

July 29, 2011

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  
Second Quarter, 2011  
Retail Complex, Active Sub-Slab Depressurization System  
Former Gorham Manufacturing Facility  
333 Adelaide Avenue, Providence, Rhode Island  
AMEC Project No. 3650080114**

Dear Mr. Martella:

This letter report presents the results of quarterly compliance sampling and analysis conducted by AMEC E&I (formerly MACTEC Engineering and Consulting, Inc.) at the retail complex located at the Former Gorham Manufacturing Facility, 333 Adelaide Avenue, Providence, Rhode Island (the Site). The reporting period is from April 2011 through June 2011 and includes one quarterly compliance sampling event (June 2, 2011).

The sampling and analysis and this reporting were conducted consistent with the 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.

The small retail spaces consist of the eastern, central, and western retail spaces (Figure 1). The mitigation systems in the small retail spaces consist of one extraction well in each small retail space connected to individual radon-type fans, located at the north, or rear, of each small retail space.

### **Small Retail Spaces**

The quarterly monitoring event for the three small retail spaces, consistent with the requirements of the Orders of Approval, was completed on June 2, 2011.

Table 1 summarizes the analytical results at the small retail spaces for the baseline sampling event conducted prior to system start-up and all subsequent sampling events conducted after system start-up. Results of the 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. The laboratory report (11F0120) associated with the June 2, 2011 quarterly sampling event is provided in Appendix A of this letter report. The analytical laboratory's detection limits are provided in Appendix B.

The sampling event included an indoor air sample from each of the small retail spaces (locations IA-5, IA-6, and IA-7), one outdoor air reference sample (location AA-1), and one air sample collected from each of the three vapor extraction wells (EW-5, EW-6, and EW-7). The sampling locations are shown in Figure 1. The outdoor reference air sample (AA-1) was located at an upwind location during the sampling round. Sub-slab vacuum monitoring (pressure differential measurements) was also conducted at locations VMW-5, VMW-6, and VMW-7 in conjunction with the quarterly air sampling program. The vacuum monitoring results are tabulated in Table 2.

The following conclusions are based on Site observations and the data from Table 1.

- Indoor air sample results were in compliance with action levels for the quarterly sampling events in the center and western small retail spaces (sample locations IA-6 and IA-7). Results from the eastern small retail space (sample location IA-5) were not obtained due to a malfunction of the air sampling canister. Although the concentration of carbon tetrachloride in the samples collected from locations IA-6 and IA-7 during the quarterly sampling was slightly above the action level, carbon tetrachloride is not one of the compounds for which the vapor mitigation system was installed. In addition, carbon tetrachloride was detected in the ambient air slightly below the action level. It appears that the detection of carbon tetrachloride in indoor air is unrelated to the vapor intrusion pathway because it was not detected in the soil vapor. Thus, the

concentration of carbon tetrachloride above the action level does not constitute a violation of the action levels contained in the order. Also, the concentration of 1,2-dichloropropane in the sample collected at location IA-7 during the quarterly sampling was above the action level. However, it appears that the detection of 1,2-dichloropropane is unrelated to the vapor intrusion pathway because it was not detected in the soil vapor. In addition, 1,2-dichloropropane 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.

- The eastern small retail space (sample location IA-5) remains unoccupied.
- The center small retail space (sample location IA-6) remains unoccupied.
- The western small retail space (sample location IA-7) of the retail complex is occupied. The radon fan at this space had been continually operating since 2008 and failed on May 30, 2011. The replacement fan has been delivered and is scheduled to be installed on August 4, 2011.
- The mitigation systems are functioning as designed and are achieving desired results with respect to indoor quality in the three small retail units.

### **Large Retail Space**

The quarterly monitoring event for the large retail space, consistent with the requirements of the Orders of Approval, was completed on June 2, 2011. The sampling event was preceded by one week of operating the large retail space heating, ventilation, and air conditioning (HVAC) system with typical air exchanges required for this type of commercial space.

Table 3 summarizes the analytical results for the large retail space for the baseline sampling event conducted prior to system start-up and all subsequent sampling events conducted after system start-up. Results of the 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. The laboratory report (11F0120) associated with the June 2, 2011 quarterly sampling event is provided in Appendix A of this letter report. The analytical laboratory's detection limits are provided in Appendix B.

The 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), one outdoor air reference sample (location AA-1), and one air sample collected from the manifold where air from the four vapor extraction wells is collected (EW-Combined). The sampling locations are shown in Figure 1. The outdoor reference air sample (AA-1) was located at an upwind location. Sub-slab vacuum monitoring (pressure differential measurements) was also conducted at locations VMW-1 through VMW-4 in

conjunction with the air sampling program. The vacuum monitoring results for the large retail space are tabulated in Table 4.

The following conclusions are based on Site observations and the data from Table 3.

- Indoor air sample results were in compliance with action levels for the June 2011 quarterly sampling event in the large retail space (sample locations IA-1 through IA-4). Although the concentration of carbon tetrachloride in the samples collected from locations IA-2, IA-3, and IA-4, during the quarterly sampling in June 2011, was slightly above the action level, carbon tetrachloride is not one of the compounds for which the vapor mitigation system was installed. In addition, carbon tetrachloride was detected in the ambient air slightly below the action level. The concentration of carbon tetrachloride in soil vapor was not obtained because the sample from the manifold of the four extraction wells (sample location EW-Combined) was not collected due to a malfunction of the air sampling canister. Thus, the concentration of carbon tetrachloride above the action level does not constitute a violation of the action levels contained in the order.
- The mitigation system is functioning as designed and is achieving desired results with respect to indoor air quality in the large retail space.

### **ASD System Monitoring**

The ASD system performance is monitored monthly by Clean Harbors Environmental Services. There were three system shutdowns during the reporting period. The first shutdown occurred on April 25, 2011 for change-out of the carbon in the carbon vessels. The spent carbon was removed by Siemens Industry, Inc. (Siemens) and transported, under manifest, as hazardous waste and reactivated at Siemens facility in Darlington, Pennsylvania. The other two shutdowns occurred on June 10, 2011, for three days and on June 16, 2011 for approximately 10 hours. It was determined that the shutdowns were caused by severe thunderstorms that damaged the primary transformer which provided electrical power to the retail complex.

### **Next Reporting Period**

The next quarterly report (third quarter 2011) will include monitoring from July 2011 through September 2011. The report will be prepared and submitted to the Rhode Island Department of Environmental Management (RIDEM) in October 2011.

Please contact the undersigned at 781-245-6606 if we can provide additional information or answer any questions concerning these monitoring events and system adjustments.



Sincerely,  
AMEC



Philip Muller  
Senior Engineer



Michael Murphy  
Principal Scientist

Enclosures: Table 1. Summary of Analytical Results – Air Sampling for Small Retail Spaces  
Table 2. Vacuum Monitoring Results – Small Retail Spaces  
Table 3. Summary of Analytical Results – Air Sampling for Large Retail Space  
Table 4. Vacuum Monitoring Results – Large Retail Space

Figure 1 – Vapor Mitigation Sample Locations

Appendix A – Laboratory Reports  
Appendix B – Analytical Laboratory Detection Limits

cc: T. Deller, City of Providence  
G. Simpson, Textron, Inc. (Electronic)  
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J. Morgan, The Stop & Shop Supermarket Co., LLC  
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## **TABLES**

**Table 1.**  
**Summary of Analytical Results - Air Sampling for Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Outdoor Air Reference Locations												
	AA-1 1/16/2009	AA-1- 020309 2/3/2009	AA-1- 021109 2/11/2009	AA-1- 021809 2/18/2009	AA-1- 022609 2/26/2009	AA-1- 030609 3/6/2009	AA-1- 033109 3/31/2009	AA-1- 041409 4/14/2009	AA-1- 042409 4/24/2009	AA-1- 051509 5/15/2009	AA-1- 061109 6/11/2009	AA-1- 091709 9/17/2009	AA-1- 092409 9/24/2009
1,1,1-Trichloroethane	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
1,1,2,2-Tetrachloroethane	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
1,1,2-Trichloroethane	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
1,1-Dichloroethane	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
1,1-Dichloroethene	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
1,2,4-Trichlorobenzene	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
1,2,4-Trimethylbenzene	0.25 U	0.28	0.52	1.8	0.25 U	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.29	0.3	0.25 U
1,2-Dibromoethane (EDB)	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
1,2-Dichlorobenzene	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
1,2-Dichloroethane	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
1,2-Dichloropropane	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
1,2-Dichlorotetrafluoroethane	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
1,3,5-Trimethylbenzene	0.25 U	0.25 U	0.25 U	0.5	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
1,3-Butadiene	0.11 U	0.11 U	0.17	1.3	0.11 U	0.11 U	0.11 U	0.08 U	0.11 U	0.11 U	0.11 U	0.23 U	0.23 U
1,3-Dichlorobenzene	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
1,4-Dichlorobenzene	0.3 U	0.3 U	0.3 U	0.53	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
1,4-Dioxane													
2-Butanone	0.58	1.2	2.4	3.2	1.6	0.67	1.7	0.11 U	1.6	1.6	1.1	1.7	0.84
2-Hexanone	0.2 U	0.22	0.57	0.35	0.2 U	0.2 U	0.2 U	0.14 U	0.26	0.39	0.2 U	0.34	0.2 U
4-Ethyltoluene	0.25 U	0.25 U	0.25 U	0.6	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
4-Methyl-2-pentanone	0.2 U	0.2 U	0.27	0.63	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
Acetone	7.3	8	15	22	8.4	5.9	12	1.1	27	9.5	10	10	9.6
Benzene	0.69	0.62	1.3	4.7	0.43	0.69	0.46	0.12 U	0.3	0.4	0.49	0.38	0.35
Benzyl chloride	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
Bromodichloromethane	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
Bromoform	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
Bromomethane	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
Carbon disulfide	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
Carbon tetrachloride	0.38	0.44	0.52	0.56	0.43	0.61	0.47	0.22 U	0.41	0.78	0.43	0.4	0.4
Chlorobenzene	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
Chloroethane	0.13 U	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
Chloroform	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
Chloromethane	1.1	0.9	1.4	1.5	1.1	1.1	1.3	1.1	1.2	1.1	1.2	0.85	1.1
cis-1,2-Dichloroethene	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
cis-1,3-Dichloropropene	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
Cyclohexane	0.17 U	0.17 U	0.35	1.1	0.17 U	0.17 U	0.17 U	0.12 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Dibromochloromethane	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
Dichlorodifluoromethane	2	2.2	2.6	2.7	2.6	2.6	2.8	2	2.5	2.7	2.6	2.1	2.1
Ethanol	4	5.4	10	47	4.3	3.5	4.7	0.81	4.9	4.8	8.6	6.6	4.6
Ethyl acetate	0.37 U	0.37 U	0.18 U	0.31	0.37 U	0.18 U	0.18 U	0.26 U	0.37 U	0.18 U	0.18 U	0.18 U	0.18 U
Ethylbenzene	0.22 U	0.25	0.52	2	0.22 U	0.22 U	0.22 U	0.16 U	0.22 U	0.22 U	0.24	0.22 U	0.23
Hexachlorobutadiene	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	1.1 U	1.1 U	0.53 U	0.53 U
Hexane	1.5	0.75	1.1	2.9	0.38	2.8	2.2	0.13 U	0.56	0.37	0.59	0.48	1.4
Isopropyl alcohol	1.4	1.4	1.8	4.3	1.4	0.67	1.4	0.18 U	14	1	2.5	2.8	0.87
m,p-Xylene	0.43 U	0.72	1.4	6.4	0.44	0.43 U	0.43 U	0.31 U	0.43 U	0.49	0.73	0.62	0.59

