,2-Dichloroethane	ug/m3	0.31	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.056 J	0.061 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.061 U	
1,2-Dichloropropane	ug/m3	0.42	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.069 U	0.14 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.069 U	
1,2-Dichlorotetrafluoroethane	ug/m3	NA	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U												
1,3,5-Trimethylbenzene	ug/m3	52	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 J	0.044 J	0.15 U	0.059 J	0.32	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.068 J	
1,3-Butadiene	ug/m3	NA	0.23 U	0.23 U	0.11 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.066 U	0.066 U	0.066 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.55	0.078 U	0.066 U
1,3-Dichlorobenzene	ug/m3	410	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.18 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.18 U	
1,4-Dichlorobenzene	ug/m3	24	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.18 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.18 U	
1,4-Dioxane	ug/m3	NA												0.18 U											
2-Butanone	ug/m3	500	1.1	1.2	1.3	0.78	2.6	3.3	0.85	0.68	1.7 B	2.9 U	5.9 J	1.8 J	1.2 J	1.4 J	3 J	4.1 J	0.64 J	2.9 J	2 J	0.92 J	1.6 J	3.1 J	2.8 J
2-Hexanone	ug/m3	NA	0.2 U	0.27	0.27	0.2 U	0.67	0.75	0.2 U	0.2 U	0.2 U	4.1 U	0.62	0.22	0.26	0.12 U	0.28	0.14 U	0.14 U	0.38	0.27	0.14 U	0.3	0.45	0.25
4-Ethyltoluene	ug/m3	NA	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.15 U	0.15 U	0.071 J	0.19	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.15 U	
4-Isopropyltoluene	ug/m3	370																							
4-Methyl-2-pentanone	ug/m3	200	0.22	0.2 U	0.2 U	0.2 U	0.28	0.35	0.35	0.2 U	0.2 U	0.2 U	0.23	0.39	0.13	0.093 J	0.26	0.14 U	0.14 U	0.24	0.52	0.14 U	0.23	0.49	0.33
Acetone	ug/m3	500	7.3	8.5	7	6.5	18	18	11	12 B	15 B	11 B	18	8	6	12	16 B	3.3	5	21	35	19	13	23	13
Acrylonitrile	ug/m3	NA																							
Benzene	ug/m3	3.3	0.64	0.53	0.59	0.64	0.5	0.46	0.8	0.49	1.5	0.25	0.32	0.47	0.34	0.19	0.67	0.11	0.72	0.28	0.75	0.54	2.3	0.46	0.39
Benzyl chloride	ug/m3	NA	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.16 U	0.16 U	0.16 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.078 U
Bromodichloromethane	ug/m3	0.46	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U	0.34 U	0.34 U	0.2 U	0.1 U	0.2 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.1 U	
Bromoform	ug/m3	7.3	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.52 U	0.52 U	0.52 U	0.52 U	0.31 U	0.31 U	0.31 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.31 U	
Bromomethane	ug/m3	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.12 U	0.12 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.12	
Carbon disulfide	ug/m3	NA	0.16 U	0.33	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	1.6 U	0.93 U	0.93 U	0.93 U	1.1 U	1.1 U	1.1 U	1.1 U	0.23 J	0.2 J	1.1 U	0.21 J	0.11 J
Carbon tetrachloride	ug/m3	0.54	0.31 U	0.45	0.44	0.48	0.55	0.52	0.5	0.46	0.47	0.53	0.57	0.49	0.46	0.46	0.39	0.22	0.44	0.53	0.53	0.54	0.41	0.42	0.4
Chlorobenzene	ug/m3	200	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.14 U	0.14 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.069 U	
Chloroethane	ug/m3	500	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.079 U	0.079 U	0.079 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.079 U	
Chloroform	ug/m3	0.5	0.43	0.24 U	0.24 U	0.25	0.24 U	0.24 U	3.8	0.24 U	0.24 U	0.24 U	0.24 J	0.085 J	0.073 U	0.097 J	0.19	0.17 U	0.17 U	0.17 U	0.2	0.17 U	0.13 J	0.25	0.27
Chloromethane	ug/m3	80	1.3	1.2	1.3	0.79	1.2	1.2	1.1	0.97	1	0.92	1.3	0.93	1.3	1.6	1.3	0.072	1.1	1.4	1.2	1	1.3	1.3	0.76
cis-1,2-Dichloroethene	ug/m3	100	0.2 U	0.56	0.2 U	1.3	0.2 U	0.5	0.2 U	1.7	0.2 U	0.2 U	0.2 U	0.15	0.059 U	0.12 U	0.045 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.059 U	
cis-1,3-Dichloropropene	ug/m3	NA	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.068 U	0.14 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.068 U	
Cyclohexane	ug/m3	NA	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.22	0.17 U	0.17 U	0.17 U	0.17 U	0.1 U	0.1 U	0.1 U	0.27	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.1 U	
Dibromochloromethane	ug/m3	NA	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.26 U	0.13 U	0.26 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.13 U	
Dichlorodifluoromethane	ug/m3	500	2.6	3	1.6	2.2	2.3	2.7	1.7	2	3.1	1.5	2	2.6	2.1	2.7	2.7	0.17	1.7	3.2	1.9	2.4	1.7	2.1	2.2
Ethanol	ug/m3	NA	19	43	4.6	4.4	6	6.5	9	2.7	9	2.8	6.4	2.2 J	3.2	4.4	8.5	2.6	2 J	26	23	12	22	80	34
Ethyl acetate	ug/m3	NA	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.11 U	0.92	0.26	0.57	0.13	0.21	0.33	0.13 U	0.25	0.34	0.13 U	0.46
Ethylbenzene	ug/m3	290	0.22 U	0.22 U	0.22 U	0.23	0.29	0.27	0.51	0.22 U	0.54	0.22 U	0.22 J	0.14	0.1 J	0.11 J	0.47	0.15	0.15 U	0.19	0.35	0.15 U	0.53	0.23	0.17
Hexachlorobutadiene	ug/m3	NA	0.53 U	0.53 U	1.1 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.32 U	0.32 U	0.32 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.32 U	
Hexane	ug/m3	NA	1.3	0.45	0.2	1.1	0.8	0.46	0.61	0.35 U	1.9	0.43	7 J	0.39 J	0.72 J	0.55 J	1.3 J	4.9 J	0.64 J	0.79 J	19	4.9 U	1.2 J	0.43 J	0.55 J
Isopropyl alcohol	ug/m3	NA	0.25 U	1.6	0.65	3.4	0.12 U	0.74	1.4	0.25 U	1.7	1.2 U	4.9 J	2.9 U	0.64 J	2.9 U	1.9 J	3.4 U	0.36 J	3.4 U	3.4 U	2.1 J	1.9 J	5.5	4
Isopropylbenzene	ug/m3	120																							

**Appendix E1.  
Summary of Analytical Results - Indoor Air Sampling for Large Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Area:			Large Retail Space																								
Location:			IA-1													IA-2											
Sample ID:	IA-1-121914	IA-01-032715	IA-1-061115	IA-1-091615	IA-1-121815	IA-1-021816	IA-1-080516	IA-1-021017	IA-1-090717	IA-1-022818	IA-1-091218	IA-1-020819	IA-1-090619	IA-2	IA-2-020309	IA-2-021109	IA-2-021809	IA-2-022609	IA-2-041409	IA-2-042409	IA-2-091709	IA-2-092409	IA-2-100109				
Sample Date:	12/19/2014	3/27/2015	6/11/2015	9/16/2015	12/18/2015	2/18/2016	8/5/2016	2/10/2017	9/7/2017	2/28/2018	9/12/2018	2/8/2019	9/6/2019	1/16/2009	2/3/2009	2/11/2009	2/18/2009	2/26/2009	4/14/2009	4/24/2009	9/17/2009	9/24/2009	10/1/2009				
Analyte	Units	CT	IACTIND	2003																							
1,1,1,2-Tetrachloroethane	ug/m3	1.1		0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U			
1,1,1-Trichloroethane	ug/m3	500		0.16 J	0.05 J	0.19 U	0.28	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U			
1,1,2,2-Tetrachloroethane	ug/m3	0.14		0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U			
1,1,2-Trichloroethane	ug/m3	12		0.19 U	0.19 U	0.19 U	0.065 J	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U			
1,1-Dichloroethane	ug/m3	430		0.14 U	0.14 U	0.14 U	0.082 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U			
1,1-Dichloroethene	ug/m3	20		0.14 U	0.14 U	0.14 U	0.078 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U			
1,2,4-Trichlorobenzene	ug/m3	NA		0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U			
1,2,4-Trimethylbenzene	ug/m3	52		0.17 U	0.12 J	0.14 J	0.14 J	0.32	0.74	0.24	0.17 U	0.22	0.17 U	0.31	0.57	0.29	0.25 U	0.37	0.7	0.65	0.3	0.18 U	0.25 U	0.29			
1,2-Dibromomethane (EDB)	ug/m3	0.038		0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U			
1,2-Dichlorobenzene	ug/m3	410		0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U			
1,2-Dichloroethane	ug/m3	0.31		0.14 U	0.14 U	0.06 J	0.099 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U			
1,2-Dichloropropane	ug/m3	0.42		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U			
1,2-Dichlorotetrafluoroethane	ug/m3	NA					0.25 U			0.25 U						0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U			
1,3,5-Trimethylbenzene	ug/m3	52		0.17 U	0.041 J	0.069 J	0.059 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U			
1,3-Butadiene	ug/m3	NA		0.078 U	0.048 J	0.078 U	0.13	0.16	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.11 U	0.11 U	0.3	0.66	0.11 U	0.08 U	0.11 U	0.23 U	0.23 U			
1,3-Dichlorobenzene	ug/m3	410		0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U			
1,4-Dichlorobenzene	ug/m3	24		0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U			
1,4-Dioxane	ug/m3	NA					1.3 U			1.3 U																	
2-Butanone	ug/m3	500		0.84 J	1.5 J	1.1 J	1.2 J	1.4 J	0.5 J	1.6 J	0.72 J	2.1 J	1.4 J	2 J	0.88 J	0.73 J	21	4.1	4.6	3	2.9	0.95	1.6	1.1			
2-Hexanone	ug/m3	NA		0.14 U	0.3	0.14 U	0.14 U	0.16	0.14 U	0.14 U	0.14 U	0.32	0.44	0.14 U	0.14 U	0.14 U	0.2 U	0.2 U	0.35	0.26	0.2 U	0.14 U	0.2 U	0.25			
4-Ethyltoluene	ug/m3	NA		0.17 U	0.045 J	0.17 U	0.055 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U			
4-Isopropyltoluene	ug/m3	370																									
4-Methyl-2-pentanone	ug/m3	200		0.14 U	0.14 J	0.08 J	0.14 U	0.21	0.14 U	0.33	0.14 U	0.32	0.083 J	0.14 U	0.45	0.14 U	0.2 U	0.2 U	0.35	0.2 U	0.2 U	0.14 U	0.2 U	0.39			
Acetone	ug/m3	500		9.3	12	7.7	17	12	9.8	15	4.9	14	9.8	12	4.5	6.7	17	9.6	14	18	9.7	13	39	6.2			
Acrylonitrile	ug/m3	NA																									
Benzene	ug/m3	3.3		0.38	0.53	0.23	0.46	0.98	1	0.27	0.44	0.5	0.48	0.47	0.91	0.41	1	0.67	1.8	3	0.77	0.58	0.44	0.41			
Benzyl chloride	ug/m3	NA		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.19 U	0.26 U	0.26 U			
Bromodichloromethane	ug/m3	0.46		0.24 U	0.24 U	0.24 U	0.12 J	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.24 U	0.33 U	0.33 U			
Bromoform	ug/m3	7.3		0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.36 U	0.51 U	0.51 U			
Bromomethane	ug/m3	NA		0.14 U	0.14 U	0.14 U	0.095 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.13 J	0.14 U	0.14 U	0.14 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.14 U	0.19 U	0.19 U			
Carbon disulfide	ug/m3	NA		1.1 U	1.1 U	0.22 J	0.97 J	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.12 U	0.16 U	0.16 U			
Carbon tetrachloride	ug/m3	0.54		0.29	0.32	0.34	0.49	0.5	0.42	0.4	0.39	0.4	0.39	0.5	0.87	0.36	0.33	0.41	0.55	0.57	0.48	0.41	0.41	0.44			
Chlorobenzene	ug/m3	200		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.17 U	0.23 U	0.23 U			
Chloroethane	ug/m3	500		0.093 U	0.093 U	0.093 U	0.096	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.19 U	0.093 U	0.093 U	0.19 U	0.093 U	0.13 U	0.13 U	0.42	0.13 U	0.13 U	0.13 U	0.13 U			
Chloroform	ug/m3	0.5		0.13 J	0.075 J	0.14 J	0.3	0.67	0.17 U	0.42	0.17 U	0.16 J	0.14 J	0.16 J	0.5	0.18	0.24 U	0.24 U	0.24 U	0.24 U	0.25	0.17 U	0.24 U	0.24 U			
Chloromethane	ug/m3	80		0.8	1	1.2	1.2	1.5	0.97	1.2	1.2	1.2	1.1	1.1	1.3	0.14 U	1.1	1.3	1.3	1	1.1	1.2	0.91	1.1			
cis-1,2-Dichloroethene	ug/m3	100		0.14 U	0.14 U	0.14 U	0.15	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.35	0.14 U	2.1	0.24	1.1	1.1	0.95	0.59	1.6			
cis-1,3-Dichloropropene	ug/m3	NA		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.16 U	0.22 U	0.22 U			
Cyclohexane	ug/m3	NA		0.12 U	0.12 U	0.12 U	0.12 U	0.84	3.3	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.17 U	0.17 U	0.44	0.61	0.17 U	0.12 U	0.22				
Dibromochloromethane	ug/m3	NA		0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.68	0.3 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U			
Dichlorodifluoromethane	ug/m3	500		1.7	1.2	2.3	1.7	2.2	1.4	0.62	1.2	1.5	2.2	1.5	2.4	0.17 U	1.8	2.2	2.6	2.9	2.7	2.1	2.9	2			
Ethanol	ug/m3	NA		29	9.1	11	21	22	51	20	3	15	94	6.8	17	16	5.5	8.8	12	17	7.9	4.9	7.5	4.8			
Ethyl acetate	ug/m3	NA		0.2	0.57	0.13 U	0.65	0.13 U	0.39	0.13 U	0.13 U	0.38	0.1 J	0.25 U	0.13 U	0.13 U	0.37 U	0.37 U	0.18 U	0.18 U	0.37 U	0.26 U	0.37 U	0.18 U			
Ethylbenzene	ug/m3	290		0.064 J	0.13 J	0.1 J	0.18	0.57	0.22	0.2	0.15 U	0.24	0.15 U	0.29	0.5	0.28	0.26	0.28	0.65	0.79	0.3	0.18	0.22 U	0.22 U			
Hexachlorobutadiene	ug/m3	NA		0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.75 U	0.37 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.75 U	1.1 U			
Hexane	ug/m3	NA		0.32 J	5.5	0.35 J	0.68 J	2.2 J	4.4 J	0.51 J	0.29 J	0.3 J	0.3 J	0.3 J	0.62 J	4.9 U	4.9 U	0.88	0.57	1.3	1.6	0.69	0.72	0.74			
Isopropyl alcohol	ug/m3	NA		1.5 J	2 J	2 J	2.3 J	3.4 U	3.4 U	5.1	0.91 J	2.4 J	2 J	2 J	5.3	1.6 J	1.4 J	3.7	3.1	4.5	4.5	4.7	5.6	28			
Isopropylbenzene	ug/m3	120																									
m,p-Xylene	ug/m3	NA		0.24 J	0.36	0.34	0.58	3	0.58	0.78	0.15 J	0.92	0.24 J	1	1.1	0.99	0.76	0.88	2	2.6	0.93	0.61	0.63	0.71			
Methyl methacrylate	ug/m3	NA		0.14 U	0.14 U		0.14 U			0.14 U	0.14 U	0.23	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U									
Methylene chloride	ug/m3	17		0.26 J	6	0.51 J	0.74 J	1.1 J	0.3 J	1 J	0.41 J	0.29 J	0.38 J	0.33 J	0.73 J	0.35 J	2	30									

**Appendix E1.  
Summary of Analytical Results - Indoor Air Sampling for Large Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Area:			Large Retail Space																							
Location:			IA-2																							
Sample ID:	IA-2-100809	IA-2-012810	IA-2-020510	IA-2-021210	IA-2-021910	IA-2-032610	IA-2-043010	IA-2-052810	IA-2-070110	IA-2-091610	IA-2-120710	IA-2-021711	IA-2-060211	IA-2-091511	IA-2-120811	IA-2-030812	IA-2-061412	IA-2-091312	IA-2-010313	IA-2-031513	IA-2-060713	IA-2-090613	IA-2-121313			
Sample Date:	10/8/2009	1/28/2010	2/5/2010	2/12/2010	2/19/2010	3/26/2010	4/30/2010	5/28/2010	7/1/2010	9/16/2010	12/7/2010	2/17/2011	6/2/2011	9/15/2011	12/8/2011	3/8/2012	6/14/2012	9/13/2012	1/3/2013	3/15/2013	6/7/2013	9/6/2013	12/13/2013			
Analyte	Units	CT IACTIND 2003																								
1,1,1,2-Tetrachloroethane	ug/m3	1.1																								
1,1,1-Trichloroethane	ug/m3	500	0.27 U	0.44	0.73	0.27 U	0.27 U	0.27 U	1	0.27 U	0.28	0.27 U	0.27 U	0.27 U	0.27 U	0.13 J	0.082 U	0.16 U	0.08 J	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U		
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.21 U	0.1 U	0.21 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U		
1,1,2-Trichloroethane	ug/m3	12	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.16 U	0.082 U	0.16 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U		
1,1-Dichloroethane	ug/m3	430	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.12 U	0.061 U	0.12 U	0.043 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U		
1,1-Dichloroethene	ug/m3	20	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.12 U	0.059 U	0.12 U	0.045 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U		
1,2,4-Trichlorobenzene	ug/m3	NA	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.45 U	0.45 U	0.52 U	0.52 U	0.52 U	0.26 U	0.26 U	0.26 U	0.26 U		
1,2,4-Trimethylbenzene	ug/m3	52	0.52	0.55	0.25 U	0.25 U	0.25 U	0.25 U	0.31	0.35	0.48	0.52	0.25 U	0.52	0.25 U	0.25 J	0.088 J	0.15 U	0.19	0.48	0.17	0.13 J	0.43	0.2	0.17 U	
1,2-Dibromomethane (EDB)	ug/m3	0.038	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.23 U	0.12 U	0.23 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U		
1,2-Dichlorobenzene	ug/m3	410	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.18 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U		
1,2-Dichloroethane	ug/m3	0.31	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.063 J	0.061 U	0.051 J	0.08 J	0.14	0.14 U	0.14 U	0.14 U	0.14 U		
1,2-Dichloropropane	ug/m3	0.42	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.069 U	0.14 U	0.16 U	0.16 U	0.11 J	0.16 U	0.16 U	0.16 U		
1,2-Dichlorotetrafluoroethane	ug/m3	NA	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U											
1,3,5-Trimethylbenzene	ug/m3	52	0.25 U	0.59	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 J	0.15 U	0.15 U	0.08 J	0.26	0.17	0.17 U	0.17 U	0.17 U		
1,3-Butadiene	ug/m3	NA	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.11 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.066 U	0.066 U	0.066 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U		
1,3-Dichlorobenzene	ug/m3	410	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.18 U	0.08 J	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U		
1,4-Dichlorobenzene	ug/m3	24	0.3 U	0.34	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.18 U	0.093 J	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U		
1,4-Dioxane	ug/m3	NA														0.18 U										
2-Butanone	ug/m3	500	1	2.1	0.7	0.44	0.3 U	0.96	1.3	3.1	3.4	0.96	0.36	1.9 B	2.9 U	5.9 J	0.93 J	0.84 J	1.4 J	2.8 J	4.1	2.4 J	4.2	2.1 J	1.2 J	
2-Hexanone	ug/m3	NA	0.26	0.51	0.2 U	0.2 U	0.2 U	0.26	0.84	0.68	0.2 U	0.2 U	0.24	4.1 U	0.5	0.12 U	0.16	0.15	0.32	0.14	0.22	0.51	0.41	0.14 U		
4-Ethyltoluene	ug/m3	NA	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.15 U	0.15 U	0.086 J	0.19	0.17	0.17 U	0.17 U	0.17 U	0.17 U		
4-Isopropyltoluene	ug/m3	370																								
4-Methyl-2-pentanone	ug/m3	200	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.28	0.49	0.34	0.2 U	0.2 U	0.2 U	0.24	0.1 J	0.11 J	0.12 J	0.19	0.14	0.14 U	0.54	0.46	0.18		
Acetone	ug/m3	500	8.8	17	7.8	3.1	0.48 U	6.3	8.2	18	20	11	9.8 B	15 B	8.9 B	18	6.2	5.4	14	17 B	3.3	46	32	22	32	
Acrylonitrile	ug/m3	NA																								
Benzene	ug/m3	3.3	0.54	1.2	0.86	0.67	0.16 U	0.58	0.63	0.47	0.48	0.72	0.48	1.5	0.26	0.3	0.39	0.36	0.24	0.62	0.11	0.91	0.56	0.32	0.66	
Benzyl chloride	ug/m3	NA	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.16 U	0.16 U	0.16 U	0.18 U	0.18 U	0.18 U	0.18 U	
Bromodichloromethane	ug/m3	0.46	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U	0.34 U	0.34 U	0.2 U	0.1 U	0.2 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	
Bromoform	ug/m3	7.3	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.52 U	0.52 U	0.52 U	0.52 U	0.31 U	0.31 U	0.31 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U		
Bromomethane	ug/m3	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.22	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.12 U	0.12 U	0.12 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	
Carbon disulfide	ug/m3	NA	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	1.6 U	0.93 U	0.93 U	0.93 U	1.1 U	1.1	0.47 J	0.39 J	0.33 J	0.17 J	
Carbon tetrachloride	ug/m3	0.54	0.42	0.31 U	0.4	0.31 U	0.31 U	0.43	0.47	0.5	0.52	0.5	0.48	0.31 U	0.62	0.52	0.49	0.48	0.45	0.43	0.22	0.45	0.58	0.45	0.46	
Chlorobenzene	ug/m3	200	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.14 U	0.14 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	
Chloroethane	ug/m3	500	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.079 U	0.079 U	0.079 U	0.093 U	0.093 U	0.14	0.093 U	0.093 U	0.093 U	0.093 U	
Chloroform	ug/m3	0.5	0.24 U	0.24 U	0.47	0.4	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 J	0.085 J	0.073 U	0.14 J	0.25	0.17 U	0.15 J	0.17 U	0.17 U	0.37	
Chloromethane	ug/m3	80	0.98	1.2	1.3	1.3	1.4	1.3	0.8	1.2	1.2	1.1	0.96	0.97	0.95	1.2	0.93	1	1.4	1.3	0.072	2.7	1.7	0.98	1.1	
cis-1,2-Dichloroethene	ug/m3	100	0.48	0.58	0.2 U	0.2 U	0.2 U	0.2 U	1	0.2 U	0.61	0.2 U	1.7	0.2 U	0.2 U	0.2 U	0.17	0.059 U	0.12 U	0.064 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	
cis-1,3-Dichloropropene	ug/m3	NA	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.068 U	0.14 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	
Cyclohexane	ug/m3	NA	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.2	0.17 U	0.17 U	0.17 U	0.17 U	0.1 U	0.1 U	0.1 U	0.26	0.12	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	
Dibromochloromethane	ug/m3	NA	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.26 U	0.13 U	0.26 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	
Dichlorodifluoromethane	ug/m3	500	2.1	2.2	2.5	2.6	3	1.6	2	2.4	2.6	1.7	1.9	3.2	1.6	2	2.7	2.1	2.7	2.8	0.17	1.7	3.3	1.8	2.6	
Ethanol	ug/m3	NA	6.2	14	35	17	20	4.4	4.9	5	7.6	9	2.7	10	2.5	8.5	2.1 J	2.1 J	10	9.8	2.6	380	66	46	89	
Ethyl acetate	ug/m3	NA	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.22	0.24	3.5	0.71	0.13	2	0.39	0.28	13		
Ethylbenzene	ug/m3	290	0.31	0.42	0.34	0.22 U	0.22 U	0.22 U	0.23	0.24	0.29	0.46	0.22 U	0.5	0.22 U	0.22 J	0.13 J	0.13 U	0.13 U	0.41	0.15	0.25	0.39	0.17	0.15 U	
Hexachlorobutadiene	ug/m3	NA	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	1.1 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.32 U	0.32 U	0.32 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	
Hexane	ug/m3	NA	1	0.61	0.64	1.4	0.18 U	0.27	1.6	0.51	0.49	0.53	0.35 U	1.6	0.31	7 J	0.32 J	0.34 J	2.6 J	2.4 J	4.9	2.3 J	1.6 J	0.65 J	4.9 J	
Isopropyl alcohol	ug/m3	NA	0.25 U	0.25 U	3.6	0.25 U	0.25 U	0.63	3.2	0.12 U	1.2	0.25 U	0.25 U	2	1.2 U	4.9 J	2.9 U	0.76 J	2.9 U	2.8 J	3.4 U	3.6	3.4 U	1.7 J	9.7	
Isopropylbenzene	ug/m3	120																								
m,p-Xylene	ug/m3	NA	1.1	1.3	1.1	0.43 U	0.43 U	0.47	0.75	0.96	1.3	1.5	0.43 U	1.5	0.36 J	0.57	0									