**Table 1.**  
**Summary of Analytical Results - Air Sampling for Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Outdoor Air Reference Locations												
	AA-1 1/16/2009	AA-1- 020309 2/3/2009	AA-1- 021109 2/11/2009	AA-1- 021809 2/18/2009	AA-1- 022609 2/26/2009	AA-1- 030609 3/6/2009	AA-1- 033109 3/31/2009	AA-1- 041409 4/14/2009	AA-1- 042409 4/24/2009	AA-1- 051509 5/15/2009	AA-1- 061109 6/11/2009	AA-1- 091709 9/17/2009	AA-1- 092409 9/24/2009
Methyl methacrylate													
Methylene chloride	5.5	3.1	0.65	1.5	0.78	7.4	15	2.1	2.8	1.7	1.9	0.7 U	4.2
Methyl-t-butyl ether	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.13 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
n-Heptane	0.2 U	0.27	0.92	1.6	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.4	0.23	0.2 U	0.2 U
o-Xylene	0.22 U	0.27	0.53	2.2	0.22 U	0.22 U	0.22 U	0.16 U	0.22 U	0.24	0.27	0.23	0.22 U
Propylene (Propene)	0.18 U	0.18 U	0.09 U	0.09 U	0.18 U	0.09 U	0.09 U	0.13 U	0.18 U	0.09 U	0.09 U	0.35 U	0.35 U
Styrene	0.21 U	0.21 U	0.21 U	0.28	0.21 U	0.21 U	0.21 U	0.15 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Tetrachloroethene	0.34 U	0.34 U	0.73	0.77	0.34 U	0.34 U	0.34 U	0.24 U	0.34 U	0.34 U	0.34 U	0.52	0.34 U
Tetrahydrofuran	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.11 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	0.94	1.5	3.2	14	0.71	0.99	0.82	0.14 U	0.72	2.6	2.1	1.9	2
trans-1,2-Dichloroethene	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
trans-1,3-Dichloropropene	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
Trichloroethene	0.27 U	0.27 U	0.27 U	0.39	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
Trichlorofluoromethane	1.3	1.2	1.7	2.4	1.5	2	1.7	0.92	1.3	1.5	2	1.1	1.4
Trichlorotrifluoroethane	0.68	0.53	0.5	0.47	0.64	0.48	0.51	0.27 U	0.64	0.67	0.56	0.47	0.49
Vinyl acetate	0.71 U	0.71 U	0.18 U	0.18 U	0.71 U	0.18 U	0.18 U	0.5 U	0.71 U	0.18 U	0.18 U	0.71 U	0.71 U
Vinyl chloride	0.13 U	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



**Table 1.**  
**Summary of Analytical Results - Air Sampling for Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Outdoor Air Reference Locations														
	AA-1-100109 10/1/2009	AA-1-100809 10/8/2009	AA-1-122909 12/29/2009	AA-1-012810 1/28/2010	AA-1-020510 2/5/2010	AA-1-021210 2/12/2010	AA-1-021910 2/19/2010	AA-1-032610 3/26/2010	AA-1-043010 4/30/2010	AA-1-052810 5/28/2010	AA-1-070110 7/1/2010	AA-1-091610 9/16/2010	AA-1-120710 12/7/2010	AA-1-021711 2/17/2011	AA-1-060211 6/2/2011
1,1,1-Trichloroethane	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
1,1,1,2-Tetrachloroethane	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	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	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	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	0.37 U	0.37 U	0.75 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
1,2,4-Trimethylbenzene	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	0.94	0.25 U	1.1	0.25 U
1,2-Dibromoethane (EDB)	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	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	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	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	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	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	0.28	0.25 U	0.33	0.25 U
1,3-Butadiene	0.23 U	0.23 U	0.11 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	0.29	0.11 U	0.11 U	0.11 U
1,3-Dichlorobenzene	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	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															
2-Butanone	1.2	1.2	2	0.81	1.6	1.6	0.88	1.5	1.4	2.4	2.3	2.7	0.37	1.8 B	2.9 U
2-Hexanone	0.33	0.23	0.2 U	0.2 U	0.32	0.2 U	0.2 U	0.29	0.29	0.49	0.49	0.41	0.2 U	0.2 U	4.1 U
4-Ethyltoluene	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	0.3	0.25 U	0.34	0.25 U
4-Methyl-2-pentanone	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.34	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.8	0.2 U	0.2 U	0.2 U
Acetone	5.4	17	11	3.5	7.6	5	3.7	9.5	12	20	13	14	5.7 B	19 B	8.7 B
Benzene	0.25	0.2	0.42	0.79	0.68	0.63	0.41	0.69	0.35	0.19	0.16 U	1.2	0.28	2.3	0.16 U
Benzyl chloride	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	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
Bromoform	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
Bromomethane	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	0.16 U	0.16 U	0.16 U	0.28	0.16 U	0.16 U	0.44	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.38	0.16 U	0.16 U
Carbon tetrachloride	0.43	0.46	0.39	0.42	0.39	0.31 U	0.43	0.49	0.47	0.52	0.51	0.43	0.42	0.48	0.53
Chlorobenzene	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	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	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	0.97	0.96	1.6	1.1	1.2	1.3	1.1	1.4	0.78	1.1	0.96	0.99	0.94	1	0.96
cis-1,2-Dichloroethene	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	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	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	0.46	0.17 U	0.17 U	0.17 U
Dibromochloromethane	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	2.2	2.1	2.1	2.3	2.4	2.5	2.9	1.8	2.1	2.5	2.4	2.9	1.9	3.1	1.9
Ethanol	3.9	4.9	3.8	5.4	5.1	7.2	1.2	4.9	4	3.3	4	14	2.3	12	2.7
Ethyl acetate	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	1.1	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	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	0.82	1.4	0.22 U	1.1	0.22 U
Hexachlorobutadiene	0.53 U	0.53 U	1.1 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
Hexane	0.45	4.5	0.62	0.36	0.53	0.91	0.24	0.23	1.1	0.51	0.37	1.2	0.35 U	3.3	0.88
Isopropyl alcohol	0.63	0.25 U	0.54	0.56	2.7	1.5	0.8	0.73	0.69	1.6	0.79	0.25 U	0.29	2.4	1.2 U
m,p-Xylene	0.43 U	0.43 U	0.43 U	0.43 U	0.5	0.47	0.43 U	0.49	0.43 U	0.43 U	2.2	3.7	0.43 U	3.3	0.43 U

**Table 1.**  
**Summary of Analytical Results - Air Sampling for Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Outdoor Air Reference Locations														
	AA-1-100109 10/1/2009	AA-1-100809 10/8/2009	AA-1-122909 12/29/2009	AA-1-012810 1/28/2010	AA-1-020510 2/5/2010	AA-1-021210 2/12/2010	AA-1-021910 2/19/2010	AA-1-032610 3/26/2010	AA-1-043010 4/30/2010	AA-1-052810 5/28/2010	AA-1-070110 7/1/2010	AA-1-091610 9/16/2010	AA-1-120710 12/7/2010	AA-1-021711 2/17/2011	AA-1-060211 6/2/2011
Methyl methacrylate													0.2 U	0.48	0.2 U
Methylene chloride	0.7 U	23	4.6	1.3	1.9	1.7	0.7 U	0.7 U	0.7 U	0.35 U	1.1	1.1	0.66	3	2.3
Methyl-t-butyl ether	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
n-Heptane	0.2 U	0.2 U	0.2 U	0.26	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.91	0.2 U	0.95	0.2 U
o-Xylene	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	0.46	1.2	0.22 U	1.1	0.22 U
Propylene (Propene)	0.18 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	0.87 U	0.87 U	1.9	0.86 U	0.86 U
Styrene	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
Tetrachloroethene	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	0.49	0.34 U	5.3
Tetrahydrofuran	1.2	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.19	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	0.61	0.5	0.78	0.94	0.64	0.97	0.46	1.1	0.75	0.63	0.57	10	0.19 U	5.3	0.52
trans-1,2-Dichloroethene	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
trans-1,3-Dichloropropene	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
Trichloroethene	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.3	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
Trichlorofluoromethane	1.2	1.5	2.2	1.2	1.2	1.6	1.5	1.5	1.2	1.4	1.3	11	1.2	1.7	1.5
Trichlorotrifluoroethane	0.45	0.46	0.54	0.49	0.55	0.54	0.54	0.62	0.45	0.58	0.56	0.44	0.56	0.66	0.69
Vinyl acetate	0.71 U	0.71 U	0.36 U	0.71 U	0.71 U	0.71 U	0.71 U	0.36 U	0.71 U	0.18 U	0.18 U	0.36 U	0.35 U	0.18 U	3.5 U
Vinyl chloride	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



**Table 1.**  
**Summary of Analytical Results - Air Sampling for Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Extraction Well - Eastern Small Retail Space															
	EW-5-020309 2/3/2009	EW-5-021109 2/11/2009	EW-5-021809 2/18/2009	EW-5-022609 2/26/2009	EW-5-030609 3/6/2009	EW-5-041409 4/14/2009	EW-5-051509 5/15/2009	EW-5-061109 6/11/2009	EW-5-091709 9/17/2009	EW-5-122909 12/29/2009	EW-5-032610 3/26/2010	EW-5-070110 7/1/2010	EW-5-091610 9/16/2010	EW-5-120710 12/7/2010	EW-5-021711 2/17/2011	EW-5-060211 6/2/2011
1,1,1-Trichloroethane	190000	41000	17000	7100	1800	2600	3100	1900	3500	920	540	550	460	210 D	400 D	340 D
1,1,2,2-Tetrachloroethane	6.8 U	6.8 U	6.8 U	6.8 U	1.7 U	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 UD	1.4 UD	6.9 UD
1,1,2-Trichloroethane	5.4 U	5.4 U	5.4 U	5.4 U	1.4 U	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 UD	1.1 UD	5.5 UD
1,1-Dichloroethane	11000	1900	890	770	190	360	450	430	230	100	50	53	42	29 D	34 D	33 D
1,1-Dichloroethene	2500	290	130	190	61	160	160	160	98	30	18	21	15	13 D	15 D	11 D
1,2,4-Trichlorobenzene	7.4 U	7.4 U	7.4 U	7.4 U	1.9 U	74 U	3.7 U	3.7 U	3.7 U	7.5 U	15 U	3.7 U	7.4 U	1.5 UD	1.5 UD	7.4 UD
1,2,4-Trimethylbenzene	5 U	5 U	5 U	5 U	1.3 U	50 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	5 U	0.98 UD	0.98 UD	4.9 UD
1,2-Dibromoethane (EDB)	7.6 U	7.6 U	7.6 U	7.6 U	1.9 U	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 UD	1.5 UD	7.7 UD
1,2-Dichlorobenzene	6 U	6 U	6 U	6 U	1.5 U	60 U	3 U	3 U	3 U	3 U	6 U	3 U	6 U	1.2 UD	1.2 UD	6 UD
1,2-Dichloroethane	4 U	4 U	4 U	4 U	1 U	40 U	2 U	2 U	2 U	2 U	4 U	2 U	4 U	0.81 UD	0.81 UD	4 UD
1,2-Dichloropropane	4.6 U	4.6 U	4.6 U	4.6 U	1.2 U	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 UD	0.92 UD	4.6 UD
1,2-Dichlorotetrafluoroethane	7 U	7 U	7 U	7 U	1.8 U	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	5 U	5 U	5 U	5 U	1.3 U	50 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	5 U	0.98 UD	0.98 UD	4.9 UD
1,3-Butadiene	2.2 U	2.2 U	2.2 U	2.2 U	0.55 U	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 UD	0.44 UD	2.2 UD
1,3-Dichlorobenzene	6 U	6 U	6 U	6 U	1.5 U	60 U	3 U	3 U	3 U	3 U	6 U	3 U	6 U	1.2 UD	1.2 UD	6 UD
1,4-Dichlorobenzene	6 U	6 U	6 U	6 U	1.5 U	60 U	3 U	3 U	3 U	3 U	6 U	3 U	6 U	1.2 UD	1.2 UD	6 UD
1,4-Dioxane																
2-Butanone	6.3	89	75	170	3700	64000	100000	230000	110000	7800	18000	28000	15000	4000 D	7200 BD	17000 D
2-Hexanone	4 U	4 U	4 U	4 U	1 U	40 U	2.7	2 U	2 U	2 U	4 U	2 U	4 U	0.82 UD	0.82 UD	82 UD
4-Ethyltoluene	5 U	5 U	5 U	5 U	1.3 U	50 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	5 U	0.98 UD	0.98 UD	4.9 UD
4-Methyl-2-pentanone	4 U	4 U	4 U	4 U	1 U	40 U	2 U	2 U	2 U	2 U	4 U	2 U	4 U	0.82 UD	0.82 UD	4.1 UD
Acetone	530	32	52	29	460	5600	14000	6900	9200	1700	3200	6000	4500	2000 BD	1800 BD	2200 BD
Benzene	13	12	6.2	4.8	5.6	32 U	11	7.1	11	6.3	5.5	8.2	5	4.2 D	4.5 D	4.2 D
Benzyl chloride	5.2 U	5.2 U	5.2 U	5.2 U	1.3 U	52 U	2.6 U	2.6 U	2.6 U	2.6 U	5.2 U	2.6 U	5.2 U	1 UD	1 UD	5.2 UD
Bromodichloromethane	6.6 U	6.6 U	6.6 U	6.6 U	1.7 U	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 UD	1.3 UD	6.7 UD
Bromoform	11 U	11 U	11 U	11 U	2.6 U	110 U	5.1 U	5.1 U	5.1 U	5.1 U	11 U	5.1 U	11 U	2.1 UD	2.1 UD	10 UD
Bromomethane	3.8 U	3.8 U	3.8 U	3.8 U	0.95 U	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 UD	0.78 UD	3.9 UD
Carbon disulfide	3.2 U	3.2 U	3.2 U	3.2 U	0.8 U	230	4	5.4	8.2	2.9	5.7	12	14	8 D	15 D	22 D
Carbon tetrachloride	6.2 U	6.2 U	6.2 U	6.2 U	1.6 U	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 UD	1.3 UD	6.3 UD
Chlorobenzene	4.6 U	4.6 U	4.6 U	4.6 U	1.2 U	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 UD	0.92 UD	4.6 UD
Chloroethane	260	23	16	11	4.5	26 U	11	15	7	6.5	3.5	3.6	5.5	3.1 D	3.4 D	2.6 UD
Chloroform	83	32	20	16	2.8	48 U	7.2	6.5	5.8	2.6	4.8 U	2.4 U	4.8 U	1.1 D	1.2 D	4.9 UD
Chloromethane	2 U	2 U	2 U	2 U	0.5 U	20 U	1 U	1 U	1 U	1 U	2 U	1 U	2 U	0.41 UD	0.41 UD	2.1 UD
cis-1,2-Dichloroethene	2900	710	400	410	100	150	270	250	170	58	32	43	31	17 D	27 D	27 D
cis-1,3-Dichloropropene	4.4 U	4.4 U	4.4 U	4.4 U	1.1 U	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 UD	0.91 UD	4.5 UD
Cyclohexane	3.4 U	3.4 U	3.4 U	3.4 U	0.85 U	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 UD	0.69 UD	3.4 UD
Dibromochloromethane	8.6 U	8.6 U	8.6 U	8.6 U	2.2 U	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 UD	1.7 UD	8.5 UD
Dichlorodifluoromethane	5 U	5 U	5 U	5 U	2.7	50 U	3	3.2	2.5 U	2.5 U	5 U	2.5	5 U	2.4 D	3.7 D	4.9 UD
Ethanol	320	36	46	33	22	130	30	26	3.8 U	45	28	68	89	23 D	19 D	24 JD
Ethyl acetate	7.3 U	3.6 U	3.6 U	7.3 U	0.9 U	73 U	1.8 U	1.8 U	1.8 U	1.8 U	3.6 U	1.8 U	6.8	3.4 D	0.72 UD	3.8 D
Ethylbenzene	4.4 U	4.4 U	4.4 U	4.4 U	1.1 U	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 UD	0.87 UD	4.3 UD
Hexachlorobutadiene	22 U	22 U	22 U	22 U	5.4 U	220 U	11 U	11 U	5.3 U	11 U	22 U	5.3 U	11 U	2.1 UD	2.1 UD	11 UD
Hexane	5	3.6 U	3.6 U	3.6 U	2.3	36 U	3.3	1.8 U	1.8 U	1.8 U	3.6 U	1.8 U	7.1 U	1.4 UD	0.7 UD	3.5 UD
Isopropyl alcohol	190	5.1	4.6	5 U	4.6	290	24	57	35	2.5 U	20	54	59	11 D	13 D	25 UD
m,p-Xylene	8.6 U	8.6 U	8.6 U	8.6 U	2.2 U	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 UD	1.7 UD	8.7 UD

**Table 1.  
Summary of Analytical Results - Air Sampling for Small Retail Spaces  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Extraction Well - Eastern Small Retail Space																
	EW-5-020309 2/3/2009	EW-5-021109 2/11/2009	EW-5-021809 2/18/2009	EW-5-022609 2/26/2009	EW-5-030609 3/6/2009	EW-5-041409 4/14/2009	EW-5-051509 5/15/2009	EW-5-061109 6/11/2009	EW-5-091709 9/17/2009	EW-5-122909 12/29/2009	EW-5-032610 3/26/2010	EW-5-070110 7/1/2010	EW-5-091610 9/16/2010	EW-5-120710 12/7/2010	EW-5-021711 2/17/2011	EW-5-060211 6/2/2011	
Methyl methacrylate																0.82 UD	4.1 UD
Methylene chloride	7.8	7 U	9.6	7 U	12	720	21	15	7 U	25	14 U	8.6	7 U	1.4 UD	2 D	6.9 UD	
Methyl-t-butyl ether	3.6 U	3.6 U	3.6 U	3.6 U	0.9 U	36 U	1.8 U	1.8 U	1.8 U	1.8 U	3.6 U	1.8 U	3.6 U	0.72 UD	0.72 UD	3.6 UD	
n-Heptane	4 U	4 U	4 U	4 U	1 U	40 U	2 U	2 U	2 U	2 U	4 U	2 U	4 U	0.82 UD	0.82 UD	4.1 UD	
o-Xylene	4.4 U	4.4 U	4.4 U	4.4 U	1.1 U	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 UD	0.87 UD	4.3 UD	
Propylene (Propene)	3.5 U	1.8 U	1.8 U	3.5 U	0.45 U	35 U	0.9 U	0.9 U	3.5 U	3.5 U	6.9 U	8.7 U	6.9 U	1.4 UD	3.4 UD	17 UD	
Styrene	4.2 U	17	4.2 U	4.2 U	1.7	42 U	2.2	2.1 U	2.1 U	2.1 U	4.2 U	2.1 U	4.2 U	0.85 UD	0.85 UD	4.3 UD	
Tetrachloroethene	210	310	190	97	8	68 U	21	25	19	8.9	6.8 U	6.7	6.8 U	4 D	4100 D	6.8 UD	
Tetrahydrofuran	16	110	69	140	2200	42000	61000	150000	94000	9700	23000	37000	29000	8200 D	11000 D	30000 D	
Toluene	13	4.7	3.8 U	3.8 U	0.95 U	38 U	2.2	3.4	1.9 U	1.9 U	3.8 U	1.9 U	3.8 U	0.75 UD	1.6 D	3.8 UD	
trans-1,2-Dichloroethene	26	6.1	4 U	4.7	1 U	40 U	2.6	2.8	2 U	2 U	4 U	2 U	4 U	0.79 UD	0.79 UD	4 UD	
trans-1,3-Dichloropropene	4.4 U	4.4 U	4.4 U	4.4 U	1.1 U	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 UD	0.91 UD	4.5 UD	
Trichloroethene	51000	20000	14000	8900	2400	3800	4400	2700	6800	1600	1100	1200	1100	410 D	660 D	790 D	
Trichlorofluoromethane	3500	200	120	67	16	56 U	27	41	2.8 U	53	7	7.4	5.8	5.1 D	5.8 D	5.6 UD	
Trichlorotrifluoroethane	7.6 U	7.6 U	7.6 U	7.6 U	1.9 U	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 UD	1.5 UD	7.7 UD	
Vinyl acetate	15 U	3.6 U	3.6 U	15 U	0.9 U	150 U	1.8 U	1.8 U	7.1 U	3.6 U	7.1 U	1.8 U	7.1 U	1.4 UD	0.7 UD	70 UD	
Vinyl chloride	2.6 U	2.6 U	2.6 U	2.6 U	0.65 U	26 U	1.3 U	5.3	1.3 U	3	3.4	3.1	4.3	2.4 D	3.7 D	3.3 D	



**Table 1.**  
**Summary of Analytical Results - Air Sampling for Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Extraction Well - Center Small Retail Space														
	EW-6-020309 2/3/2009	EW-6-021109 2/11/2009	EW-6-021809 2/18/2009	EW-6-022609 2/26/2009	EW-6-030609 3/6/2009	EW-6-041409 4/14/2009	EW-6-051509 5/15/2009	EW-6-061109 6/11/2009	EW-6-091709 9/17/2009	EW-6-122909 12/29/2009	EW-6-070110 7/1/2010	EW-6-091610 9/16/2010	EW-6-120710 12/7/2010	EW-6-021711 2/17/2011	EW-6-060211 6/2/2011
1,1,1-Trichloroethane	69000	32000	21000	16000	16000	5600	8200	5700	5400	1100	430	390	130 D	0.55 UD	80
1,1,2,2-Tetrachloroethane	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 UD	0.69 UD	6.9 U
1,1,2-Trichloroethane	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 UD	0.55 UD	5.5 U
1,1-Dichloroethane	5200	2500	2100	2200	1600	780	1200	1100	930	580	47	38	21 D	0.4 UD	12
1,1-Dichloroethene	850	210	100	110	55	74	87	83	80	6.4	3.5	4 U	0.4 UD	0.4 UD	4 U
1,2,4-Trichlorobenzene	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 UD	0.74 UD	7.4 U
1,2,4-Trimethylbenzene	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 UD	0.49 UD	4.9 U
1,2-Dibromoethane (EDB)	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 UD	0.77 UD	7.7 U
1,2-Dichlorobenzene	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 UD	0.6 UD	6 U
1,2-Dichloroethane	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 UD	0.4 UD	4 U
1,2-Dichloropropane	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 UD	0.46 UD	4.6 U
1,2-Dichlorotetrafluoroethane	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	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 UD	0.49 UD	4.9 U
1,3-Butadiene	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 UD	0.22 UD	2.2 U
1,3-Dichlorobenzene	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 UD	0.6 UD	6 U
1,4-Dichlorobenzene	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 UD	0.6 UD	6 U
1,4-Dioxane															
2-Butanone	120	280	300	130	97	160	37	65	8.7	23	1800	110	20 D	1.9 BD	59 U
2-Hexanone	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 UD	0.41 UD	82 U
4-Ethyltoluene	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 UD	0.49 UD	4.9 U
4-Methyl-2-pentanone	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 UD	0.41 UD	4.1 U
Acetone	580	64	81	33	22	410	16	20	4.8 U	27	490	70	15 BD	15 BD	48 U
Benzene	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 D	1.1 D	3.2 U
Benzyl chloride	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 UD	0.52 UD	5.2 U
Bromodichloromethane	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 UD	0.67 UD	6.7 U
Bromoform	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 UD	1 UD	10 U
Bromomethane	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 UD	0.39 UD	3.9 U
Carbon disulfide	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 D	0.31 UD	11 D
Carbon tetrachloride	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 UD	0.63 UD	6.3 UD
Chlorobenzene	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 UD	0.46 UD	4.6 UD
Chloroethane	140	50	34	18	13	26 U	13	14	11	4	1.3 U	2.8	0.26 UD	0.26 UD	2.6 UD
Chloroform	42	24	19	29	21	50	14	12	12	7.2	3.7	4.8 U	2.4 D	0.49 UD	4.9 UD
Chloromethane	2 U	2 U	2 U	2 U	2 U	34	1 U	1 U	1 U	1 U	38	40	0.21 UD	1 D	16 D
cis-1,2-Dichloroethene	700	360	220	250	150	120	190	170	130	36	11	7.9	2.3 D	0.4 UD	4 UD
cis-1,3-Dichloropropene	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 UD	0.45 UD	4.5 UD
Cyclohexane	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 UD	0.34 UD	3.4 UD
Dibromochloromethane	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 UD	0.85 UD	8.5 UD
Dichlorodifluoromethane	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 D	3.6 D	4.9 UD
Ethanol	360	38	73	38	25	110	18	14	6.7	18	15	19 U	4.6 D	11 D	38 UD
Ethyl acetate	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 UD	0.36 UD	3.6 UD
Ethylbenzene	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 UD	0.43 UD	4.3 UD
Hexachlorobutadiene	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 UD	1.1 UD	11 UD
Hexane	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	7.1 U	0.7 UD	1.3 D	3.5 UD
Isopropyl alcohol	210	18	33	15	10	230	8.2	11	20	2.5 U	1.2 U	9.4	0.49 UD	2.9 D	25 UD
m,p-Xylene	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 UD	0.94 D	8.7 UD