**Appendix E1.**  
**Summary of Analytical Results - Indoor Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:			Large Retail Space																												
Location:			IA-3																												
Sample ID:	IA-3-042409	IA-3-091709	IA-3-092409	IA-3-100109	IA-3-100809	IA-3-012810	IA-3-020510	IA-3-021210	IA-3-021910	IA-3-032610	IA-3-043010	IA-3-052810	IA-3-070110	IA-3-091610	IA-3-120710	IA-3-021711	IA-3-060211	IA-3-091511	IA-3-120811	IA-3-030812	IA-3-061412	IA-3-091312	IA-3-010313								
Sample Date:	4/24/2009	9/17/2009	9/24/2009	10/1/2009	10/8/2009	1/28/2010	2/5/2010	2/12/2010	2/19/2010	3/26/2010	4/30/2010	5/28/2010	7/1/2010	9/16/2010	12/7/2010	2/17/2011	6/2/2011	9/15/2011	12/8/2011	3/8/2012	6/14/2012	9/13/2012	1/3/2013								
Analyte	Units	CT IACTIND 2003																													
1,1,1,2-Tetrachloroethane	ug/m3	1.1																						0.62 U		0.37 U	0.37 U	0.44 U	0.44 U		
1,1,1-Trichloroethane	ug/m3	500	2.2	0.27 U	0.27 U	0.27 U	0.27 U	0.45	0.71	0.29	0.86	0.27 U	1.2	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.11 J	0.082 U	0.16 U	0.19 U	0.19 U	
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.21 U	0.1 U	0.21 U	0.24 U	0.24 U		
1,1,2-Trichloroethane	ug/m3	12	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.16 U	0.082 U	0.16 U	0.19 U	0.19 U		
1,1-Dichloroethane	ug/m3	430	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.12 U	0.061 U	0.12 U	0.14 U	0.14 U	
1,1-Dichloroethene	ug/m3	20	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.12 U	0.059 U	0.12 U	0.14 U	0.14 U	
1,2,4-Trichlorobenzene	ug/m3	NA	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.75 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.74 U	0.45 U	0.45 U	0.45 U	0.52 U	0.52 U	
1,2,4-Trimethylbenzene	ug/m3	52	0.25 U	0.29	0.4	0.25 U	0.39	0.44	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.26	0.34	0.46	0.6	0.25 U	0.49	0.25 U	0.25 J	0.071 J	0.1 J	0.19	0.47	0.17 U					
1,2-Dibromomethane (EDB)	ug/m3	0.038	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.23 U	0.12 U	0.23 U	0.27 U	0.27 U	
1,2-Dichlorobenzene	ug/m3	410	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.18 U	0.21 U	0.21 U	
1,2-Dichloroethane	ug/m3	0.31	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.056 J	0.061 U	0.051 J	0.14 U	0.14 U	
1,2-Dichloropropane	ug/m3	0.42	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.069 U	0.14 U	0.16 U	0.16 U	
1,2-Dichlorotetrafluoroethane	ug/m3	NA	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U						
1,3,5-Trimethylbenzene	ug/m3	52	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.42	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.15 U	0.15 U	0.074 J	0.22	0.17 U
1,3-Butadiene	ug/m3	NA	0.11 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.11 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.066 U	0.066 U	0.066 U	0.078 U	0.078 U	
1,3-Dichlorobenzene	ug/m3	410	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.18 U	0.21 U	0.21 U	
1,4-Dichlorobenzene	ug/m3	24	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	0.18 U	0.18 U	0.059 J	0.21 U	
1,4-Dioxane	ug/m3	NA																								0.18 U					
2-Butanone	ug/m3	500	2.5	2	2.6	0.7	1.5	1.9	2	1.2	1.6	0.51	1	2.2	3.3	0.95	0.39	0.76 B	2.9 U	5.9 J	1.2 J	0.45 J	2.4 J	2.7 J	4.1 J						
2-Hexanone	ug/m3	NA	0.38	0.51	0.58	0.2 U	0.37	0.52	0.39	0.22	0.39	0.2 U	0.29	0.52	0.67	0.2 U	0.2 U	0.2 U	4.1 U	0.24	0.093 J	0.12 U	0.33	0.22	0.14 U						
4-Ethyltoluene	ug/m3	NA	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.15 U	0.15 U	0.074 J	0.15 J	0.17 U	
4-Isopropyltoluene	ug/m3	370																													
4-Methyl-2-pentanone	ug/m3	200	0.22	0.2 U	0.42	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.38	0.34	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.084 J	0.12 U	0.19	0.21	0.14 U	
Acetone	ug/m3	500	50	11	19	6.7	11	14	21	6.7	7.3	3.8	7.7	15	21	11	9.7 B	9.7 B	11 B	13	7.2	3.9	13	12 B	3.3						
Acrylonitrile	ug/m3	NA																													
Benzene	ug/m3	3.3	0.46	0.41	0.5	0.39	0.46	1.3	0.86	0.67	0.53	0.6	0.67	0.47	0.51	0.72	0.47	1.4	0.29	0.3	0.39	0.35	0.23	0.66	0.11						
Benzyl chloride	ug/m3	NA	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.16 U	0.16 U	0.16 U	0.18 U	0.18 U	
Bromodichloromethane	ug/m3	0.46	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.2 U	0.1 U	0.2 U	0.24 U	0.24 U		
Bromoform	ug/m3	7.3	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.31 U	0.31 U	0.31 U	0.36 U	0.36 U		
Bromomethane	ug/m3	NA	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.12 U	0.12 U	0.12 U	0.14 U	0.14 U	
Carbon disulfide	ug/m3	NA	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	1.6 U	0.93 U	0.93 U	0.93 U	1.1 U	1.1 U	
Carbon tetrachloride	ug/m3	0.54	0.42	0.4	0.43	0.4	0.42	0.31 U	0.42	0.31 U	0.43	0.43	0.49	0.54	0.57	0.41	0.45	0.6	0.64	0.51	0.5	0.49	0.43	0.38	0.22						
Chlorobenzene	ug/m3	200	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.14 U	0.14 U	0.16 U	0.16 U		
Chloroethane	ug/m3	500	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.079 U	0.079 U	0.079 U	0.093 U	0.093 U	
Chloroform	ug/m3	0.5	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.53	0.48	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.079 J	0.073 U	0.15	0.19	0.17 U	
Chloromethane	ug/m3	80	1.2	0.91	1.1	0.97	1	1.2	2.9	1.3	1.2	1.1	0.85	1.2	1.2	1.1	0.98	0.97	1.2	1.4	0.84	1.1	1.4	1.3	0.072						
cis-1,2-Dichloroethene	ug/m3	100	1.5	0.2 U	0.2 U	0.94	0.49	0.59	0.2 U	0.2 U	0.59	0.2 U	1.3	0.2 U	0.51	0.2 U	1.7	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.059 U	0.12 U	0.14 U	0.14 U	0.14 U	
cis-1,3-Dichloropropene	ug/m3	NA	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	0.068 U	0.14 U	0.16 U	0.16 U		
Cyclohexane	ug/m3	NA	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.1 U	0.1 U	0.1 U	0.27	0.12 U		
Dibromochloromethane	ug/m3	NA	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.26 U	0.13 U	0.26 U	0.3 U	0.3 U		
Dichlorodifluoromethane	ug/m3	500	2.9	2.1	2.1	2.2	2.2	2.3	2.5	2.5	3	1.6	2.1	2.5	2.7	1.5	2.1	3.1	2.1	1.8	2.6	2.1	2.8	2.8	0.17					</	

**Appendix E1.**  
**Summary of Analytical Results - Indoor Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:			Large Retail Space																						
Location:			IA-3																	IA-4					
Sample ID:	IA-3-031513	IA-3-060713	IA-3-090613	IA-3-121313	IA-3-030714	IA-3-061314	IA-3-091214	IA-3-121914	IA-03-032715	IA-3-061115	IA-3-091615	IA-3-121815	IA-3-021816	IA-3-080516	IA-3-021017	IA-3-090717	IA-3-022818	IA-3-091218	IA-3-020819	IA-3-090619	IA-4	IA-4-020309	IA-4-021109		
Sample Date:	3/15/2013	6/7/2013	9/6/2013	12/13/2013	3/7/2014	6/13/2014	9/12/2014	12/19/2014	3/27/2015	6/11/2015	9/16/2015	12/18/2015	2/18/2016	8/5/2016	2/10/2017	9/7/2017	2/28/2018	9/12/2018	2/8/2019	9/6/2019	1/16/2009	2/3/2009	2/11/2009		
Analyte	Units	CT IACTIND 2003																							
1,1,1,2-Tetrachloroethane	ug/m3	1.1	0.44 U	0.44 U	0.46	0.44 U	0.44 U	0.44 U	0.25 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U		
1,1,1-Trichloroethane	ug/m3	500	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19	0.16 J	0.05 J	0.19 U	0.092 J	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.49	0.19 U	10	0.62	1.1
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.069 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.34 U	0.34 U	0.34 U	
1,1,2-Trichloroethane	ug/m3	12	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.11 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.55	0.19 U	0.27 U	0.27 U	0.27 U
1,1-Dichloroethane	ug/m3	430	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.2 U
1,1-Dichloroethene	ug/m3	20	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.04 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.2 U
1,2,4-Trichlorobenzene	ug/m3	NA	0.52 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.15 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.52 U	0.26 U	0.37 U	0.37 U	0.37 U
1,2,4-Trimethylbenzene	ug/m3	52	0.076 J	0.26	0.33	0.17 U	0.53	0.23	0.32	0.12 J	0.12 J	0.13 J	0.17 U	0.17 U	0.26	0.17 U	0.21	0.17 U	0.17 U	0.17 U	0.39	0.26	0.37	0.74	
1,2-Dibromoethane (EDB)	ug/m3	0.038	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.077 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.72	0.27 U	0.38 U	0.38 U	0.38 U
1,2-Dichlorobenzene	ug/m3	410	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.12 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.84 U	0.21 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethane	ug/m3	0.31	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.032 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.057 J	0.14 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	ug/m3	0.42	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.046 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	1.3	0.23 U	0.23 U	0.23 U	
1,2-Dichlorotetrafluoroethane	ug/m3	NA											0.25 U		0.25 U							0.35 U	0.35 U	0.35 U	
1,3,5-Trimethylbenzene	ug/m3	52	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.069 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.32	0.17 U	0.17 U	0.25 U	0.25 U
1,3-Butadiene	ug/m3	NA	0.078 U	0.078 U	0.078 U	0.078 U	0.55	0.078 U	0.044 U	0.078 U	0.045 J	0.078 U	0.062 J	0.17	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.078 U	0.11 U	0.11 U	0.33
1,3-Dichlorobenzene	ug/m3	410	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.12 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.58 J	0.21 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	ug/m3	24	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.12 U	0.068 J	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.62 J	0.21 U	0.3 U	0.3 U	0.3 U
1,4-Dioxane	ug/m3	NA												1.3 U		1.3 U									
2-Butanone	ug/m3	500	2.2 J	2 J	2.9 J	0.66 J	1.1 J	1.5 J	2.1 J	1.1 J	1.4 J	1.5 J	0.96 J	0.99 J	0.8 J	2.3 J	0.62 J	2.5 J	1.2 J	2 J	2.7 J	1.2 J	21	4.4	6
2-Hexanone	ug/m3	NA	0.32	0.28	0.31	0.14 U	0.14 U	0.14 U	0.21	0.14 U	0.27	0.14	0.14 U	0.14 U	0.47	0.14 U	0.31	0.28	0.14 U	0.14 U	0.14 U	0.2 U	0.33	0.73	
4-Ethyltoluene	ug/m3	NA	0.17 U	0.17 U	0.17 U	0.17 U	0.18	0.17 U	0.051 J	0.059 J	0.086 J	0.045 J	0.066 J	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.11 J	0.17 U	0.4	0.25 U	0.25 U
4-Isopropyltoluene	ug/m3	370																							
4-Methyl-2-pentanone	ug/m3	200	0.14 U	0.19	0.36	0.14 U	0.17	0.35	0.26	0.27	0.15	0.13 J	0.14 U	0.24	0.14 U	0.14 U	0.39	0.086 J	0.47	0.14 U	0.87	0.2 U	0.2 U	0.43	
Acetone	ug/m3	500	12	28	16	14	11	15	42	29	11	10	15	9.9	8.5	19	4.9	14	7.9	12	13	8.5	17	10	15
Acrylonitrile	ug/m3	NA																							
Benzene	ug/m3	3.3	0.75	0.23	0.75	0.54	2.4	0.41	0.29	0.5	0.5	0.28	0.43	1.1	0.55	0.62	0.43	0.5	0.51	0.51	0.94	0.48	1.1	0.68	1.8
Benzyl chloride	ug/m3	NA	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.052 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.26 U	0.26 U	0.26 U
Bromodichloromethane	ug/m3	0.46	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.067 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.33 U	0.33 U	0.33 U
Bromoform	ug/m3	7.3	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.21 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.51 U	0.51 U	0.51 U
Bromomethane	ug/m3	NA	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.16	0.099	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.19 U	0.19 U	0.19 U	0.19 U
Carbon disulfide	ug/m3	NA	1.1 U	1.1 U	0.25 J	1.1 U	1.1 U	0.15 J	0.16 J	0.24 J	1.1 U	0.092 J	0.13 J	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.16 U	0.16 U	0.16 U
Carbon tetrachloride	ug/m3	0.54	0.39	0.42	0.47	0.47	0.45	0.44	0.42	0.34	0.36	0.36	0.39	0.53	0.41	0.43	0.42	0.39	0.4	0.51	0.22 U	0.37	0.4	0.43	0.5
Chlorobenzene	ug/m3	200	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.046 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.23 U	0.23 U	0.23 U	0.23 U
Chloroethane	ug/m3	500	0.093 U	0.098	0.093 U	0.093 U	0.093 U	0.093 U	0.053 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.19 U	0.093 U	0.093 U	0.19 U	0.093 U	0.13 U	0.41
Chloroform	ug/m3	0.5	0.075 J	0.17 U	0.21	0.17 U	0.17 U	0.24	0.28	0.4	0.065 J	0.14 J	0.21	0.28	0.17 U	0.55	0.17 U	0.16 J	0.14 J	0.18	0.17 U	0.17 U	0.24 U	0.24 U	0.24 U
Chloromethane	ug/m3	80	1.3	1.3	1.1	1	1.3	1.2	0.73	0.85	0.99	1.7	1.1	1.4	0.99	1.4	1.2	1.2	1.2	2.3	1.3	1	1.2	0.99	1.4
cis-1,2-Dichloroethene	ug/m3	100	0.14 U	0.14 U	0.19	0.14 U	0.14 U	0.14 U	0.04 U	0.46	0.14 U	0.14 U	0.11 J	0.15	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	1.1
cis-1,3-Dichloropropene	ug/m3	NA	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.045 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.22 U	0.22 U	0.22 U
Cyclohexane	ug/m3	NA	0.12 U	0.12 U	0.12 U	0.12 U	0.34	0.12 U	0.069 U	0.12 U	0.12 U	0.12 U	0.12 U	1	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.17 U	0.17 U	0.44
Dibromochloromethane	ug/m3	NA	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.085 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.73	0.3 U	0.43 U	0.43 U
Dichlorodifluoromethane	ug/m3	500	1.8	2.7	1.8	2.7	1.5	2.1	2.2	1.8	1.4	2.3	1.6	2.4	1.6	0.64	0.87	1.4	2.3	2.2	2.3	0.17 U	1.9	2.2	2.5
Ethanol	ug/m3	NA	2.5 J	21	27	11	24	64	41	580	8.7	16	25	14	61	21	2.8	16	94	11	18	24	5.3	8.9	12
Ethyl acetate	ug/m3	NA	0.44	0.28	0.34	2.6	2.5	0.13 U	0.25	0.47	0.27	0.13 U	4.5	0.13 U	1.1	0.13 U	0.83	0.22 J	0.15	0.25 U	6	3.4	0.37 U	0.37 U	0.18 U
Ethylbenzene	ug/m3	290	0.098 J	0.18	0.36	0.15 U	0.55	0.22	0.17	0.14 J	0.13 J	0.12 J	0.15 J	0.41	0.15 U	0.22	0.15 U	0.22	0.088 J	0.34	0.55	0.66	0.25	0.29	0.65
Hexachlorobutadiene	ug/m3	NA	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.21 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.75 U	0.37 U	1.1 U	1.1 U	1.1 U
Hexane	ug/m3	NA	1 J	0.68 J	0.94 J	0.76 J	2.1 J	0.44 J	0.43 J	0.41 J	5.1	0.45 J	0.72 J	1.9 J	0.49 J	0.59 J	0.23 J	0.64 J	0.28 J	0.68 J	4.9 U	0.42 J	0.9	0.66	1.2
Isopropyl alcohol	ug/m3	NA	0.62 J	3.4 U	3.4 U	1.9 J	2.1 J	5.2	4.8	7.7	1.9 J	0.87 J	2.1 J	3.4 U	3.4 U	5.4	0.93 J	2.5 J	2.1 J	8	2.7 J	4.6	3.5	3.3	4.7
Isopropylbenzene																									



**Appendix E1.  
Summary of Analytical Results - Indoor Air Sampling for Large Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Area:			Large Retail Space																						
Location:			IA-4																						
Sample ID:	IA-4-021809	IA-4-022609	IA-4-041409	IA-4-042409	IA-4-091709	IA-4-092409	IA-4-100109	IA-4-100809	IA-4-012810	IA-4-020510	IA-4-021210	IA-4-021910	IA-4-032610	IA-4-043010	IA-4-052810	IA-4-070110	IA-4-091610	IA-4-120710	IA-4-021711	IA-4-060211	IA-4-091511	IA-4-120811	IA-4-030812		
Sample Date:	2/18/2009	2/26/2009	4/14/2009	4/24/2009	9/17/2009	9/24/2009	10/1/2009	10/8/2009	1/28/2010	2/5/2010	2/12/2010	2/19/2010	3/26/2010	4/30/2010	5/28/2010	7/1/2010	9/16/2010	12/7/2010	2/17/2011	6/2/2011	9/15/2011	12/8/2011	3/8/2012		
Analyte	Units	CT IACTIND 2003																							
1,1,1,2-Tetrachloroethane	ug/m3	1.1																						0.62 U	
1,1,1-Trichloroethane	ug/m3	500	1.1	0.45	1.5	2.2	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.76	0.29	0.89	0.27 U	1.1	0.28	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.34 U	0.34 U	0.24 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.21 U	
1,1,2-Trichloroethane	ug/m3	12	0.27 U	0.27 U	0.19 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.16 U	
1,1-Dichloroethane	ug/m3	430	0.2 U	0.31	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.12 U	
1,1-Dichloroethene	ug/m3	20	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.059 U	
1,2,4-Trichlorobenzene	ug/m3	NA	0.37 U	0.37 U	0.26 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.75 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.74 U	0.45 U	0.45 U	
1,2,4-Trimethylbenzene	ug/m3	52	0.65	0.29	0.18 U	0.25 U	0.25 U	0.41	0.28	0.41	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.34	0.41	0.44	0.25 U	0.49	0.25 U	0.25 J	0.094 J	0.15 U	
1,2-Dibromomethane (EDB)	ug/m3	0.038	0.38 U	0.38 U	0.27 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.23 U	
1,2-Dichlorobenzene	ug/m3	410	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	
1,2-Dichloroethane	ug/m3	0.31	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.063 J	
1,2-Dichloropropane	ug/m3	0.42	0.23 U	0.23 U	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	
1,2-Dichlorotetrafluoroethane	ug/m3	NA	0.35 U	0.35 U	0.25 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U		
1,3,5-Trimethylbenzene	ug/m3	52	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.15 U	
1,3-Butadiene	ug/m3	NA	0.77	0.11 U	0.08 U	0.11 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.11 U	0.23 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.066 U	
1,3-Dichlorobenzene	ug/m3	410	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	
1,4-Dichlorobenzene	ug/m3	24	0.3 U	0.3 U	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.18 U	
1,4-Dioxane	ug/m3	NA																							
2-Butanone	ug/m3	500	3.2	2.5	1.1	1.6	1.5	2	1.3	1.2	0.3 U	0.69	1.2	0.5	1.6	1.5	2.2	4.8	2.4	0.96	1 B	2.9 U	5.9 J	1 J	
2-Hexanone	ug/m3	NA	0.39	0.2 U	0.14 U	0.2 U	0.29	0.45	0.32	0.27	0.2 U	0.2 U	0.2 U	0.2 U	0.39	0.54	1	0.59	0.2 U	0.2 U	0.21 J	0.35	0.086 J		
4-Ethyltoluene	ug/m3	NA	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.15 U	
4-Isopropyltoluene	ug/m3	370																							
4-Methyl-2-pentanone	ug/m3	200	0.28	0.2 U	0.14 U	0.2 U	0.2 U	0.32	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.43	0.45	0.2 U	0.2 U	0.2 U	0.2 J	0.098 J	0.15		
Acetone	ug/m3	500	20	7.8	7.9	20	9.3	16	9.3	10	2.3	4.9	5.9	2.5	6.9	8.7	15	31	19	13 B	12 B	12 B	15	6.8	
Acrylonitrile	ug/m3	NA																							
Benzene	ug/m3	3.3	3	0.76	0.59	0.44	0.4	0.43	0.37	0.48	0.16 U	0.88	0.66	0.54	0.57	0.64	0.48	0.47	0.66	0.49	1.4	0.31	0.3	0.38	
Benzyl chloride	ug/m3	NA	0.26 U	0.26 U	0.19 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.16 U	
Bromodichloromethane	ug/m3	0.46	0.33 U	0.33 U	0.24 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U	0.34 U	0.2 U	
Bromoform	ug/m3	7.3	0.51 U	0.51 U	0.36 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.52 U	0.52 U	0.52 U	0.31 U		
Bromomethane	ug/m3	NA	0.19 U	0.19 U	0.14 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.12 U	
Carbon disulfide	ug/m3	NA	0.16 U	0.16 U	0.12 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.31	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	1.6 J		
Carbon tetrachloride	ug/m3	0.54	0.58	0.46	0.22 U	0.45	0.41	0.4	0.46	0.4	0.31 U	0.43	0.31 U	0.42	0.43	0.47	0.52	0.48	0.44	0.46	0.57	0.68	0.52		
Chlorobenzene	ug/m3	200	0.23 U	0.23 U	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.14 U	
Chloroethane	ug/m3	500	0.13 U	0.13 U	0.1 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.079 U	
Chloroform	ug/m3	0.5	0.24 U	0.26	0.17 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.46	0.39	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.073 U	
Chloromethane	ug/m3	80	1.3	1	1.1	1.2	0.9	1.1	1	1.3	1.3	1.3	1.2	1.1	0.77	1.2	1.2	1	0.95	0.95	1.1	1.5	1.4		
cis-1,2-Dichloroethene	ug/m3	100	1.1	0.98	0.61	1.7	0.2 U	0.2 U	0.84	0.48	0.2 U	0.2 U	0.2 U	0.59	0.2 U	1.3	0.2 U	0.44	0.2 U	1.8	0.2 U	0.2 U	0.19		
cis-1,3-Dichloropropene	ug/m3	NA	0.22 U	0.22 U	0.16 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.23 U		
Cyclohexane	ug/m3	NA	0.64	0.17 U	0.12 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U		
Dibromochloromethane	ug/m3	NA	0.43 U	0.43 U	0.31 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.26 U		
Dichlorodifluoromethane	ug/m3	500	2.8	2.6	2.1	2.4	2.1	2	2.2	2.2	2.4	2.5	2.6	3	1.7	2.1	2.5	2.6	1.5	2	3.2	1.8	1.7		
Ethanol	ug/m3	NA	18	8	5.2	5.5	6	6.5	4.9	5.6	7.7	34	17	31	3.9	4.9	6.1	8.7	9.8	3.4	8.9	5.3	7		
Ethyl acetate	ug/m3	NA	0.19	0.37 U	0.26 U	0.37 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.16		
Ethylbenzene	ug/m3	290	0.78	0.29	0.16	0.22 U	0.22 U	0.27	0.22 U	0.26	0.22 U	0.26	0.22 U	0.22 U	0.22 U	0.25	0.25	0.29	0.44	0.22 U	0.49	0.22 U	0.22 J		
Hexachlorobutadiene	ug/m3	NA	1.1 U	1.1 U	0.75 U	1.1 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	1.1 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.32 U		
Hexane	ug/m3	NA	1.7	0.66																					