**Table 1.  
Summary of Analytical Results - Air Sampling for Small Retail Spaces  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Extraction Well - Center Small Retail Space															
	EW-6-020309 2/3/2009	EW-6-021109 2/11/2009	EW-6-021809 2/18/2009	EW-6-022609 2/26/2009	EW-6-030609 3/6/2009	EW-6-041409 4/14/2009	EW-6-051509 5/15/2009	EW-6-061109 6/11/2009	EW-6-091709 9/17/2009	EW-6-122909 12/29/2009	EW-6-070110 7/1/2010	EW-6-091610 9/16/2010	EW-6-120710 12/7/2010	EW-6-021711 2/17/2011	EW-6-060211 6/2/2011	
Methyl methacrylate															0.41 UD	4.1 UD
Methylene chloride	7 U	7 U	7.5	7 U	7 U	780	12	15	7 U	27	10	7 U	1.3 D	2.8 D	6.9 UD	
Methyl-t-butyl ether	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 UD	0.36 UD	3.6 UD	
n-Heptane	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 UD	0.41 UD	4.1 UD	
o-Xylene	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 UD	0.43 UD	4.3 UD	
Propylene (Propene)	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 UD	1.7 UD	17 UD	
Styrene	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 UD	0.43 UD	4.3 UD	
Tetrachloroethene	330	290	130	290	190	300	190	210	250	68	34	23	8.1 D	1.2 D	6.8 UD	
Tetrahydrofuran	75	480	260	730	570	130	110	87	9.1	31	42000	53000	480 D	0.29 UD	13000 D	
Toluene	12	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	0.38 UD	2.4 D	3.8 UD	
trans-1,2-Dichloroethene	12	6.3	4.2	6.4	4 U	40 U	2.6	2.7	2	2.1	2 U	4 U	0.4 UD	0.4 UD	4 UD	
trans-1,3-Dichloropropene	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 UD	0.45 UD	4.5 UD	
Trichloroethene	12000	6900	4200	4400	4800	3900	5400	4700	6100	2000	730	650	250 D	0.54 UD	190 D	
Trichlorofluoromethane	2300	870	630	350	250	150	230	440	700	320	6.7	25	28 D	1.7 D	11 D	
Trichlorotrifluoroethane	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 UD	0.86 D	7.7 UD	
Vinyl acetate	15 U	3.6 U	3.6 U	15 U	3.6 U	150 U	1.8 U	1.8 U	7.1 U	3.6 U	1.8 U	7.1 U	0.7 UD	0.35 UD	70 UD	
Vinyl chloride	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	26 U	1.3 U	1.3 U	1.3 U	1.3 U	1.7	2.9	0.26 UD	0.26 UD	2.6 UD	



**Table 1.**  
**Summary of Analytical Results - Air Sampling for Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Extraction Well - Western Small Retail Space															
	EW-7-020309 2/3/2009	EW-7-021109 2/11/2009	EW-7-021809 2/18/2009	EW-7-022609 2/26/2009	EW-7-030609 3/6/2009	EW-7-041409 4/14/2009	EW-7-051509 5/15/2009	EW-7-061109 6/11/2009	EW-7-091709 9/17/2009	EW-7-122909 12/29/2009	EW-7-032610 3/26/2010	EW-7-070110 7/1/2010	EW-7-091610 9/16/2010	EW-7-120710 12/7/2010	EW-7-021711 2/17/2011	EW-7-060211 6/2/2011
1,1,1-Trichloroethane	5600	8500	7800	8200	8100	1600	3600	2600	1400	340	51	250	290	160 D	110 D	5.5 UD
1,1,2,2-Tetrachloroethane	6.8 U	1.4 U	1.7 U	1.7 U	1.7 U	6.8 U	3.4 U	3.4 U	3.4 U	3.4 U	0.68 U	0.68 U	0.68 U	0.69 UD	0.69 UD	6.9 UD
1,1,2-Trichloroethane	5.4 U	1.1 U	1.4 U	1.4 U	1.4 U	5.4 U	2.7 U	2.7 U	2.7 U	2.7 U	0.54 U	0.54 U	0.54 U	0.55 UD	0.55 UD	5.5 UD
1,1-Dichloroethane	1700	1800	1600	2100	1700	590	1000	1100	970	470	85	320	340	220 D	150 D	45 D
1,1-Dichloroethene	14	15	8.5	9.4	6.6	4 U	4.2	4.2	4.5	2 U	0.4 U	0.81	0.94	0.63 D	0.4 UD	4 UD
1,2,4-Trichlorobenzene	7.4 U	1.5 U	1.9 U	1.9 U	1.9 U	7.4 U	3.7 U	3.7 U	3.7 U	7.5 U	1.5 U	0.74 U	0.74 U	0.74 UD	0.74 UD	7.4 UD
1,2,4-Trimethylbenzene	5 U	1 U	1.3 U	1.3 U	1.3 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5	0.5 U	0.5 U	0.49 UD	0.49 UD	4.9 UD
1,2-Dibromoethane (EDB)	7.6 U	1.6 U	1.9 U	1.9 U	1.9 U	7.6 U	3.8 U	3.8 U	3.8 U	3.8 U	0.76 U	0.76 U	0.76 U	0.77 UD	0.77 UD	7.7 UD
1,2-Dichlorobenzene	6 U	1.2 U	1.5 U	1.5 U	1.5 U	6 U	3 U	3 U	3 U	3 U	0.6 U	0.6 U	0.6 U	0.6 UD	0.6 UD	6 UD
1,2-Dichloroethane	4 U	0.8 U	1 U	1 U	1 U	4 U	2 U	2 U	2 U	2 U	0.4 U	0.4 U	0.4 U	0.4 UD	0.4 UD	4 UD
1,2-Dichloropropane	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	2.3 U	0.46 U	0.46 U	0.46 U	0.46 UD	0.46 UD	4.6 UD
1,2-Dichlorotetrafluoroethane	7 U	1.4 U	1.8 U	1.8 U	1.8 U	7 U	3.5 U	3.5 U	3.5 U	3.5 U	0.7 U	0.7 U	0.7 U			
1,3,5-Trimethylbenzene	5 U	1 U	1.3 U	1.3 U	1.3 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	1.1	0.5 U	0.5 U	0.49 UD	0.49 UD	4.9 UD
1,3-Butadiene	2.2 U	0.44 U	0.55 U	0.55 U	0.55 U	2.2 U	1.1 U	1.1 U	2.3 U	1.1 U	0.22 U	0.22 U	0.22 U	0.22 UD	0.22 UD	2.2 UD
1,3-Dichlorobenzene	6 U	1.2 U	1.5 U	1.5 U	1.5 U	6 U	3 U	3 U	3 U	3 U	0.6 U	0.6 U	0.6 U	0.6 UD	0.6 UD	6 UD
1,4-Dichlorobenzene	6 U	1.2 U	1.5 U	1.5 U	1.5 U	6 U	3 U	3 U	3 U	3 U	0.6 U	0.6 U	0.6 U	0.6 UD	0.6 UD	6 UD
1,4-Dioxane																
2-Butanone	8.7	12	7.3	8.5	5.5	4.5	7.1	16	4.9	3.5	31	3.8	1.8	4.1 D	5.3 BD	59 UD
2-Hexanone	4 U	0.8 U	1 U	1 U	1 U	4 U	2 U	2 U	2 U	2 U	0.4 U	1	0.4 U	0.41 UD	0.41 UD	82 UD
4-Ethyltoluene	5 U	1 U	1.3 U	1.3 U	1.3 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.49 UD	0.49 UD	4.9 UD
4-Methyl-2-pentanone	4 U	0.8 U	1 U	1 U	1 U	4 U	2 U	2 U	2 U	2 U	0.4 U	0.4 U	0.4 U	0.41 UD	0.41 UD	4.1 UD
Acetone	580	38	58	30	24	15	24	24	7.9	49	26	25	12	42 BD	35 BD	48 UD
Benzene	3.2 U	3.9	4.5	1.9	2.3	3.2 U	2.6	2.8	3	2.2	1.5	1.7	2.1	1.4 D	1.6 D	3.2 UD
Benzyl chloride	5.2 U	1.1 U	1.3 U	1.3 U	1.3 U	5.2 U	2.6 U	2.6 U	2.6 U	2.6 U	0.52 U	0.52 U	0.52 U	0.52 UD	0.52 UD	5.2 UD
Bromodichloromethane	6.6 U	1.4 U	1.7 U	1.7 U	1.7 U	6.6 U	3.3 U	3.3 U	3.3 U	3.3 U	0.66 U	0.66 U	0.66 U	0.67 UD	0.67 UD	6.7 UD
Bromoform	11 U	2.1 U	2.6 U	2.6 U	2.6 U	11 U	5.1 U	5.1 U	5.1 U	5.1 U	1.1 U	1.1 U	1.1 U	1 UD	1 UD	10 UD
Bromomethane	3.8 U	0.76 U	0.95 U	0.95 U	0.95 U	3.8 U	1.9 U	1.9 U	1.9 U	1.9 U	0.38 U	0.38 U	0.38 U	0.39 UD	0.39 UD	3.9 UD
Carbon disulfide	5.7	3.4	2.7	3.7	3.3	3.2 U	3.2	2.7	2.1	1.6 U	1.5	0.93	0.9	0.78 D	0.31 UD	3.1 UD
Carbon tetrachloride	6.2 U	1.3 U	1.6 U	1.6 U	1.6 U	6.2 U	3.1 U	3.1 U	3.1 U	3.1 U	0.62 U	0.62 U	0.62 U	0.63 UD	0.63 UD	6.3 UD
Chlorobenzene	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	2.3 U	0.46 U	0.46 U	0.46 U	0.46 UD	0.46 UD	4.6 UD
Chloroethane	170	150	88	41	33	7.1	9.6	10	8.1	6.5	1.6	2.2	3.6	2 D	0.26 UD	2.6 UD
Chloroform	4.8 U	1	1.2 U	1.3	1.2 U	4.8 U	2.7	2.6	4.6	2.7	1.1	4.2	4.4	3.9 D	3 D	4.9 UD
Chloromethane	2 U	0.4 U	0.5 U	0.5 U	0.5 U	2 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.21 UD	0.21 UD	2.1 UD
cis-1,2-Dichloroethene	1100	1300	1200	1700	1200	520	1100	1200	1300	680	120	660	490	350 D	250 D	65 D
cis-1,3-Dichloropropene	4.4 U	0.88 U	1.1 U	1.1 U	1.1 U	4.4 U	2.2 U	2.2 U	2.2 U	2.2 U	0.44 U	0.44 U	0.44 U	0.45 UD	0.45 UD	4.5 UD
Cyclohexane	3.4 U	5.6	5	3.7	2.1	3.4 U	1.7 U	1.7 U	1.7 U	1.7 U	0.34 U	0.34 U	0.41	0.34 UD	0.34 UD	3.4 UD
Dibromochloromethane	8.6 U	1.8 U	2.2 U	2.2 U	2.2 U	8.6 U	4.3 U	4.3 U	4.3 U	4.3 U	0.86 U	0.86 U	0.86 U	0.85 UD	0.85 UD	8.5 UD
Dichlorodifluoromethane	5 U	2.5	3.2	770	2.6	5 U	2.9	3.3	2.5 U	2.5 U	1.5	2.2	1.5	2.1 D	0.49 UD	4.9 UD
Ethanol	350	26	29	17	15	3.8 U	19	18	12	18	37	31	1.9 U	1.9 UD	18 D	38 UD
Ethyl acetate	7.3 U	0.72 U	0.9 U	1.9 U	0.9 U	7.3 U	1.8 U	1.8 U	1.8 U	1.8 U	0.36 U	0.36 U	0.36 U	0.36 UD	0.36 UD	3.6 UD
Ethylbenzene	4.4 U	0.88 U	1.1 U	1.1 U	1.1 U	4.4 U	2.2 U	2.2 U	2.2 U	2.2 U	0.57	0.44 U	0.44 U	0.43 UD	0.43 UD	4.3 UD
Hexachlorobutadiene	22 U	4.3 U	5.4 U	5.4 U	5.4 U	22 U	11 U	11 U	5.3 U	11 U	2.2 U	1.1 U	1.1 U	1.1 UD	1.1 UD	11 UD
Hexane	10	10	7.6	5.5	3.1	3.6 U	4	2.1	1.8 U	1.8 U	0.36 U	0.97	0.71 U	0.87 D	0.35 UD	3.5 UD
Isopropyl alcohol	210	18	21	12	8.5	5 U	12	17	2.5 U	2.5 U	80	2.2	2.6	2.8 D	0.25 UD	25 UD
m,p-Xylene	8.6 U	1.8 U	2.2 U	2.2 U	2.2 U	8.6 U	4.3 U	4.3 U	4.3 U	4.3 U	1.4	0.93	1	0.87 UD	0.87 UD	8.7 UD

**Table 1.  
Summary of Analytical Results - Air Sampling for Small Retail Spaces  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Extraction Well - Western Small Retail Space																
	EW-7-020309 2/3/2009	EW-7-021109 2/11/2009	EW-7-021809 2/18/2009	EW-7-022609 2/26/2009	EW-7-030609 3/6/2009	EW-7-041409 4/14/2009	EW-7-051509 5/15/2009	EW-7-061109 6/11/2009	EW-7-091709 9/17/2009	EW-7-122909 12/29/2009	EW-7-032610 3/26/2010	EW-7-070110 7/1/2010	EW-7-091610 9/16/2010	EW-7-120710 12/7/2010	EW-7-021711 2/17/2011	EW-7-060211 6/2/2011	
Methyl methacrylate																0.41 UD	4.1 UD
Methylene chloride	9.3	2.6	8	1.8	1.8 U	20	29	16	7 U	27	1.4 U	2.4	0.81	1.9 D	2.4 D	6.9 UD	
Methyl-t-butyl ether	3.6 U	3.5	2.9	4.9	3.1	3.6 U	1.8 U	1.8 U	1.8 U	1.8 U	0.36 U	0.36 U	0.36 U	0.36 UD	0.36 UD	3.6 UD	
n-Heptane	4 U	1.4	1 U	1 U	1 U	4 U	2 U	2 U	2 U	2 U	0.4 U	0.4 U	0.4 U	0.41 UD	0.41 UD	4.1 UD	
o-Xylene	4.4 U	0.88 U	1.1 U	1.1 U	1.1 U	4.4 U	2.2 U	2.2 U	2.2 U	2.2 U	0.65	0.44 U	0.44 U	0.43 UD	0.43 UD	4.3 UD	
Propylene (Propene)	3.5 U	160	110	0.87 U	0.45 U	3.5 U	0.9 U	0.9 U	3.5 U	3.5 U	0.69 U	1.8 U	0.69 U	0.69 UD	1.7 UD	17 UD	
Styrene	4.2 U	0.84 U	1.1 U	1.1 U	1.1 U	4.2 U	2.1 U	2.1 U	2.1 U	2.1 U	0.42 U	0.67	0.47	0.43 UD	0.43 UD	4.3 UD	
Tetrachloroethene	66	69	56	84	69	40	140	230	410	130	74	510	610	190 D	110 D	120 D	
Tetrahydrofuran	41	23	12	14	7.5	3 U	5.6	15	4.1	1.5 U	2800	0.7	18	6.1 D	2.7 D	3900 D	
Toluene	14	2.9	3.6	1.7	0.95 U	3.8 U	1.9 U	1.9 U	1.9 U	1.9 U	5.4	4.8	2.2	0.47 D	0.88 D	3.8 UD	
trans-1,2-Dichloroethene	150	140	90	90	80	48	120	140	150	84	22	120	110	78 D	58 D	4 UD	
trans-1,3-Dichloropropene	4.4 U	0.88 U	1.1 U	1.1 U	1.1 U	4.4 U	2.2 U	2.2 U	2.2 U	2.2 U	0.44 U	0.44 U	0.44 U	0.45 UD	0.45 UD	4.5 UD	
Trichloroethene	230	210	180	180	200	110	330	420	920	420	190	690	730	440 D	310 D	260 D	
Trichlorofluoromethane	1800	1400	900	690	640	190	310	660	1400	620	210	690	700	530 D	740 D	330 D	
Trichlorotrifluoroethane	7.6 U	1.6 U	1.9 U	1.9 U	1.9 U	7.6 U	3.8 U	3.8 U	3.8 U	3.8 U	0.76 U	0.76 U	0.76 U	0.89 D	0.77 UD	7.7 UD	
Vinyl acetate	15 U	0.72 U	0.9 U	3.6 U	0.9 U	15 U	1.8 U	1.8 U	7.1 U	3.6 U	0.71 U	0.36 U	0.71 U	0.7 UD	0.35 UD	70 UD	
Vinyl chloride	280	370	180	48	21	2.6 U	2.7	3.2	1.3 U	1.6	1	0.26 U	1.6	0.41 D	0.26 UD	2.6 UD	



**Table 1.**  
**Summary of Analytical Results - Air Sampling for Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	CT IACTIND 2003 (ug/m <sup>3</sup> )	Indoor Air - Eastern Small Retail Space													
		IA-5 1/16/2009	IA-5-020309 2/3/2009	IA-5-021109 2/11/2009	IA-5-021809 2/18/2009	IA-5-022609 2/26/2009	IA-5-030609 3/6/2009	IA-5-041409 4/14/2009	IA-5-051509 5/15/2009	IA-5-061109 6/11/2009	IA-5-091709 9/17/2009	IA-5-122909 12/29/2009	IA-5-032610 3/26/2010	IA-5-070110 7/1/2010	IA-5-091610 9/16/2010
1,1,1-Trichloroethane	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
1,1,2,2-Tetrachloroethane	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
1,1,2-Trichloroethane	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
1,1-Dichloroethane	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
1,1-Dichloroethene	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
1,2,4-Trichlorobenzene	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
1,2,4-Trimethylbenzene	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	0.25 U	0.73
1,2-Dibromoethane (EDB)	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
1,2-Dichlorobenzene	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
1,2-Dichloroethane	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
1,2-Dichloropropane	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
1,2-Dichlorotetrafluoroethane	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
1,3,5-Trimethylbenzene	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
1,3-Butadiene	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
1,3-Dichlorobenzene	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
1,4-Dichlorobenzene	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
1,4-Dioxane	NA														
2-Butanone	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
2-Hexanone	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
4-Ethyltoluene	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
4-Methyl-2-pentanone	200	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.18	0.2 U	0.68	0.23	0.2 U	0.2 U	0.2 U	1.1
Acetone	500	32	11	21	20	9.5	6.5	14	14	46	16	15	11	18	17
Benzene	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
Benzyl chloride	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
Bromodichloromethane	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
Bromoform	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
Bromomethane	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
Carbon disulfide	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	0.27	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Carbon tetrachloride	0.54	0.33	0.44	0.5	0.55 [a]	0.47	0.61 [a]	0.44	0.64 [a]	0.46	0.39	0.41	0.48	0.53	0.44
Chlorobenzene	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
Chloroethane	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
Chloroform	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	0.55	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Chloromethane	80	1.1	1	1.5	1.4	1.1	1.1	1.1	1	1.4	1	2	1.2	1	1
cis-1,2-Dichloroethene	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
cis-1,3-Dichloropropene	2.9	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
Cyclohexane	NA	0.17 U	0.17 U	0.38	0.41	0.17 U	0.17 U	0.12 U	0.17 U	0.4	0.17 U	0.17 U	0.17 U	0.17 U	0.45
Dibromochloromethane	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
Dichlorodifluoromethane	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
Ethanol	NA	590	12	23	140	85	32	41	180	500	62	51	25	58	150
Ethyl acetate	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
Ethylbenzene	290	0.22 U	0.25	0.33	0.43	0.22 U	0.22 U	0.24	0.22 U	0.3	0.23	0.22 U	0.22 U	0.44	0.91
Hexachlorobutadiene	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	0.53 U	1.1 U	1.1 U	0.53 U	0.53 U
Hexane	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
Isopropyl alcohol	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
m,p-Xylene	500	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

**Table 1.**  
**Summary of Analytical Results - Air Sampling for Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	CT IACTIND 2003 (ug/m <sup>3</sup> )	Indoor Air - Eastern Small Retail Space													
		IA-5 1/16/2009	IA-5- 020309 2/3/2009	IA-5- 021109 2/11/2009	IA-5- 021809 2/18/2009	IA-5- 022609 2/26/2009	IA-5- 030609 3/6/2009	IA-5- 041409 4/14/2009	IA-5- 051509 5/15/2009	IA-5- 061109 6/11/2009	IA-5- 091709 9/17/2009	IA-5-122909 12/29/2009	IA-5- 032610 3/26/2010	IA-5- 070110 7/1/2010	IA-5- 091610 9/16/2010
Methyl methacrylate	NA														
Methylene chloride	17	2	3.6	5.2	1.1	1.2	0.74	2.5	2.9	2	0.7 U	4.3	2.2	1.3	0.75
Methyl-t-butyl ether	190	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.13 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
n-Heptane	NA	0.2 U	0.2 U	0.36	0.35	0.2 U	0.2 U	0.23	0.38	0.48	0.2 U	0.2 U	0.2 U	0.2 U	2.1
o-Xylene	500	0.23	0.27	0.35	0.47	0.22 U	0.22 U	0.23	0.23	0.32	0.22 U	0.22 U	0.22 U	0.31	0.87
Propylene (Propene)	NA	0.18 U	0.18 U	0.09 U	0.09 U	0.18 U	0.09 U	0.13 U	0.09 U	0.09 U	0.35 U	0.35 U	0.35 U	0.87 U	0.35 U
Styrene	290	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.15 U	0.21 U	1.5	0.3	0.21 U	0.35	0.32	0.58
Tetrachloroethene	5	0.39	0.34 U	0.43	0.43	0.34 U	0.34 U	0.24 U	0.47	0.34 U	0.41	0.34 U	0.34 U	0.34 U	0.34 U
Tetrahydrofuran	NA	3.2	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.11 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	500	1.3	1.1	3	3.3	0.65	0.51	1.5	2.8	2.8	1.5	0.54	1.5	0.7	6.2
trans-1,2-Dichloroethene	200	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
trans-1,3-Dichloropropene	2.9	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
Trichloroethene	1	5.5	0.39	0.27 U	0.27 U	0.27 U	0.27 U	0.22	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.28
Trichlorofluoromethane	500	3	1.3	1.7	1.8	1.5	1.7	1.2	1.3	2	1.2	1.8	1.4	1.5	6.3
Trichlorotrifluoroethane	NA	0.62	0.54	0.48	0.45	0.64	0.48	0.53	0.61	0.54	0.5	0.54	0.55	0.55	0.43
Vinyl acetate	NA	0.71 U	0.71 U	0.18 U	0.18 U	0.71 U	0.18 U	0.5 U	0.18 U	0.18 U	0.71 U	0.36 U	0.36 U	0.18 U	0.36 U
Vinyl chloride	1.9	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



**Table 1.  
Summary of Analytical Results - Air Sampling for Small Retail Spaces  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Center Small Retail Space															
	IA-5-120810 12/8/2010	IA-5-021711 2/17/2011	IA-5-060211 6/2/2011	IA-6-1/16/2009	IA-6-020309 2/3/2009	IA-6-021109 2/11/2009	IA-6-021809 2/18/2009	IA-6-022609 2/26/2009	IA-6-030609 3/6/2009	IA-6-041409 4/14/2009	IA-6-051509 5/15/2009	IA-6-061109 6/11/2009	IA-6-091709 9/17/2009	IA-6-122909 12/29/2009	IA-6-032610 3/26/2010	IA-6-070110 7/1/2010
1,1,1-Trichloroethane	0.27 U	0.27 U	0.27 U	110	3.9	0.27 U	0.29	0.27 U	0.27 U	1.6	0.27 U	0.27 U	0.27 U	0.27 U	0.35	0.27 U
1,1,2,2-Tetrachloroethane	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	0.24 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	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	0.19 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,1-Dichloroethane	0.2 U	0.2 U	0.2 U	3.9	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
1,1-Dichloroethene	0.2 U	0.2 U	0.2 U	1.2	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
1,2,4-Trichlorobenzene	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	0.26 U	0.37 U	0.37 U	0.37 U	0.75 U	0.75 U	0.37 U
1,2,4-Trimethylbenzene	0.25 U	0.25 U	0.25 U	0.75	0.32	0.29	1.5	0.25 U	0.25 U	0.18 U	0.25 U	0.29	0.34	0.25 U	0.25 U	0.25 U
1,2-Dibromoethane (EDB)	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	0.27 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
1,2-Dichlorobenzene	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	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethane	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	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	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	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
1,2-Dichlorotetrafluoroethane				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
1,3,5-Trimethylbenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	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
1,3-Butadiene	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	1.1	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
1,3-Dichlorobenzene	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	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	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
1,4-Dioxane	0.18 U															
2-Butanone	0.78	0.78 B	3.6	120	10	3.2	2.9	2.4	2.3	1	2.5	4.1	2.4	1.8	1.4	1.1
2-Hexanone	0.2 U	0.2 U	4.1 U	0.2 U	0.42	0.37	0.34	0.2 U	0.37	0.14 U	0.62	0.72	0.7	0.2 U	0.26	0.2 U
4-Ethyltoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	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
4-Methyl-2-pentanone	0.2 U	0.2 U	0.31	0.2 U	0.2 U	0.2 U	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
Acetone	6.4 B	9.5 B	24 B	44	14	14	25	11	8.5	6.1	11	28	20	14	6.5	14
Benzene	0.26	1.1	0.33	1	0.6	0.98	4.1 [a]	0.41	0.7	0.59	0.47	0.43	0.31	0.4	0.55	0.19
Benzyl chloride	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	0.19 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Bromodichloromethane	0.34 U	0.34 U	0.34 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	0.33 U
Bromoform	0.52 U	0.52 U	0.52 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	0.51 U
Bromomethane	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	0.14 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Carbon disulfide	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	0.12 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Carbon tetrachloride	0.54	0.6	0.59	0.39	0.42	0.52	0.59 [a]	0.47	0.6 [a]	0.42	0.77 [a]	0.45	0.42	0.4	0.43	0.55
Chlorobenzene	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	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
Chloroethane	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	0.1 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Chloroform	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	0.17 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.36
Chloromethane	0.76	0.96	1.1	1.3	0.9	1.4	1.5	1	1.1	1.1	1.1	1.9	0.97	1.8	1.4	1
cis-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	0.4	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
cis-1,3-Dichloropropene	0.23 U	0.23 U	0.23 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	0.22 U
Cyclohexane	0.17 U	0.17 U	0.46	0.17 U	0.17 U	0.25	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
Dibromochloromethane	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	0.31 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
Dichlorodifluoromethane	2.3	3.1	1.7	2	2.1	2.6	2.8	2.6	2.6	2	2.7	2.5	2.2	1.9	1.6	2.4
Ethanol	2.4	14	7.7	41	23	12	40	13	12	8.6	51	31	12	10	7.1	18
Ethyl acetate	0.18 U	0.18 U	0.18 U	0.37 U	0.37 U	0.18 U	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
Ethylbenzene	0.22 U	0.3	0.36	0.29	0.25	0.33	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
Hexachlorobutadiene	0.53 U	0.53 U	0.53 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	1.1 U	0.53 U	1.1 U	1.1 U	0.53 U
Hexane	0.3	1.3	1.7	1.2	0.78	0.7	2.6	0.33	0.4	0.63	0.38	0.68	0.45	0.18 U	0.22	1.3
Isopropyl alcohol	0.12 U	1.7	1.2 U	4.7	6.6	3.2	4.9	1.7	1.6	0.18 U	4.5	22	7	1.4	4.9	1
m,p-Xylene	0.43 U	0.85	0.57	0.82	0.72	0.84	4.9	0.43 U	0.43 U	0.51	0.43 U	0.67	0.62	0.43 U	0.51	0.58