**Appendix E1.**  
**Summary of Analytical Results - Indoor Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:			Large Retail Space										
Location:	IA-4	LRAIR01	LRAIR02	LRAIR03	LRAIR04	LRAIR05	LRAIR06	LRAIR07	LRAIR08	LRAIR09	LRAIR10		
Sample ID:	IA-4-090619	LRAIR01	LRAIR02	LRAIR03	LRAIR04	LRAIR05	LRAIR06	LRAIR07	LRAIR08	LRAIR09	LRAIR10		
Sample Date:	9/6/2019	5/15/2009	5/15/2009	5/15/2009	5/15/2009	5/15/2009	5/15/2009	5/15/2009	5/15/2009	5/15/2009	5/15/2009		
Analyte	Units	CT IACTIND 2003											
1,1,1,2-Tetrachloroethane	ug/m3	1.1	0.5 U										
1,1,1-Trichloroethane	ug/m3	500	0.22 U	0.45	0.52	0.65	0.57	0.51	0.44	0.69	0.5	0.49	0.53
1,1,2,2-Tetrachloroethane	ug/m3	0.14	0.27 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	ug/m3	12	0.22 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,1-Dichloroethane	ug/m3	430	0.16 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	ug/m3	20	0.16 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trichlorobenzene	ug/m3	NA	0.3 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
1,2,4-Trimethylbenzene	ug/m3	52	0.27	0.25 U	0.25 U	0.25 U	0.29	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromoethane (EDB)	ug/m3	0.038	0.31 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
1,2-Dichlorobenzene	ug/m3	410	0.24 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethane	ug/m3	0.31	0.16 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	ug/m3	0.42	0.18 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
1,2-Dichlorotetrafluoroethane	ug/m3	NA		0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
1,3,5-Trimethylbenzene	ug/m3	52	0.2 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Butadiene	ug/m3	NA	0.088 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
1,3-Dichlorobenzene	ug/m3	410	0.24 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	ug/m3	24	0.24 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dioxane	ug/m3	NA											
2-Butanone	ug/m3	500	0.52 J	3.3	3.4	2.1	2.6	2	1.6	3.1	2.5	2.6	1.4
2-Hexanone	ug/m3	NA	0.16 U	0.73	0.66	0.38	0.51	0.37	0.38	0.61	0.48	0.43	0.29
4-Ethyltoluene	ug/m3	NA	0.2 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Isopropyltoluene	ug/m3	370											
4-Methyl-2-pentanone	ug/m3	200	0.16 U	0.42	0.39	0.32	0.36	0.54	0.27	0.32	0.3	0.61	0.23
Acetone	ug/m3	500	5.9	12	13	10	11	8.5	7.7	13	11	9.8	6.9
Acrylonitrile	ug/m3	NA											
Benzene	ug/m3	3.3	0.43	0.54	0.6	0.67	0.55	0.56	0.51	0.53	0.6	0.51	0.57
Benzyl chloride	ug/m3	NA	0.21 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Bromodichloromethane	ug/m3	0.46	0.27 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Bromoform	ug/m3	7.3	0.41 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U
Bromomethane	ug/m3	NA	1.6 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Carbon disulfide	ug/m3	NA	1.2 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Carbon tetrachloride	ug/m3	0.54	0.37	0.7	0.68	0.71	0.68	0.68	0.63	0.68	0.7	0.64	0.66
Chlorobenzene	ug/m3	200	0.18 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
Chloroethane	ug/m3	500	0.11 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Chloroform	ug/m3	0.5	0.2 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Chloromethane	ug/m3	80	1.2	1	0.98	1	0.95	1	1	0.92	1.1	0.91	1.2
cis-1,2-Dichloroethene	ug/m3	100	0.16 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.21	0.2	0.2 U	0.2 U
cis-1,3-Dichloropropene	ug/m3	NA	0.18 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Cyclohexane	ug/m3	NA	0.14 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Dibromochloromethane	ug/m3	NA	0.34 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
Dichlorodifluoromethane	ug/m3	500	1.5	2.5	2.3	2.6	2.4	2.7	2.4	2.4	2.8	2.3	2.7
Ethanol	ug/m3	NA	22	65	9	6.5	5.9	6	5.6	5.9	14	44	14
Ethyl acetate	ug/m3	NA	0.14 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Ethylbenzene	ug/m3	290	0.39	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.27	0.22 U
Hexachlorobutadiene	ug/m3	NA	0.43 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Hexane	ug/m3	NA	0.28 J	1.1	0.21	0.18 U	0.18	0.24	0.18 U	0.19	0.21	0.2	0.18 U
Isopropyl alcohol	ug/m3	NA	0.87 J	3.3	3.4	3.7	3.5	3.6	3.4	4.4	3.6	2.8	3.2
Isopropylbenzene	ug/m3	120											
m,p-Xylene	ug/m3	NA	1.2	0.58	0.57	0.58	0.55	0.49	0.5	0.48	0.53	1	0.5
Methyl methacrylate	ug/m3	NA	0.16 U										
Methylene chloride	ug/m3	17	0.43 J	5.9	1.5	1.5	1.6	1.9	1.6	1.5	1.6	1.6	1.4
Methyl-t-butyl ether	ug/m3	190	0.14 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Naphthalene	ug/m3	NA											
n-Butylbenzene	ug/m3	410											
n-Heptane	ug/m3	NA	0.56	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
o-Xylene	ug/m3	NA	0.44	0.28	0.28	0.27	0.27	0.25	0.26	0.25	0.27	0.34	0.26
Propylene (Propene)	ug/m3	NA	2.8 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U
sec-Butylbenzene	ug/m3	410											
Styrene	ug/m3	290	0.17 U	0.23	0.21 U	0.21 U	0.22	0.21 U	0.21 U	0.37	0.21 U	0.21 U	0.21 U
Tetrachloroethene	ug/m3	5	0.27 U	0.47	0.47	0.54	0.66	0.64	0.6	0.73	0.53	0.46	0.46
Tetrahydrofuran	ug/m3	NA	0.12 U	0.15 U	0.15 U	0.15 U	0.15 U	0.2	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	ug/m3	500	1.4	0.73	0.7	0.58	0.59	0.51	0.53	0.57	0.53	0.54	0.47
trans-1,2-Dichloroethene	ug/m3	200	0.16 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	ug/m3	NA	0.18 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Trichloroethene	ug/m3	1	0.21 U	0.27 U	0.28	0.27	0.29	0.34	0.27	0.28	0.27 U	0.27 U	0.27 U
Trichlorofluoromethane	ug/m3	500	1.2	1.3	1.3	1.2	1.1	1.4	1.3	1.1	1.4	1	1.4
Trichlorotrifluoroethane	ug/m3	NA	0.42 J	0.63	0.6	0.65	0.62	0.64	0.57	0.59	0.68	0.62	0.58
Vinyl acetate	ug/m3	NA	2.8 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Vinyl chloride	ug/m3	1.9	0.1 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U

Notes:  
 NA - not available  
 U - Not detected, value is the detection limit  
 B - Compounds detected in method blank as well as field sample  
 J - Indicates compound was detected at an estimated value.  
 D - Result from diluted analyses  
 ug/m3 - micrograms per cubic meter  
 Bolded and shaded values are above the CT target indoor air concentration for industrial/commercial scenarios

Prepared By: AKN, 9/16/2019

Checked By: HWC, 9/16/2019

## **Appendix E2**

Summary of Historical Analytical Results –  
Extraction Well and Post-Treatment Samples for Large Retail Space