**Table 1.  
Summary of Analytical Results - Air Sampling for Small Retail Spaces  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Center Small Retail Space															
	IA-5-120810 12/8/2010	IA-5-021711 2/17/2011	IA-5-060211 6/2/2011	IA-6-1/16/2009	IA-6-020309 2/3/2009	IA-6-021109 2/11/2009	IA-6-021809 2/18/2009	IA-6-022609 2/26/2009	IA-6-030609 3/6/2009	IA-6-041409 4/14/2009	IA-6-051509 5/15/2009	IA-6-061109 6/11/2009	IA-6-091709 9/17/2009	IA-6-122909 12/29/2009	IA-6-032610 3/26/2010	IA-6-070110 7/1/2010
Methyl methacrylate	0.2 U	0.2 U	0.2 U													
Methylene chloride	0.65	2.8	4.2	2.5	5.2	0.59	1.6	0.83	0.69	2	2	2.6	0.7 U	2.9	0.7 U	4.5
Methyl-t-butyl ether	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	0.13 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
n-Heptane	0.2 U	0.33	0.2 U	0.27	0.2 U	0.32	1.3	0.2 U	0.2 U	0.21	0.2 U	0.26	0.2 U	0.2 U	0.2 U	1.4
o-Xylene	0.22 U	0.3	0.26	0.36	0.26	0.34	1.8	0.22 U	0.22 U	0.19	0.22 U	0.25	0.23	0.22 U	0.22 U	0.22 U
Propylene (Propene)	0.86 U	0.86 U	0.86 U	0.18 U	0.18 U	0.09 U	0.09 U	0.18 U	0.09 U	0.13 U	0.09 U	0.09 U	0.35 U	0.35 U	0.35 U	0.87 U
Styrene	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.28	0.21 U	0.21 U	0.15 U	0.25	0.21 U	0.23	0.21 U	0.21 U	0.24
Tetrachloroethene	0.39	2.4	0.34 U	1.2	0.34 U	0.45	1.2	0.34 U	0.34 U	0.72	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
Tetrahydrofuran	0.15 U	0.15 U	0.15 U	77	2.8	0.32	0.15 U	0.15 U	0.15 U	0.22	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	0.19 U	1.8	0.9	1.8	1.3	2.5	11	0.65	0.71	1.3	0.81	2	1.1	0.49	1.6	1.7
trans-1,2-Dichloroethene	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	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	0.23 U	0.23 U	0.23 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	0.22 U
Trichloroethene	0.27 U	0.27 U	0.27 U	13	1.7	0.27 U	0.34	0.27 U	0.27 U	0.6	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
Trichlorofluoromethane	1.3	1.7	1.4	4.8	1.3	1.7	2.5	1.5	1.7	1.4	1.2	2.2	1.2	1.7	1.3	1.5
Trichlorotrifluoroethane	0.52	0.66	0.69	0.64	0.51	0.48	0.45	0.64	0.48	0.53	0.74	0.63	0.48	0.51	0.55	0.55
Vinyl acetate	0.43	0.18 U	3.5 U	0.71 U	0.71 U	0.18 U	0.18 U	0.71 U	0.18 U	0.5 U	0.18 U	0.18 U	0.71 U	0.36 U	0.36 U	0.18 U
Vinyl chloride	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	0.1 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U



**Table 1.**  
**Summary of Analytical Results - Air Sampling for Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Western Small Retail Space															
	IA-6-091610 9/16/2010	IA-6-120710 12/7/2010	IA-6-021711 2/17/2011	IA-6-060211 6/2/2011	IA-7-1/16/2009	IA-7-020309 2/3/2009	IA-7-021109 2/11/2009	IA-7-021809 2/18/2009	IA-7-022609 2/26/2009	IA-7-030609 3/6/2009	IA-7-041409 4/14/2009	IA-7-051509 5/15/2009	IA-7-061109 6/11/2009	IA-7-091709 9/17/2009	IA-7-122909 12/29/2009	IA-7-032610 3/26/2010
1,1,1-Trichloroethane	0.27 U	0.27 U	0.27 U	0.27 U	44	2.4	0.4	1.3	0.27 U	0.27 U	0.87	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,1,2,2-Tetrachloroethane	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	0.24 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	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	0.19 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,1-Dichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	1.3	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
1,1-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.52	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
1,2,4-Trichlorobenzene	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	0.26 U	0.37 U	0.37 U	0.37 U	0.75 U	0.75 U
1,2,4-Trimethylbenzene	0.33	0.25 U	0.35	0.25 U	0.25 U	0.34	0.34	0.99	0.25 U	0.25 U	0.18 U	0.25 U	0.29	0.39	0.25 U	0.35
1,2-Dibromoethane (EDB)	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	0.27 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
1,2-Dichlorobenzene	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	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethane	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	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	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	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
1,2-Dichlorotetrafluoroethane	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
1,3,5-Trimethylbenzene	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	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Butadiene	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.14	0.97	0.11 U	0.11 U	0.08 U	0.11 U	0.11 U	0.23 U	0.11 U	0.11 U
1,3-Dichlorobenzene	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	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	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	0.21 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dioxane																
2-Butanone	0.89	0.87	1.9 B	2.9 U	70	6.5	3.9	5.2	2.2	1.3	1.3	2.3	7.3	2.2	0.49	2.1
2-Hexanone	0.2 U	0.2 U	0.22	4.1 U	0.2 U	0.29	0.2 U	0.91	0.2 U	0.2 U	0.14 U	0.53	1.5	0.53	0.2 U	0.2 U
4-Ethyltoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.27	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Methyl-2-pentanone	0.4	0.2 U	0.2 U	0.28	0.2 U	0.2 U	0.2 U	0.42	0.2 U	0.2 U	0.14 U	0.22	0.79	0.24	0.2 U	0.2 U
Acetone	13	11 B	14 B	19 B	29	12	13	32	7.8	6.6	6.5	10	31	22	31	12
Benzene	0.6	0.44	1.3	0.29	0.95	0.75	1.1	3.2	0.67	0.73	0.42	0.35	0.52	0.43	0.52	0.53
Benzyl chloride	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	0.19 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Bromodichloromethane	0.33 U	0.34 U	0.34 U	0.34 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
Bromoform	0.51 U	0.52 U	0.52 U	0.52 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
Bromomethane	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	0.14 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Carbon disulfide	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	0.26	0.16 U	0.16 U	0.26	0.16 U	0.16 U
Carbon tetrachloride	0.44	0.46	0.57	0.64	0.32	0.44	0.52	0.56 [a]	0.48	0.6 [a]	0.43	0.65 [a]	0.43	0.42	0.44	0.43
Chlorobenzene	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	0.17 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
Chloroethane	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	0.1 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Chloroform	0.36	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	0.17 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Chloromethane	1.1	0.95	0.92	1.1	1.7	0.98	1.4	1.5	1	1.2	1.1	0.93	1.8	1.2	2.1	1.2
cis-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.29	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.14	0.2 U	0.2 U	0.2 U	0.27	0.2 U
cis-1,3-Dichloropropene	0.22 U	0.23 U	0.23 U	0.23 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
Cyclohexane	0.17 U	0.17 U	0.17 U	0.29	0.17 U	0.17 U	0.32	0.7	0.17 U	0.17 U	0.12 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Dibromochloromethane	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	0.31 U	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
Dichlorodifluoromethane	1.6	1.9	3.1	1.8	2.1	2.2	2.6	2.7	2.6	2.6	2	2.4	2.7	2.3	2.1	1.8
Ethanol	36	5.9	10	7.7	7.3	16	11	26	7.9	8.4	7.1	11	14	11	10	13
Ethyl acetate	0.18 U	0.18 U	0.18 U	0.18 U	0.37 U	0.37 U	0.18 U	0.21	0.37 U	0.18 U	0.26 U	0.18 U	0.24	2.6	0.18 U	0.18 U
Ethylbenzene	0.43	0.22 U	0.45	0.22 U	0.23	0.29	0.36	0.95	0.24	0.22 U	0.16 U	0.22 U	0.25	0.32	0.68	0.32
Hexachlorobutadiene	0.53 U	0.53 U	0.53 U	0.53 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	1.1 U	0.53 U	1.1 U	1.1 U
Hexane	0.69	0.39	1.5	0.41	0.9	0.87	0.91	2	1.1	0.6	0.69	0.33	1.5	0.88	0.25	0.33
Isopropyl alcohol	3.2	1.1	2.8	1.2 U	3.7	6.2	3.6	8.3	0.25 U	2.7	0.18 U	7	14	4	1.9	18
m,p-Xylene	1.1	0.43 U	1.2	0.48	0.61	0.82	0.94	2.8	0.73	0.43 U	0.31 U	0.43 U	0.72	0.86	2.8	0.82

**Table 1.  
Summary of Analytical Results - Air Sampling for Small Retail Spaces  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Western Small Retail Space															
	IA-6-091610 9/16/2010	IA-6-120710 12/7/2010	IA-6-021711 2/17/2011	IA-6-060211 6/2/2011	IA-7-1/16/2009	IA-7-020309 2/3/2009	IA-7-021109 2/11/2009	IA-7-021809 2/18/2009	IA-7-022609 2/26/2009	IA-7-030609 3/6/2009	IA-7-041409 4/14/2009	IA-7-051509 5/15/2009	IA-7-061109 6/11/2009	IA-7-091709 9/17/2009	IA-7-122909 12/29/2009	IA-7-032610 3/26/2010
Methyl methacrylate		0.2 U	0.2 U	0.2 U												
Methylene chloride	0.64	0.94	3	1	1.9	5.7	0.92	1.5	6.3	1.4	4.2	2.3	5.7	0.7 U	2.9	0.7 U
Methyl-t-butyl ether	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	0.13 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
n-Heptane	0.47	0.2 U	0.35	0.2 U	0.2	0.2 U	0.37	1.2	0.2 U	0.2 U	0.17	0.2 U	0.34	0.37	0.2 U	0.29
o-Xylene	0.42	0.22 U	0.4	0.22 U	0.24	0.31	0.39	0.97	0.24	0.22 U	0.16 U	0.22 U	0.25	0.31	0.6	0.28
Propylene (Propene)	0.35 U	0.86 U	0.86 U	0.86 U	0.18 U	0.18 U	0.09 U	0.09 U	0.18 U	0.09 U	0.13 U	0.09 U	0.09 U	0.35 U	0.35 U	0.35 U
Styrene	0.29	0.21 U	0.21 U	0.27	0.21 U	0.21 U	0.21 U	0.26	0.21 U	0.21 U	0.15 U	0.21 U	0.29	0.39	0.21 U	0.26
Tetrachloroethene	0.34 U	0.34 U	1.6	0.34 U	1.6	0.34 U	0.65	0.63	0.34 U	0.34 U	0.48	0.34 U	0.34 U	0.34 U	1	0.34 U
Tetrahydrofuran	0.15 U	0.15 U	0.15 U	0.15 U	45	2.1	0.74	0.43	0.15 U	0.15 U	0.27	0.15 U	0.15 U	0.51	0.15 U	0.15 U
Toluene	2.6	0.4	2.9	0.93	1.5	1.6	2.7	7.5	1.5	0.76	0.48	0.61	2.3	4	0.57	7.2
trans-1,2-Dichloroethene	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	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	0.22 U	0.23 U	0.23 U	0.23 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
Trichloroethene	0.3	0.27 U	0.27 U	0.27 U	4.6	1.1	0.28	0.58	0.27 U	0.27 U	0.3	0.27 U	0.27 U	0.27 U	0.4	0.27 U
Trichlorofluoromethane	3.1	1.1	1.6	1.1	4.7	1.4	1.7	3.1	1.6	1.7	1.3	1.1	1.9	1.3	1.7	1.3
Trichlorotrifluoroethane	0.42	0.52	0.69	0.67	0.62	0.57	0.47	0.44	0.66	0.45	0.54	0.69	0.57	0.51	0.54	0.64
Vinyl acetate	0.36 U	0.35 U	0.18 U	3.5 U	0.71 U	0.71 U	0.18 U	0.18 U	0.71 U	0.18 U	0.5 U	0.18 U	0.18 U	0.71 U	0.36 U	0.36 U
Vinyl chloride	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	0.1 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U

**Table 1.**  
**Summary of Analytical Results - Air Sampling for Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Indoor Air - Western Small Retail Space					
Parameter (ug/m <sup>3</sup> )	IA-7-070110 7/1/2010	IA-7-091610 9/16/2010	IA-7-120710 12/7/2010	IA-7-021711 2/17/2011	IA-7-060211 6/2/2011
1,1,1-Trichloroethane	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,1,2,2-Tetrachloroethane	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,1-Dichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trichlorobenzene	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
1,2,4-Trimethylbenzene	0.36	0.36	0.25 U	0.25 U	0.56
1,2-Dibromoethane (EDB)	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
1,2-Dichlorobenzene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	0.3	0.23 U	0.23 U	0.23 U	0.63
1,2-Dichlorotetrafluoroethane	0.35 U	0.35 U			
1,3,5-Trimethylbenzene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Butadiene	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
1,3-Dichlorobenzene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dioxane					
2-Butanone	4.3	1.8	0.42	1.7 B	4.7
2-Hexanone	0.82	0.55	0.2 U	0.2 U	1.4 J
4-Ethyltoluene	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
4-Methyl-2-pentanone	0.43	0.61	0.2 U	0.2 U	0.53
Acetone	41	27	12 B	15 B	48 B
Benzene	0.27	0.56	0.45	1.1	0.41
Benzyl chloride	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Bromodichloromethane	0.33 U	0.33 U	0.34 U	0.34 U	0.34 U
Bromoform	0.51 U	0.51 U	0.52 U	0.52 U	0.52 U
Bromomethane	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Carbon disulfide	0.16 U	0.16 U	0.16 U	0.16 U	0.27
Carbon tetrachloride	0.5	0.47	0.45	0.56	0.69
Chlorobenzene	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
Chloroethane	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Chloroform	0.24 U	0.38	0.24 U	0.24 U	0.24 U
Chloromethane	1.3	1.4	0.99	1	1.6
cis-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,3-Dichloropropene	0.22 U	0.22 U	0.23 U	0.23 U	0.23 U
Cyclohexane	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Dibromochloromethane	0.43 U	0.43 U	0.43 U	0.43 U	0.43 U
Dichlorodifluoromethane	2.7	1.7	2	3.1	2.5
Ethanol	39	240	13	14	28
Ethyl acetate	0.18 U	0.18 U	0.18 U	0.18 U	0.7
Ethylbenzene	0.45	0.45	0.22 U	0.22 U	0.68
Hexachlorobutadiene	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U
Hexane	0.7	0.64	0.5	1.3	0.58
Isopropyl alcohol	5.8	28	2.8	11	1.2 U
m,p-Xylene	1.2	1.2	0.43 U	0.43 J	1.5



**Table 1.  
Summary of Analytical Results - Air Sampling for Small Retail Spaces  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Indoor Air - Western Small Retail Space					
Parameter (ug/m <sup>3</sup> )	IA-7-070110 7/1/2010	IA-7-091610 9/16/2010	IA-7-120710 12/7/2010	IA-7-021711 2/17/2011	IA-7-060211 6/2/2011
Methyl methacrylate			0.2 U	0.2 U	0.2 U
Methylene chloride	1.3	0.6	1.3	2.5	1.1
Methyl-t-butyl ether	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
n-Heptane	0.5	0.68	0.33	0.47	2
o-Xylene	0.43	0.43	0.22 U	0.22 U	0.69
Propylene (Propene)	0.87 U	0.35 U	0.86 U	0.86 U	0.86 U
Styrene	0.7	0.39	0.21 U	0.21 U	0.97
Tetrachloroethene	0.34 U	0.36	0.34 U	1.7	0.34 U
Tetrahydrofuran	0.15 U	0.15 U	0.15 U	0.15 U	0.24
Toluene	8.4	3.5	0.48	1.6	6.6
trans-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	0.22 U	0.22 U	0.23 U	0.23 U	0.23 U
Trichloroethene	0.27 U	0.77	0.27 U	0.27 U	0.27 U
Trichlorofluoromethane	1.3	2.9	1.2	1.6	1.3
Trichlorotrifluoroethane	0.54	0.43	0.55	0.67	0.76
Vinyl acetate	0.18 U	0.36 U	0.35 U	0.18 U	3.5 U
Vinyl chloride	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U

[a] Benzene and carbon tetrachloride are above the target air concentration, but are not compliance violations as indoor air concentrations are consistent with outdoor air concentrations that were sampled on the same day.

NA - not available

U - Not detected, value is the detection limit

B - Compounds detected in method blank as well as field sample

D - Result from diluted analyses

ug/m<sup>3</sup> - micrograms per cubic meter

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

Prepared by / Date: KJC 07/14/11

Checked by / Date: PJM 08/01/11

**Table 2.**  
**Vacuum Monitoring Results - Small Retail Spaces**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Date	Pressure Differential (inches of water)		
	VMW-5	VMW-6	VMW-7
2/3/2009	-0.25	-0.17	0.00
2/18/2009	-0.212	-0.155	-0.011
2/26/2009	-0.230	-0.120	-0.025
3/6/2009	-0.200	-0.086	-0.012
4/14/2009	-0.108	-0.054	-0.014
5/15/2009	-0.081	-0.073	-0.016
6/11/2009	-0.090	-0.076	-0.098
9/17/2009	-0.110	-0.102	+0.074
12/29/2009**	-0.011	-0.010	-0.061
3/26/2010	-0.245	-0.142	-0.018
7/1/2010	-0.542	-0.114	-0.176
9/16/2010	-0.247	-0.874	-0.013
12/7/2010	-0.044	-0.028	+0.022
2/17/2011	-0.212	-0.599	-0.337
6/2/2011	-0.277	-0.236	-0.138**

\*\* ASD system offline.

Prepared by/Date: PJM 07/13/11

Checked by/Date: MAM 8/01/11

**Table 3.  
Summary of Analytical Results - Air Sampling for Large Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Outdoor Air Reference Locations														
	AA-1 1/16/2009	AA-1- 020309 2/3/2009	AA-1- 021109 2/11/2009	AA-1- 021809 2/18/2009	AA-1- 022609 2/26/2009	AA-1- 030609 3/6/2009	AA-1- 033109 3/31/2009	AA-1- 041409 4/14/2009	AA-1- 042409 4/24/2009	AA-1- 051509 5/15/2009	AA-1- 061109 6/11/2009	AA-1- 091709 9/17/2009	AA-1- 092409 9/24/2009	AA-1- 100109 10/1/2009	AA-1- 100809 10/8/2009
1,1,1-Trichloroethane	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	0.27 U	0.27 U
1,1,2,2-Tetrachloroethane	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	0.34 U	0.34 U
1,1,2-Trichloroethane	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	0.27 U	0.27 U
1,1-Dichloroethane	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	0.2 U	0.2 U
1,1-Dichloroethene	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	0.2 U	0.2 U
1,2,4-Trichlorobenzene	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	0.37 U
1,2,4-Trimethylbenzene	0.25 U	0.28	0.52	1.8	0.25 U	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.29	0.3	0.25 U	0.25 U	0.25 U
1,2-Dibromoethane (EDB)	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	0.38 U
1,2-Dichlorobenzene	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	0.3 U	0.3 U
1,2-Dichloroethane	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	0.2 U	0.2 U
1,2-Dichloropropane	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	0.23 U	0.23 U
1,2-Dichlorotetrafluoroethane	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	0.35 U	0.35 U
1,3,5-Trimethylbenzene	0.25 U	0.25 U	0.25 U	0.5	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
1,3-Butadiene	0.11 U	0.11 U	0.17	1.3	0.11 U	0.11 U	0.11 U	0.08 U	0.11 U	0.11 U	0.11 U	0.23 U	0.23 U	0.23 U	0.23 U
1,3-Dichlorobenzene	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	0.3 U	0.3 U
1,4-Dichlorobenzene	0.3 U	0.3 U	0.3 U	0.53	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
1,4-Dioxane															
2-Butanone	0.58	1.2	2.4	3.2	1.6	0.67	1.7	0.11 U	1.6	1.6	1.1	1.7	0.8	1.2	1.2
2-Hexanone	0.2 U	0.22	0.57	0.35	0.2 U	0.2 U	0.2 U	0.14 U	0.26	0.39	0.2 U	0.34	0.2 U	0.33	0.23
4-Ethyltoluene	0.25 U	0.25 U	0.25 U	0.6	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
4-Methyl-2-pentanone	0.2 U	0.2 U	0.27	0.63	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
Acetone	7.3	8	15	22	8.4	5.9	12	1.1	27	9.5	10	10	9.6	5.4	17
Benzene	0.69	0.62	1.3	4.7	0.43	0.69	0.46	0.12 U	0.3	0.4	0.49	0.38	0.35	0.25	0.2
Benzyl chloride	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	0.26 U	0.26 U
Bromodichloromethane	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	0.33 U	0.33 U
Bromoform	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	0.51 U	0.51 U
Bromomethane	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	0.19 U	0.19 U
Carbon disulfide	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	0.16 U	0.16 U
Carbon tetrachloride	0.38	0.44	0.52	0.56	0.43	0.61	0.47	0.22 U	0.41	0.78	0.43	0.4	0.4	0.43	0.46
Chlorobenzene	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	0.23 U	0.23 U
Chloroethane	0.13 U	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
Chloroform	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	0.24 U	0.24 U
Chloromethane	1.1	0.9	1.4	1.5	1.1	1.1	1.3	1.1	1.2	1.1	1.2	0.85	1.1	0.97	0.96
cis-1,2-Dichloroethene	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	0.2 U	0.2 U
cis-1,3-Dichloropropene	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	0.22 U	0.22 U
Cyclohexane	0.17 U	0.17 U	0.35	1.1	0.17 U	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
Dibromochloromethane	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	0.43 U	0.43 U
Dichlorodifluoromethane	2	2.2	2.6	2.7	2.6	2.6	2.8	2	2.5	2.7	2.6	2.1	2.1	2.2	2.1
Ethanol	4	5.4	10	47	4.3	3.5	4.7	0.81	4.9	4.8	8.6	6.6	4.6	3.9	4.9
Ethyl acetate	0.37 U	0.37 U	0.18 U	0.31	0.37 U	0.18 U	0.18 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