**Appendix E2.**  
**Summary of Analytical Results - Extraction Well and Post-Treatment Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:	Extraction Well - Large Retail Space																								
	Location:	EW-1		EW-2		EW-3		EW-4		EW-Combined															
Sample ID:	EW-1-030609	EW-1-033109	EW-2-030609	EW-2-033109	EW-3-030609	EW-3-033109	EW-4-030609	EW-4-033109	EW-Combined-020309	EW-COMBINED-021109	EW-COMBINED-021809	EW-COMBINED-022609	EW-COMBINED-041409	EW-COMBINED-042409	EW-COMBINED-091709	EW-COMBINED-092409	EW-COMBINED-100109	EW-COMBINED-100809	EW-COMBINED-012810	EW-COMBINED-020510	EW-COMBINED-021210	EW-COMBINED-021910	EW-COMBINED-043010	EW-COMBINED-052810	
Sample Date:	3/6/2009	3/31/2009	3/6/2009	3/31/2009	3/6/2009	3/31/2009	3/6/2009	3/31/2009	2/3/2009	2/11/2009	2/18/2009	2/26/2009	4/14/2009	4/24/2009	9/17/2009	9/24/2009	10/1/2009	10/8/2009	1/28/2010	2/5/2010	2/12/2010	2/19/2010	4/30/2010	5/28/2010	
Analyte	Units																								
1,1,1,2-Tetrachloroethane	ug/m3																								
1,1,1-Trichloroethane	ug/m3	59000	66000	26000	30000	54000	72000	11000	14000	190000	91000	73000	32000	3500	19000	11000	8100	7900	6800	1500	2500	150	1200	1400	1700
1,1,2,2-Tetrachloroethane	ug/m3	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	1.7 U	6.8 U	6.8 U	6.8 U	14 U	14 U	6.8 U	0.34 U	3.4 U	6.8 U	14 U	14 U	0.68 U	6.8 U	0.34 U	0.68 U	0.68 U	6.8 U
1,1,2-Trichloroethane	ug/m3	6.4	10	5.4 U	5.4 U	5.4 U	5.4 U	1.4 U	5.4 U	5.4 U	5.4 U	11 U	11 U	5.4 U	0.65	2.7 U	5.4 U	11 U	11 U	0.54 U	5.4 U	0.27 U	0.54 U	0.54 U	5.4 U
1,1-Dichloroethane	ug/m3	4100	4400	5700	7000	1600	2300	690	1400	19000	7800	5300	4800	390	2200	1600	1900	1700	280	370	31	310	200	270	
1,1-Dichloroethene	ug/m3	570	1200	330	640	340	560	97	210	7800	1800	1000	630	73	420	310	250	260	280	52	66	7.3	62	30	40
1,2,4-Trichlorobenzene	ug/m3	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	1.9 U	7.4 U	7.4 U	7.4 U	15 U	15 U	7.4 U	0.37 U	3.7 U	7.4 U	15 U	15 U	0.74 U	7.4 U	0.37 U	0.74 U	0.74 U	7.4 U
1,2,4-Trimethylbenzene	ug/m3	5 U	5 U	5 U	5 U	5 U	5 U	1.3 U	5 U	5 U	5 U	10 U	10 U	5 U	0.25 U	2.5 U	5 U	10 U	10 U	0.5 U	5 U	0.25 U	0.5 U	0.5 U	5 U
1,2-Dibromoethane (EDB)	ug/m3	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	1.9 U	7.6 U	7.6 U	7.6 U	16 U	16 U	7.6 U	0.38 U	3.8 U	7.6 U	16 U	16 U	0.76 U	7.6 U	0.38 U	0.76 U	0.76 U	7.6 U
1,2-Dichlorobenzene	ug/m3	6 U	6 U	6 U	6 U	6 U	6 U	1.5 U	6 U	6 U	6 U	12 U	12 U	6 U	0.3 U	3 U	6 U	12 U	12 U	0.6 U	6 U	0.3 U	0.6 U	0.6 U	6 U
1,2-Dichloroethane	ug/m3	4 U	4 U	4 U	4 U	4 U	4 U	1 U	4 U	4 U	4 U	8 U	8 U	4 U	0.2 U	2 U	4 U	8 U	8 U	0.4 U	4 U	0.2 U	0.4 U	0.4 U	4 U
1,2-Dichloropropane	ug/m3	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	1.2 U	4.6 U	4.6 U	4.6 U	9.2 U	9.2 U	4.6 U	0.23 U	2.3 U	4.6 U	9.2 U	9.2 U	0.46 U	4.6 U	0.23 U	0.46 U	0.46 U	4.6 U
1,2-Dichlorotetrafluoroethane	ug/m3	7 U	7 U	7 U	7 U	7 U	7 U	1.8 U	7 U	7 U	7 U	14 U	14 U	7 U	0.35 U	3.5 U	7 U	14 U	14 U	0.7 U	7 U	0.35 U	0.7 U	0.7 U	7 U
1,3,5-Trimethylbenzene	ug/m3	5 U	5 U	5 U	5 U	5 U	5 U	1.3 U	5 U	5 U	5 U	10 U	10 U	5 U	0.25 U	2.5 U	5 U	10 U	10 U	0.5 U	5 U	0.25 U	0.5 U	0.5 U	5 U
1,3-Butadiene	ug/m3	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	0.55 U	2.2 U	2.2 U	2.2 U	4.4 U	4.4 U	2.2 U	0.11 U	2.3 U	4.5 U	8.9 U	8.9 U	0.45 U	4.5 U	0.23 U	0.45 U	0.45 U	2.2 U
1,3-Dichlorobenzene	ug/m3	6 U	6 U	6 U	6 U	6 U	6 U	1.5 U	6 U	6 U	6 U	12 U	12 U	6 U	0.3 U	3 U	6 U	12 U	12 U	0.6 U	6 U	0.3 U	0.6 U	0.6 U	6 U
1,4-Dichlorobenzene	ug/m3	6 U	6 U	6 U	6 U	6 U	6 U	1.5 U	6 U	6 U	6 U	12 U	12 U	6 U	0.3 U	3 U	6 U	12 U	12 U	0.6 U	6 U	0.3 U	0.6 U	0.6 U	6 U
1,4-Dioxane	ug/m3																								
2-Butanone	ug/m3	3.5	8.9	12	11	36	10	36	6.4	37	32	48	60	21	40	7.8	31	30	21	4	11	10	9	12	22
2-Hexanone	ug/m3	4 U	4 U	4 U	4 U	4 U	4 U	1 U	4 U	4 U	4 U	8 U	8 U	4 U	0.5	2 U	4 U	8 U	8 U	0.4 U	4 U	0.2 U	0.4 U	0.4 U	4 U
4-Ethyltoluene	ug/m3	5 U	5 U	5 U	5 U	5 U	5 U	1.3 U	5 U	5 U	5 U	10 U	10 U	5 U	0.25 U	2.5 U	5 U	10 U	10 U	0.5 U	5 U	0.25 U	0.5 U	0.5 U	5 U
4-Methyl-2-pentanone	ug/m3	4 U	4 U	4 U	4 U	4 U	4 U	1 U	4 U	4 U	4 U	8 U	8 U	4 U	0.59	2 U	4 U	8 U	8 U	0.4 U	4 U	0.28	0.4 U	0.4 U	4 U
Acetone	ug/m3	35	16	9.6 U	9.6 U	53	24	26	12	1600	31	75	63	4.8 U	0.24 U	20	9.6 U	20 U	20 U	31	9.6 U	13	0.96 U	16	24
Benzene	ug/m3	5.3	11	5.6	7.8	3.2 U	6.8	1.4	3.2 U	14	7.3	8.4	6.4 U	3.2 U	2.5	2.7	3.2 U	6.4 U	6.4 U	0.61	3.2 U	0.63	0.43	0.74	5.5
Benzyl chloride	ug/m3	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	1.3 U	5.2 U	5.2 U	5.2 U	11 U	11 U	5.2 U	0.26 U	2.6 U	5.2 U	11 U	11 U	0.52 U	5.2 U	0.26 U	0.52 U	0.52 U	5.2 U
Bromodichloromethane	ug/m3	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	1.7 U	6.6 U	6.6 U	6.6 U	14 U	14 U	6.6 U	0.33 U	3.3 U	6.6 U	14 U	14 U	0.66 U	6.6 U	0.33 U	0.66 U	0.66 U	6.6 U
Bromoform	ug/m3	11 U	11 U	11 U	11 U	11 U	11 U	2.6 U	11 U	11 U	11 U	21 U	21 U	11 U	0.51 U	5.1 U	11 U	21 U	21 U	1.1 U	11 U	0.51 U	1.1 U	1.1 U	11 U
Bromomethane	ug/m3	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	0.95 U	3.8 U	3.8 U	3.8 U	7.6 U	7.6 U	3.8 U	0.19 U	1.9 U	3.8 U	7.6 U	7.6 U	0.38 U	3.8 U	0.19 U	0.38 U	0.38 U	3.8 U
Carbon disulfide	ug/m3	3.2 U	3.2 U	27	25	3.2 U	3.2 U	1.8	3.2 U	3.2 U	63	32	20	3.2 U	4.6	1.6 U	3.2 U	6.4 U	6.4 U	4.3	3.2 U	0.17	3.8	0.77	3.2 U
Carbon tetrachloride	ug/m3	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	1.6 U	6.2 U	6.2 U	6.2 U	13 U	13 U	6.2 U	0.57	3.1 U	6.2 U	13 U	13 U	0.62 U	6.2 U	0.38	0.62 U	0.62 U	6.2 U
Chlorobenzene	ug/m3	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	1.2 U	4.6 U	4.6 U	4.6 U	9.2 U	9.2 U	4.6 U	0.23 U	2.3 U	4.6 U	9.2 U	9.2 U	0.46 U	4.6 U	0.23 U	0.46 U	0.46 U	4.6 U
Chloroethane	ug/m3	170	250	700	590	41	44	17	33	3400	1700	1200	450	42	220	110	94	92	88	9.8	11	1.3	9.9	4.8	7.2
Chloroform	ug/m3	20	34	9.6	15	13	23	3.6	7.5	27	17	20	17	4.8 U	8.8	12	14	11	11	4.1	5.8	0.49	6.2	6	7.9
Chloromethane	ug/m3	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U	2 U	2 U	4 U	4 U	2 U	8.2	1 U	2 U	4 U	4 U	0.2 U	2 U	0.1 U	0.2 U	0.2 U	2 U
cis-1,2-Dichloroethene	ug/m3	2000	2200	6100	7600	610	1200	560	1300	14000	4700	6300	4200	300	1600	1600	1500	1300	1200	190	280	21	240	180	260
cis-1,3-Dichloropropene	ug/m3	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	1.1 U	4.4 U	4.4 U	4.4 U	8.8 U	8.8 U	4.4 U	0.22 U	2.2 U	4.4 U	8.8 U	8.8 U	0.44 U	4.4 U	0.22 U	0.44 U	0.44 U	4.4 U
Cyclohexane	ug/m3	3.4 U	5.7	8.4	8.8	3.4 U	3.4 U	0.85 U	3.4 U	3.4 U	3.4 U	6.8 U	6.8 U	3.4 U	0.17 U	1.7 U	3.4 U	6.8 U	6.8 U	0.34 U	3.4 U	0.17 U	0.34 U	0.34 U	3.4 U
Dibromochloromethane	ug/m3	8.6 U	8.6 U	8.6 U	8.6 U	8.6 U	8.6 U	2.2 U	8.6 U	8.6 U	8.6 U	18 U	18 U	8.6 U	0.43 U	4.3 U	8.6 U	18 U	18 U	0.86 U	8.6 U	0.43 U	0.86 U	0.86 U	8.6 U
Dichlorodifluoromethane	ug/m3	5 U	170	5 U	5 U	5.4	7	2.6	5 U	5 U	5 U	10 U	110	5 U	2.8	2.5 U	5 U	10 U	10 U	2.4	5 U	2.2	2.7	1.7	5 U
Ethanol	ug/m3	33	40	12	8.3	39	1.8 U	8.6	1.8 U	960	81	120	120	17	21	200	96	32	33	39	60	23	62	10	19 U
Ethyl acetate	ug/m3	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	0.9 U	3.6 U	3.6 U	3.6 U	7.2 U	7.2 U	3.6 U	0.37 U	3.7 U	3.6 U	7.2 U	7.2 U	0.36 U	3.6 U	0.18 U	0.36 U	0.36 U	3.6 U
Ethylbenzene	ug/m3	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	1.1 U	4.4 U	4.4 U	4.4 U	8.8 U	8.8 U	4.4 U	0.22 U	2.2 U	4.4 U	8.8 U	8.8 U	0.44 U	4.4 U	0.22 U	0.44 U	0.44 U	4.4 U
Hexachlorobutadiene	ug/m3	22 U	22 U	22 U	22 U	22 U	22 U	5.4 U	22 U	22 U	22 U	43 U	43 U	22 U	1.1 U	5.3 U	11 U	22 U	22 U	1.1 U	11 U	0.53 U	1.1 U	1.1 U	11 U
Hexane	ug/m3	3.6 U	3.6 U	3.6 U	6.6	3.6 U	3.6 U	3.2	3.6 U	16	4.9	270	7.2 U	3.6 U	2.3	1.9	3.6 U	7.2 U	7.2 U	0.36 U	3.6 U	0.74	0.36 U	0.92	3.6 U
Isopropyl alcohol	ug/m3	28	2.4 U	2.4 U	2.4 U	26	5.9	7.5	7.1	610	2.4 U	15	9.9 U	5 U	0.25 U	22	5 U	9.9 U	9.9 U	2.3	5 U	1	0.5 U	2.6	2.4 U

**Appendix E2.**  
**Summary of Analytical Results - Extraction Well and Post-Treatment Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Area:		Extraction Well - Large Retail Space																							
Location:		EW-Combined																							
Sample ID:	EW-COMBINED-070110	EW-COMBINED-091610	EW-COMBINED-120710	EW-COMBINED-021711	EW-COMBINED-091511	EW-COMBINED-120811	EW-COMBINED-030812	EW-COMBINED-061412	EW-COMBINED-091312	EW-COMBINED-010313	EW-COMBINED-031513	EW-COMBINED-060713	EW-COMBINED-090613	EW-COMBINED-121313	EW-COMBINED-030714	EW-COMBINED-061314	EW-COMBINED-091214	EW-COMBINED-121914	EW-COMBINED-032715	EW-COMBINED-061115	EW-COMBINED-091615	EW-COMBINED-121815	EW-COMBINED-021816	EW-COMBINED-080516	
Sample Date:	7/1/2010	9/16/2010	12/7/2010	2/17/2011	9/15/2011	12/8/2011	3/8/2012	6/14/2012	9/13/2012	1/3/2013	3/15/2013	6/7/2013	9/6/2013	12/13/2013	3/7/2014	6/13/2014	9/12/2014	12/19/2014	3/27/2015	6/11/2015	9/16/2015	12/18/2015	2/18/2016	8/5/2016	
Analyte	Units																								
1,1,1,2-Tetrachloroethane	ug/m3					2.5 U		12 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	0.44 U	1.2 U	1.2 U	1.2 U	2.5 U	1.2 U	1.2 U	1.2 U	2.5 U	2.5 U		
1,1,1-Trichloroethane	ug/m3	2000	4700	280	2500	2400	340	1100	1800	2800	5.5	610	850	1900	1500	780	770	1300	420	500	1200	3400 E	1600	320	4000
1,1,2,2-Tetrachloroethane	ug/m3	0.68 U	0.68 U	0.69 U	0.69 U	1.4 U	0.69 U	3.4 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.24 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	1.4 U	1.4 U	1.4 U	6.9 U
1,1,2-Trichloroethane	ug/m3	0.54 U	0.55	0.55 U	0.55 U	1.1 U	0.55 U	2.7 U	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.19 U	0.55 U	0.55 U	0.55 U	1.1 U	0.55 U	0.55 U	0.28 J	1.1 U	1.1 U	1.1 U	5.5 U
1,1-Dichloroethane	ug/m3	290	330	36	170	200	70	78	130	200	0.4	59	68	150	62	53	68	130	55	49	100	190	69	25	360
1,1-Dichloroethene	ug/m3	52	81	7.3	58	44	21	34	42	15	0.4	24	38	56	24	27	40	52	14	22	46	160	21	9	160
1,2,4-Trichlorobenzene	ug/m3	0.74 U	0.74 U	0.74 U	0.74 U	3 U	1.5 U	3800	1.5 U	1.5 U	1.5 U	1.5 U	0.74 U	0.26 U	0.74 U	0.74 U	0.74 U	1.5 U	0.74 U	0.74 U	0.74 U	1.5 U	1.5 U	1.5 U	7.4 U
1,2,4-Trimethylbenzene	ug/m3	0.5 U	0.5 U	0.49 U	0.49 U	0.98 U	1.2	4.9 U	0.57	0.24 J	0.49 U	14	0.49 U	0.21	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.49 U	0.49 U	0.98 U	0.98 U	0.98 U	4.9 U
1,2-Dibromoethane (EDB)	ug/m3	0.76 U	0.76 U	0.77 U	0.77 U	1.5 U	0.77 U	3.8 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.27 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	1.5 U	1.5 U	1.5 U	7.7 U	
1,2-Dichlorobenzene	ug/m3	0.6 U	0.6 U	0.6 U	0.6 U	1.2 U	0.6 U	7.3	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.21 U	0.6 U	0.6 U	0.6 U	1.2 U	0.6 U	0.6 U	0.6 U	1.2 U	1.2 U	1.2 U	6 U
1,2-Dichloroethane	ug/m3	0.4 U	0.4 U	0.4 U	0.4 U	0.81 U	0.4 U	2 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.14 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.81 U	0.81 U	0.81 U	4 U
1,2-Dichloropropane	ug/m3	0.46 U	0.46 U	0.46 U	0.46 U	0.92 U	0.46 U	2.3 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.16 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.92 U	0.92 U	0.92 U	4.6 U
1,2-Dichlorotetrafluoroethane	ug/m3	0.7 U	0.7 U																						7 U
1,3,5-Trimethylbenzene	ug/m3	0.5 U	0.5 U	0.49 U	0.49 U	0.98 U	0.29 J	4.9 U	0.15 J	0.49 U	0.49 U	3.9	0.49 U	0.17 U	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.49 U	0.49 U	0.98 U	0.98 U	0.98 U	4.9 U
1,3-Butadiene	ug/m3	0.22 U	0.22 U	0.22 U	0.22 U	0.44 U	0.22 U	2.2 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.078 U	0.22 U	0.22 U	0.22 U	0.44 U	0.22 U	0.22 U	0.22 U	0.44 U	0.44 U	0.44 U	2.2 U
1,3-Dichlorobenzene	ug/m3	0.6 U	0.6 U	0.6 U	0.6 U	1.2 U	0.6 U	6 U	0.6 U	0.6 U	0.6 U	0.6 U	1.1	0.6 U	0.21 U	0.6 U	0.6 U	1.2 U	0.6 U	0.6 U	0.6 U	1.2 U	1.2 U	1.2 U	6 U
1,4-Dichlorobenzene	ug/m3	0.6 U	0.6 U	0.6 U	0.6 U	1.2 U	0.6 U	6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.64	0.6 U	0.21 U	0.6 U	0.6 U	1.2 U	0.6 U	0.6 U	0.6 U	1.2 U	1.2 U	1.2 U	6 U
1,4-Dioxane	ug/m3					0.72 U																			36 U
2-Butanone	ug/m3	22	10	4.5	4.5 B	24 J	1.3 J	120 U	110	16	12 J	22	5.3 J	7.6	0.97 J	2.5 J	5.1 J	3.3 J	1.4 J	1.2 J	1.2 J	1.3 J	1.5 J	24 U	14 J
2-Hexanone	ug/m3	0.4 U	0.4 U	0.41 U	0.41 U	0.82 J	0.16 J	4.1 U	0.31 J	0.41 U	0.41 U	1.4	0.41 U	0.26	0.41 U	0.41 U	0.41 U	0.82 U	0.41 U	0.41 U	0.41 U	0.82 U	0.82 U	0.82 U	4.1 U
4-Ethyltoluene	ug/m3	0.5 U	0.5 U	0.49 U	0.49 U	0.98 U	0.27 J	4.9 U	0.49 U	0.49 U	0.49 U	3.4	0.49 U	0.17 U	0.49 U	0.49 U	0.49 U	0.98 U	0.49 U	0.49 U	0.49 U	0.98 U	0.98 U	0.98 U	4.9 U
4-Methyl-2-pentanone	ug/m3	0.4 U	0.4 U	0.41 U	0.41 U	0.82 U	0.16 J	4.1 U	0.38 J	0.41 U	0.41 U	8.7	0.41 U	0.14 U	0.41 U	0.41 U	0.41 U	0.82 U	0.41 U	0.41 U	0.13 J	0.41 U	0.82 U	0.82 U	4.1 U
Acetone	ug/m3	16	6.6	11 B	6.3 B	19 J	6.6 J	22 J	19	14 B	9.5	75	12	11	6.6 J	15	9.8	19 U	6.2 J	6.1 J	9.5 U	12 J	6.7 J	19 U	39 J
Benzene	ug/m3	0.84	1.7	0.5	0.72	0.77	0.56	3.2 U	1	0.96	0.32	5	0.32 U	0.82	0.32 U	0.63	0.66	0.35 J	0.33	0.39	0.36	0.55 J	0.69	0.64 U	3.2 U
Benzyl chloride	ug/m3	0.52 U	0.52 U	0.52 U	0.52 U	1 U	0.52 U	5.2 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.18 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	1 U	1 U	1 U	5.2 U
Bromodichloromethane	ug/m3	0.66 U	0.66 U	0.67 U	0.67 U	1.3 U	0.67 U	3.4 U	10	0.67 U	0.67 U	0.67 U	0.67 U	0.24 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	1.3 U	9.1	1.3 U	6.7 U
Bromoform	ug/m3	1.1 U	1.1 U	1 U	1 U	2.1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U	0.36 U	1 U	1 U	1 U	2.1 U	1 U	1 U	1 U	2.1 U	2.1 U	2.1 U	10 U
Bromomethane	ug/m3	0.38 U	0.38 U	0.39 U	0.39 U	0.78 U	0.39 U	3.9 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.14 U	0.39 U	0.39 U	0.39 U	0.78 U	0.39 U	0.39 U	0.39 U	0.78 U	0.78 U	0.78 U	3.9 U
Carbon disulfide	ug/m3	1.1	1.3	0.31 U	0.73	6.2 J	3.1 U	31 U	1.7 J	3.6	3.1 J	0.82 J	3.1 U	0.73 J	3.1 U	3.1 U	0.4 J	0.52 J	0.33 J	0.24 J	0.37 J	1 J	6.2 U	6.2 U	31 U
Carbon tetrachloride	ug/m3	0.73	1.1	0.63 U	0.63	1.3 J	0.48 J	3.1 U	0.5 J	0.74	0.63 U	0.63 U	0.63 U	0.68	0.63 U	0.63 U	0.63 U	0.58 J	0.4 J	0.28 J	0.49 J	0.75 J	1.3 U	1.3 U	6.3 U
Chlorobenzene	ug/m3	0.46 U	0.46 U	0.46 U	0.46 U	0.92 U	0.46 U	4.6 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.16 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	0.92 U	0.92 U	0.92 U	4.6 U
Chloroethane	ug/m3	9.4	17	1	3.6	6.7	2.1	2.6 U	3	5.3	0.26	1.1	1.4	3.3	1.2	1	1.5	1.8	0.77	0.44	1	2.7	0.93	0.53 U	8.6
Chloroform	ug/m3	8	8.3	1.6	6.9	7.6	2.7	3.2	6.3	8.5	0.49	3.5	2.3	7	1.5	3.1	3.4	4.9	3.4	2.5	6.4	4.1	3.1	1.6	20
Chloromethane	ug/m3	0.2 U	0.2 U	0.21 U	0.21 U	0.41 U	0.21 U	2.1 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.14 U	0.21 U	0.21 U	0.21 U	0.83 U	0.41 U	0.41 U	0.41 U	0.83 U	15	0.83 U	4.1 U
cis-1,2-Dichloroethene	ug/m3	260	360	28	120	160	38	47	75	150	0.4	30	24	93	12	25	30	57	25	21	52	41	20	12	160
cis-1,3-Dichloropropene	ug/m3	0.44 U	0.44 U	0.45 U	0.45 U	0.91 U	0.45 U	2.3 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.16 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.45 U	0.91 U	0.91 U	0.91 U	4.5 U
Cyclohexane	ug/m3	0.34 U	0.55	0.34 U	0.34 U	0.69 U	0.34 U	3.4 U	0.34 U	0.34 U	0.34 U	21	0.34 U	0.12 U	0.34 U	0.34 U	0.34 U	0.69 U	0.34 U	0.34 U	0.34 U	0.69 U	0.69 U	0.69 U	3.4 U
Dibromochloromethane	ug/m3	0.86 U	0.86 U	0.85 U	0.85 U	1.7 U	0.85 U	4.3 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.3 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	1.7 U	1.7 U	1.7 U	8.5 U
Dichlorodifluoromethane	ug/m3	2.5	1.6	3	4.1	2.9	2.9	4.9 U	2.9	2.9	0.49	2.5	2.1	11	3.2	2.4	2.1	2.5	2.7	1.8	2.9	2.6	3.2	2.7	5
Ethanol	ug/m3	15	1.9 U	8.2	17	15 J	9.2	75 U	7.2 J	12	7.5	320	34	30	11	38	41	15	12	5.2 J	5.1 J	20	18	9.5 J	140
Ethyl acetate	ug/m3	0.36 U	0.36 U	0.36 U	0.36 U	0.72 U	1.2	3.6 U	1.3	0.36 U	0.36 U	110	0.36 U	0.13 U	1.8	1.8	0.36 U	0.72 U	0.36 U	11	1.3	0.72 U	0.72 U	0.72 U	3.6 U
Ethylbenzene	ug/m3	0.44 U	0.58	0.43 U	0.43 U	0.87 U	0.58	4.3 U	0.28 J	0.21 J	0.43 U	13	0.43 U	0.2	0.43 U	0.43 U	0.43 U	0.87 U	0.43 U	0.43 U	0.43 U	0.87 U	0.87 U	0.87 U	4.3 U
Hexachlorobutadiene	ug/m3	1.1 U	1.1 U	1.1 U	1.1 U	2.1 U	1.1 U	11 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	0.37 U	1.1 U	1.1 U	1.1 U	2.1 U	1.1 U	1.1 U	1.1 U	2.1 U	2.1 U	2.1 U	11 U
Hexane	ug/m3	0.44	0.71 U	0.7 U	0.8	28 U	0.66 J	140 U	0.91 J	1.5 J	14 J	6.8 J	14 U	2.2 J	1.2 J	0.8 J	14 U	28 U	14 U	7.9 J	14 U	1.6 J	28 U	28 U	140 U
Isopropyl alcohol	ug/m3	0.24 U	0.5 U	0.84	0.25 U	20 J	9.8 U	98 U	3.1 J	2.9 J	9.8 U	27	9.8 U	3.4 U	3 J	1.6 J	1.6 J	2.7 J	9.8 U	9.8 U	3.8 J	3.7 J	20 U	20 U	98 U
m,p-Xylene	ug/m3	0.86 U	1.6	0.87 U	0.87 J	1.7 U	1.6	8.7 U	0.51 J	0.59 J	0.87 U	34	0.87 U	0.4	0.87 U	0.57 J	0.95	1.7 U	0.25 J	0.87 U	0.87 U	1.7 U	1.7 U	1.7 U	8.7 U
Methyl methacrylate	ug/m3					0.41 U	0.82 U	4.1 U	0.41 U	0.41 U	0.41 U	3.5	0.41 U	0.14 U	0.41 U	0.41 U	0.41 U	0.82 U	0.41 U	0.41					

**Appendix E2.  
Summary of Analytical Results - Extraction Well and Post-Treatment Sampling for Large Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Area:	Extraction Well - Large Retail Space							Post Treatment - Large Retail Space										
	Location:	EW-Combined						PostCarbon										
Sample ID:	EW-Combined-021017	EW-Combined-090717	EW-Combined-022818	EW-Combined-091218	EW-Combined-020819	EW-Combined-090619	Post carbon-020309	POST CARBON-021109	POST CARBON-021809	POST CARBON-022609	POST CARBON-041409	POST CARBON-100809	Post-Carbon-010810	Post-Carbon-121914	Post Carbon-091218	Post Carbon-020819	Post Carbon-090619	
Sample Date:	2/10/2017	9/7/2017	2/28/2018	9/12/2018	2/8/2019	9/6/2019	2/3/2009	2/11/2009	2/18/2009	2/26/2009	4/14/2009	10/8/2009	1/8/2010	12/19/2014	9/12/2018	2/8/2019	9/6/2019	
Analyte	Units																	
1,1,1,2-Tetrachloroethane	ug/m3	1.2 U	2.5 U	2.5 U	2.5 U	1.2 U	1.2 U							1.2 U	2.5 U	1.2 U	1.2 U	
1,1,1-Trichloroethane	ug/m3	260	530	150	690	62	670	1	15	45	1.9	13000	0.56	450	380	740	0.55 U	2.3
1,1,2,2-Tetrachloroethane	ug/m3	0.69 U	1.4 U	1.4 U	1.4 U	0.69 U	0.69 U	0.34 U	1.7 U	0.68 U	0.68 U	68 U	0.34 U	0.34 U	0.69 U	1.4 U	0.69 U	0.69 U
1,1,2-Trichloroethane	ug/m3	0.55 U	1.1 U	1.1 U	1.1 U	0.55 U	0.55 U	0.27 U	1.4 U	0.54 U	0.54 U	54 U	0.27 U	0.27 U	0.55 U	1.1 U	0.55 U	0.55 U
1,1-Dichloroethane	ug/m3	25	67	19	73	13	45	0.2 U	1 U	5.4	11000	490	370	610	21	80	0.4 U	2.8
1,1-Dichloroethene	ug/m3	11	24	10	27	10	24	0.2 U	1 U	0.4 U	6400	96	78	87	3.8	30	0.4 U	9.8
1,2,4-Trichlorobenzene	ug/m3	0.74 U	1.5 U	1.5 U	1.5 U	1.5 U	0.74 U	0.37 U	1.9 U	0.74 U	0.74 U	74 U	0.37 U	0.37 U	0.74 U	1.5 U	1.5 U	0.74 U
1,2,4-Trimethylbenzene	ug/m3	0.49 U	0.98 U	0.98 U	0.98 U	1.2	0.49 U	0.25 U	1.3 U	0.5 U	0.5 U	50 U	0.25 U	0.25 U	0.49 U	0.98 U	0.49 U	8.1
1,2-Dibromoethane (EDB)	ug/m3	0.77 U	1.5 U	1.5 U	1.5 U	0.77 U	0.77 U	0.38 U	1.9 U	0.76 U	0.76 U	76 U	0.38 U	0.38 U	0.77 U	1.5 U	0.77 U	0.77 U
1,2-Dichlorobenzene	ug/m3	0.6 U	1.2 U	1.2 U	1.2 U	2 J	0.6 U	0.3 U	1.5 U	0.6 U	0.6 U	60 U	0.3 U	0.3 U	0.6 U	1.2 U	2.4 U	0.6 U
1,2-Dichloroethane	ug/m3	0.4 U	0.81 U	0.81 U	0.81 U	0.4 U	0.4 U	0.2 U	1 U	0.4 U	0.4 U	40 U	0.2 U	0.2 U	0.4 U	0.81 U	0.4 U	0.4 U
1,2-Dichloropropane	ug/m3	0.46 U	0.92 U	0.92 U	0.92 U	0.46 U	0.46 U	0.23 U	1.2 U	0.46 U	0.46 U	46 U	0.23 U	0.23 U	0.46 U	0.92 U	0.46 U	110
1,2-Dichlorotetrafluoroethane	ug/m3							0.35 U	1.8 U	0.7 U	0.7 U	70 U	0.35 U	0.35 U				
1,3,5-Trimethylbenzene	ug/m3	0.49 U	0.98 U	0.98 U	0.98 U	1.2	0.49 U	2.1	1.3 U	0.5 U	0.5 U	50 U	0.25 U	0.25 U	0.49 U	0.98 U	0.49 U	2.9
1,3-Butadiene	ug/m3	0.22 U	0.44 U	0.44 U	0.44 U	0.22 U	0.22 U	0.11 U	0.55 U	0.22 U	0.22 U	22 U	0.23 U	0.23 U	0.22 U	0.44 U	0.22 U	0.22 U
1,3-Dichlorobenzene	ug/m3	0.6 U	1.2 U	1.2 U	1.2 U	0.6 U	0.6 U	2.9	1.5 U	0.6 U	0.6 U	60 U	0.3 U	0.3 U	0.6 U	1.2 U	1.4 J	0.6 U
1,4-Dichlorobenzene	ug/m3	0.6 U	1.2 U	1.2 U	1.2 U	0.6 U	0.6 U	0.3 U	1.5 U	0.6 U	0.6 U	60 U	0.3 U	0.3 U	0.6 U	1.2 U	1.5 J	0.6 U
1,4-Dioxane	ug/m3																	
2-Butanone	ug/m3	0.59 J	2.5 J	1.3 J	1.9 J	3.1 J	1.6 J	10	6.3	9.4	5.5	330	1.9	2	2.5 J	0.52 J	12 U	27
2-Hexanone	ug/m3	0.41 U	0.82 U	0.82 U	0.82 U	0.41 U	0.41 U	0.2 U	1 U	0.4 U	0.4 U	13000	0.27	0.34	0.41 U	0.82 U	0.41 U	0.41 U
4-Ethyltoluene	ug/m3	0.49 U	0.98 U	0.98 U	0.98 U	0.49 U	0.49 U	2.1	1.3 U	0.5 U	0.5 U	50 U	0.25 U	0.25 U	0.49 U	0.98 U	0.49 U	9.5
4-Methyl-2-pentanone	ug/m3	0.41 U	0.82 U	0.82 U	0.82 U	0.41 U	0.41 U	5	1 U	0.4 U	0.4 U	40 U	0.2 U	0.2 U	0.41 U	0.82 U	0.41 U	28
Acetone	ug/m3	3.7 J	8.7 J	19 U	19 U	9.4 J	4.9 J	1200	11	19	12	430	3.6	5.7	21	19 U	3.5 J	71
Benzene	ug/m3	0.33	0.51 J	0.4 J	0.49 J	1.4	0.4	1.3	0.8 U	0.32 U	0.32 U	32 U	0.16 U	0.16 U	0.33	0.55 J	1.2	1.6
Benzyl chloride	ug/m3	0.52 U	1 U	1 U	1 U	0.52 U	0.52 U	0.26 U	1.3 U	0.52 U	0.52 U	52 U	0.26 U	0.26 U	0.52 U	1 U	0.52 U	0.52 U
Bromodichloromethane	ug/m3	1.6	1.3 U	1.3 U	1.3 U	0.67 U	0.67 U	0.33 U	1.7 U	0.66 U	0.66 U	66 U	0.33 U	0.33 U	0.67 U	1.3 U	0.67 U	0.67 U
Bromoform	ug/m3	1 U	2.1 U	2.1 U	2.1 U	1 U	1 U	0.51 U	2.6 U	1.1 U	1.1 U	110 U	0.51 U	0.51 U	1 U	2.1 U	1 U	1 U
Bromomethane	ug/m3	0.39 U	0.78 U	0.78 U	0.78 U	0.39 U	0.39 U	0.19 U	0.95 U	0.38 U	0.38 U	38 U	0.19 U	0.19 U	0.39 U	0.78 U	0.39 U	3.9 U
Carbon disulfide	ug/m3	3.1 U	6.2 U	6.2 U	6.2 U	3.1 U	3.1 U	0.16 U	0.8 U	4.1	27	250	0.16 U	0.2	3.1 U	6.2 U	3.1 U	3.1 U
Carbon tetrachloride	ug/m3	0.63 U	1.3 U	1.3 U	0.58 J	0.63 U	89	0.38	1.6 U	0.62 U	0.62 U	62 U	0.31 U	0.31 U	0.35 J	1.3 U	0.63 U	0.63 U
Chlorobenzene	ug/m3	0.46 U	0.92 U	0.92 U	0.92 U	0.46 U	0.46 U	0.23 U	1.2 U	0.46 U	0.46 U	46 U	0.23 U	0.23 U	0.46 U	0.92 U	0.46 U	0.46 U
Chloroethane	ug/m3	0.31	1.3	0.53 U	0.53 U	0.53 U	0.26 U	0.13 U	5100	1800	480	64	19	10	0.26 U	0.53 U	0.53 U	0.26 U
Chloroform	ug/m3	1.5	4.1	1.9	5.1	1.8	3.2	0.24 U	1.2 U	0.48 U	0.67	48 U	0.24 U	6.8	1.2	6.5	1.2	0.49 U
Chloromethane	ug/m3	5.7	0.83 U	0.83 U	0.83 U	0.41 U	0.41 U	0.59	0.5 U	0.2 U	0.2 U	23	0.1 U	0.1 U	0.41 U	0.83 U	0.41 U	0.41 U
cis-1,2-Dichloroethene	ug/m3	7.3	41	9.5	42	5.8	27	0.27	1 U	3.9	5200	820	230	570	8.7	54	1.2	2.3
cis-1,3-Dichloropropene	ug/m3	0.45 U	0.91 U	0.91 U	0.91 U	0.45 U	0.45 U	0.22 U	1.1 U	0.44 U	0.44 U	44 U	0.22 U	0.22 U	0.45 U	0.91 U	0.45 U	0.45 U
Cyclohexane	ug/m3	0.53	0.69 U	0.69 U	0.69 U	0.34 U	0.34 U	0.93	0.85 U	0.34 U	0.34 U	34 U	0.17 U	0.17 U	0.34 U	0.69 U	0.34 U	0.34 U
Dibromochloromethane	ug/m3	0.85 U	1.7 U	1.7 U	1.7 U	0.85 U	0.85 U	0.43 U	2.2 U	0.86 U	0.86 U	86 U	0.43 U	0.43 U	0.85 U	1.7 U	0.85 U	0.85 U
Dichlorodifluoromethane	ug/m3	1.3	2.2	2.3	2.2	0.49 U	0.49 U	0.76	4.1	3	2.4	50 U	1.7	1.9	2	2.2	0.49 U	0.49 U
Ethanol	ug/m3	5.9 J	16	12 J	14 J	25	25	740	36	25	9.8	110	0.38 U	2.8	4.7 J	15 U	11	360
Ethyl acetate	ug/m3	0.36 U	2.5	0.72 U	1.4 U	0.36 U	0.36 U	0.37 U	0.9 U	0.36 U	0.73 U	73 U	0.18 U	0.18 U	0.36 U	1.4 U	0.36 U	180
Ethylbenzene	ug/m3	0.43 U	0.87 U	0.87 U	0.87 U	1.1	0.43 U	10	1.1 U	0.44 U	0.44 U	44 U	0.22 U	0.22 U	0.43 U	0.87 U	1.1	33
Hexachlorobutadiene	ug/m3	1.1 U	2.1 U	2.1 U	2.1 U	2.1 U	1.1 U	1.1 U	5.4 U	2.2 U	2.2 U	220 U	0.53 U	0.53 U	1.1 U	2.1 U	2.1 U	1.1 U
Hexane	ug/m3	14 U	28 U	28 U	28 U	14 U	14 U	3	0.9 U	46	0.36 U	36 U	0.18 U	0.23	0.74 J	28 U	14 U	14 U
Isopropyl alcohol	ug/m3	0.66 J	1.6 J	20 U	20 U	2.2 J	9.8 U	450	2.9	3.1	47	290	0.25 U	1.4	9.8 U	20 U	9.8 U	230
m,p-Xylene	ug/m3	0.87 U	1.7 U	1.7 U	1.7 U	2.4	1	27	2.2 U	0.86 U	0.86 U	86 U	0.43 U	0.43 U	0.87 U	1.7 U	2.4	120
Methyl methacrylate	ug/m3	0.41 U	0.82 U	0.82 U	0.82 U	0.41 U	0.41 U								0.41 U	0.82 U	0.41 U	0.41 U
Methylene chloride	ug/m3	3.5 U	6.9 U	6.9 U	6.9 U	1.3 J	3.5 U	20	76	17	3	810	0.7 U	0.72	0.55 J	6.9 U	1.2 J	10
Methyl-t-butyl ether	ug/m3	0.36 U	0.72 U	0.72 U	0.72 U	0.36 U	0.36 U	0.18 U	0.9 U	0.36 U	0.36 U	36 U	0.18 U	0.18 U	0.36 U	0.72 U	0.36 U	0.36 U
Naphthalene	ug/m3																	
n-Heptane	ug/m3	0.41 U	0.82 U	0.82 U	0.82 U	0.41 U	0.41 U	1.8	1 U	0.4 U	0.4 U	40 U	0.2 U	0.2 U	0.41 U	0.82 U	0.41 U	15
o-Xylene	ug/m3	0.43 U	0.87 U	0.87 U	0.87 U	1.1	0.43 U	9.5	1.1 U	0.44 U	0.44 U	44 U	0.22 U	0.22 U	0.43 U	0.87 U	1.2	36
Propylene (Propene)	ug/m3	1.4 J	14 U	1.5 J	14 U	6.9 U	6.9 U	0.18 U	98	0.18 U	0.35 U	35 U	0.35 U	0.35 U	2.1 J	14 U	6.9 U	6.9 U
Styrene	ug/m3	0.43 U	0.85 U	0.85 U	0.85 U	0.43 U	0.43 U	3.4	1.1 U	0.42 U	0.42 U	42 U	0.21 U	0.21 U	0.43 U	0.85 U	0.43 U	10
Tetrachloroethene	ug/m3	66	260	66	220	20	110	0.72	1.7 U	1.1	0.68 U	68 U	0.52	1.9	19	3	10	7.7
Tetrahydrofuran	ug/m3	0.29 U	1.2 U	0.48 J	0.53 J	0.29 U	3.2	6.8	22	40	18	210	4.1	6.5	0.35	0.59 U	0.29 U	0.29 U
Toluene	ug/m3	0.36 J	1.3	0.72 J	1.1	2	1.8	29	0.95 U	0.65	0.38 U	38 U	0.19 U	0.36	0.28 J	0.39 J	2.1	340
trans-1,2-Dichloroethene	ug/m3	0.4 U	0.81	0.79 U	0.79 U	1.1 J	0.55	0.2 U	1 U	0.4 U	28	40 U	7.7	15	0.18 J	1.2	0.93 J	0.78
trans-1,3-Dichloropropene	ug/m3	0.45 U	0.91 U	0.91 U	0.91 U	0.45 U	0.45 U	0.22 U	1.1 U	0.44 U	0.44 U	44 U	0.22 U	0.22 U	0.45 U	0.91 U	0.45 U	0.45 U
Trichloroethene	ug/m3	180	670	160	800	29	520	2	11	16	2.7	54 U	1	1	250	1600	8.2	11
Trichlorofluoromethane	ug/m3	88	220	67	280	62	230	0.71	1.4 U	23	6700	84	180	210	42	280	2.2 J	44
Trichlorotrifluoroethane	ug/m3	3.1 U	6.1 U	6.1 U	0.64 J	3.1 U	3.1 U	1.3	1.9 U	0.76 U	0.76 U	76 U	0.38 U	0.51	0.74 J	0.64 J	3.1 U	3.1 U
Vinyl acetate	ug/m3	0.56 J	14 U	14 U	14 U	7 U	7 U	0.71 U	0.9 U	0.36 U	1.5 U	150 U	0.71 U	0.71 U	0.8 J	0.49 J	7 U	7 U
Vinyl chloride	ug/m3	0.26 U	0.51 U	0.51 U	0.51 U	0.26 U	0.26 U	0.13 U	30	13	4.5	26 U	0.13 U	0.13 U	0.26 U	0.51 U	0.26 U	0.26 U

Notes:  
NA - not available  
U - Not detected, value is the detection limit  
B - Compounds detected in method blank as well as field sample  
J - Indicates compound was detected at an estimated value.  
D - Result from diluted analyses  
ug/m3 - micrograms per cubic meter

Prepared By: AKN, 9/16/2019

Checked By: HWC, 9/16/2019