**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Outdoor Air Reference Locations														
	AA-1 1/16/2009	AA-1- 020309 2/3/2009	AA-1- 021109 2/11/2009	AA-1- 021809 2/18/2009	AA-1- 022609 2/26/2009	AA-1- 030609 3/6/2009	AA-1- 033109 3/31/2009	AA-1- 041409 4/14/2009	AA-1- 042409 4/24/2009	AA-1- 051509 5/15/2009	AA-1- 061109 6/11/2009	AA-1- 091709 9/17/2009	AA-1- 092409 9/24/2009	AA-1- 100109 10/1/2009	AA-1- 100809 10/8/2009
Ethylbenzene	0.22 U	0.25	0.52	2	0.22 U	0.22 U	0.22 U	0.16 U	0.22 U	0.22 U	0.24	0.22 U	0.23	0.22 U	0.22 U
Hexachlorobutadiene	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	1.1 U	1.1 U	0.53 U	0.53 U	0.53 U	0.53 U
Hexane	1.5	0.75	1.1	2.9	0.38	2.8	2.2	0.13 U	0.56	0.37	0.59	0.48	1.4	0.45	4.5
Isopropyl alcohol	1.4	1.4	1.8	4.3	1.4	0.67	1.4	0.18 U	14	1	2.5	2.8	0.87	0.63	0.25 U
m,p-Xylene	0.43 U	0.72	1.4	6.4	0.44	0.43 U	0.43 U	0.31 U	0.43 U	0.49	0.73	0.62	0.59	0.43 U	0.43 U
Methyl methacrylate															
Methylene chloride	5.5	3.1	0.65	1.5	0.78	7.4	15	2.1	2.8	1.7	1.9	0.7 U	4.2	0.7 U	23
Methyl-t-butyl ether	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.13 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
n-Heptane	0.2 U	0.27	0.92	1.6	0.2 U	0.2 U	0.2 U	0.14 U	0.2 U	0.4	0.23	0.2 U	0.2 U	0.2 U	0.2 U
o-Xylene	0.22 U	0.27	0.53	2.2	0.22 U	0.22 U	0.22 U	0.16 U	0.22 U	0.24	0.27	0.23	0.22 U	0.22 U	0.22 U
Propylene (Propene)	0.18 U	0.18 U	0.09 U	0.09 U	0.18 U	0.09 U	0.09 U	0.13 U	0.18 U	0.09 U	0.09 U	0.35 U	0.35 U	0.18 U	0.35 U
Styrene	0.21 U	0.21 U	0.21 U	0.28	0.21 U	0.21 U	0.21 U	0.15 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Tetrachloroethene	0.34 U	0.34 U	0.73	0.77	0.34 U	0.34 U	0.34 U	0.24 U	0.34 U	0.34 U	0.34 U	0.52	0.34 U	0.34 U	0.34 U
Tetrahydrofuran	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.11 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	1.2	0.15 U
Toluene	0.94	1.5	3.2	14	0.71	0.99	0.82	0.14 U	0.72	2.6	2.1	1.9	2	0.61	0.5
trans-1,2-Dichloroethene	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	0.2 U	0.2 U
trans-1,3-Dichloropropene	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	0.22 U	0.22 U
Trichloroethene	0.27 U	0.27 U	0.27 U	0.39	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
Trichlorofluoromethane	1.3	1.2	1.7	2.4	1.5	2	1.7	0.92	1.3	1.5	2	1.1	1.4	1.2	1.5
Trichlorotrifluoroethane	0.68	0.53	0.5	0.47	0.64	0.48	0.51	0.27 U	0.64	0.67	0.56	0.47	0.49	0.45	0.46
Vinyl acetate	0.71 U	0.71 U	0.18 U	0.18 U	0.71 U	0.18 U	0.18 U	0.5 U	0.71 U	0.18 U	0.18 U	0.71 U	0.71 U	0.71 U	0.71 U
Vinyl chloride	0.13 U	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

**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Outdoor Air Reference Locations												
	AA-1-122909 12/29/2009	AA-1-012810 1/28/2010	AA-1-020510 2/5/2010	AA-1-021210 2/12/2010	AA-1-021910 2/19/2010	AA-1-032610 3/26/2010	AA-1-043010 4/30/2010	AA-1-052810 5/28/2010	AA-1-070110 7/1/2010	AA-1-091610 9/16/2010	AA-1-120710 12/7/2010	AA-1-021711 2/17/2011	AA-1-060211 6/6/2011
1,1,1-Trichloroethane	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	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	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	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	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	0.75 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
1,2,4-Trimethylbenzene	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	0.94	0.25 U	1.1	0.25 U
1,2-Dibromoethane (EDB)	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	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	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	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	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	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	0.28	0.25 U	0.33	0.25 U
1,3-Butadiene	0.11 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	0.29	0.11 U	0.11 U	0.11 U
1,3-Dichlorobenzene	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	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													
2-Butanone	2	0.81	1.6	1.6	0.88	1.5	1.4	2.4	2.3	2.7	0.37	1.8 B	2.9 U
2-Hexanone	0.2 U	0.2 U	0.32	0.2 U	0.2 U	0.29	0.29	0.49	0.49	0.41	0.2 U	0.2 U	4.1 U
4-Ethyltoluene	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	0.3	0.25 U	0.34	0.25 U
4-Methyl-2-pentanone	0.2 U	0.2 U	0.2 U	0.34	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2.8	0.2 U	0.2 U	0.2 U
Acetone	11	3.5	7.6	5.0	3.7	9.5	12	20	13	14	5.7 B	19 B	8.7 B
Benzene	0.42	0.79	0.68	0.63	0.41	0.69	0.35	0.19	0.16 U	1.2	0.28	2.3	0.16 U
Benzyl chloride	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	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
Bromoform	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
Bromomethane	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	0.16 U	0.28	0.16 U	0.16 U	0.44	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.38	0.16 U	0.16 U
Carbon tetrachloride	0.39	0.42	0.39	0.31 U	0.43	0.49	0.47	0.52	0.51	0.43	0.42	0.48	0.53
Chlorobenzene	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	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	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	1.6	1.1	1.2	1.3	1.1	1.4	0.78	1.1	0.96	0.99	0.94	1	0.96
cis-1,2-Dichloroethene	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	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	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	0.46	0.17 U	0.17 U	0.17 U
Dibromochloromethane	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	2.1	2.3	2.4	2.5	2.9	1.8	2.1	2.5	2.4	2.9	1.9	3.1	1.9
Ethanol	3.8	5.4	5.1	7.2	1.2	4.9	4	3.3	4	14	2.3	12	2.7
Ethyl acetate	0.18 U	0.18 U	0.18 U	0.18 U	1.1	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U



**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Outdoor Air Reference Locations													
	AA-1-122909 12/29/2009	AA-1-012810 1/28/2010	AA-1-020510 2/5/2010	AA-1-021210 2/12/2010	AA-1-021910 2/19/2010	AA-1-032610 3/26/2010	AA-1-043010 4/30/2010	AA-1-052810 5/28/2010	AA-1-070110 7/1/2010	AA-1-091610 9/16/2010	AA-1-120710 12/7/2010	AA-1-021711 2/17/2011	AA-1-060211 6/6/2011	
Ethylbenzene	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.82	1.4	0.22 U	1.1	0.22 U	
Hexachlorobutadiene	1.1 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	
Hexane	0.62	0.36	0.53	0.91	0.24	0.23	1.1	0.51	0.37	1.2	0.35 U	3.3	0.88	
Isopropyl alcohol	0.54	0.56	2.7	1.5	0.8	0.73	0.69	1.6	0.79	0.25 U	0.29	2.4	1.2 U	
m,p-Xylene	0.43 U	0.43 U	0.50	0.47	0.43 U	0.49	0.43 U	0.43 U	2.2	3.7	0.43 U	3.3	0.43 U	
Methyl methacrylate												0.2 U	0.48	
Methylene chloride	4.6	1.3	1.9	1.7	0.7 U	0.7 U	0.7 U	0.35 U	1.1	1.1	0.66	3	2.3	
Methyl-t-butyl ether	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	
n-Heptane	0.2 U	0.26	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.91	0.2 U	0.95	0.2 U	
o-Xylene	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.46	1.2	0.22 U	1.1	0.22 U	
Propylene (Propene)	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.87 U	0.87 U	1.9	0.86 U	0.86 U	0.86 U	
Styrene	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	
Tetrachloroethene	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	0.49	0.34 U	5.3	0.34 U	
Tetrahydrofuran	0.15 U	0.15 U	0.15 U	0.15 U	0.19	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	
Toluene	0.78	0.94	0.64	0.97	0.46	1.1	0.75	0.63	0.57	10	0.19 U	5.3	0.52	
trans-1,2-Dichloroethene	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	
trans-1,3-Dichloropropene	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	
Trichloroethene	0.27 U	0.27 U	0.27 U	0.30	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	
Trichlorofluoromethane	2.2	1.2	1.2	1.6	1.5	1.5	1.2	1.4	1.3	11	1.2	1.7	1.5	
Trichlorotrifluoroethane	0.54	0.49	0.55	0.54	0.54	0.62	0.45	0.58	0.56	0.44	0.56	0.66	0.69	
Vinyl acetate	0.36 U	0.71 U	0.71 U	0.71 U	0.71 U	0.36 U	0.71 U	0.18 U	0.18 U	0.36 U	0.35 U	0.18 U	3.5 U	
Vinyl chloride	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	

**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Extraction Well - Large Retail Space													
	EW- Combined- 020309 2/3/2009	EW- COMBINE D-021109 2/11/2009	EW- COMBINE D-021809 2/18/2009	EW- COMBINE D-022609 2/26/2009	EW- COMBINE D-041409 4/14/2009	EW- COMBINE D-042409 4/24/2009	EW- COMBINE D-091709 9/17/2009	EW- COMBINE D-092409 9/24/2009	EW- COMBINE D-100109 10/1/2009	EW- COMBINE D-100809 10/8/2009	EW- COMBINE D-012810 1/28/2010	EW- COMBINE D-020510 2/5/2010	EW- COMBINE D-021210 2/12/2010	EW- COMBINE D-021910 2/19/2010
1,1,1-Trichloroethane	190000	91000	73000	32000	3500	19000	11000	8100	7900	6800	1500	2500	150	1200
1,1,2,2-Tetrachloroethane	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
1,1,2-Trichloroethane	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
1,1-Dichloroethane	19000	7800	5300	4800	390	2200	1600	1900	1900	1700	280	370	31	310
1,1-Dichloroethene	7800	1800	1000	630	73	420	310	250	260	280	52	66	7.3	62
1,2,4-Trichlorobenzene	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
1,2,4-Trimethylbenzene	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
1,2-Dibromoethane (EDB)	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
1,2-Dichlorobenzene	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
1,2-Dichloroethane	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
1,2-Dichloropropane	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
1,2-Dichlorotetrafluoroethane	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
1,3,5-Trimethylbenzene	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
1,3-Butadiene	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
1,3-Dichlorobenzene	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
1,4-Dichlorobenzene	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
1,4-Dioxane														
2-Butanone	37	32	48	60	21	40	7.8	31	30	21	4	11	10	9
2-Hexanone	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
4-Ethyltoluene	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
4-Methyl-2-pentanone	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
Acetone	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
Benzene	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
Benzyl chloride	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
Bromodichloromethane	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
Bromoform	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
Bromomethane	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
Carbon disulfide	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
Carbon tetrachloride	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
Chlorobenzene	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
Chloroethane	3400	1700	1200	450	42	220	110	94	92	88	9.8	11	1.3	9.9
Chloroform	27	17	20	17	4.8 U	8.8	12	14	11	11	4.1	5.8	0.49	6.2
Chloromethane	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
cis-1,2-Dichloroethene	14000	4700	6300	4200	300	1600	1600	1500	1300	1200	190	280	21	240
cis-1,3-Dichloropropene	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
Cyclohexane	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
Dibromochloromethane	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
Dichlorodifluoromethane	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
Ethanol	960	81	120	120	17	21	200	96	32	33	39	60	23	62
Ethyl acetate	7.3 U	3.6 U	7.2 U	15 U	7.3 U	0.37 U	1.8 U	3.6 U	7.2 U	7.2 U	0.36 U	3.6 U	0.18 U	0.36 U



**Table 3.  
Summary of Analytical Results - Air Sampling for Large Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Extraction Well - Large Retail Space														
	EW- Combined- 020309 2/3/2009	EW- COMBINE D-021109 2/11/2009	EW- COMBINE D-021809 2/18/2009	EW- COMBINE D-022609 2/26/2009	EW- COMBINE D-041409 4/14/2009	EW- COMBINE D-042409 4/24/2009	EW- COMBINE D-091709 9/17/2009	EW- COMBINE D-092409 9/24/2009	EW- COMBINE D-100109 10/1/2009	EW- COMBINE D-100809 10/8/2009	EW- COMBINE D-012810 1/28/2010	EW- COMBINE D-020510 2/5/2010	EW- COMBINE D-021210 2/12/2010	EW- COMBINE D-021910 2/19/2010	
Ethylbenzene	9.4	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	
Hexachlorobutadiene	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	
Hexane	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	
Isopropyl alcohol	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	0.5 U	
m,p-Xylene	25	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	0.49	0.86 U	
Methyl methacrylate															
Methylene chloride	12	7 U	14 U	14 U	19	2.6	7 U	14 U	28 U	28 U	1.4 U	14 U	2.6	1.4 U	
Methyl-t-butyl ether	3.6 U	3.6 U	7.2 U	7.2 U	3.6 U	0.18 U	1.8 U	3.6 U	7.2 U	7.2 U	0.36 U	3.6 U	0.18 U	0.36 U	
n-Heptane	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	
o-Xylene	8.4	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	
Propylene (Propene)	3.5 U	100	3.6 U	6.9 U	3.5 U	0.18 U	3.5 U	6.9 U	6.9 U	14 U	0.69 U	6.9 U	0.35 U	0.69 U	
Styrene	4.2 U	4.2 U	8.4 U	8.4 U	4.2 U	0.21 U	2.1 U	4.2 U	8.4 U	8.4 U	0.42 U	4.2 U	0.21 U	0.42 U	
Tetrachloroethene	140	60	430	540	47	110	110	260	67	72	4.6	200	4.8	45	
Tetrahydrofuran	77	77	150	180	66	110	1.5 U	96	85	67	15	32	28	43	
Toluene	36	3.8 U	7.6 U	7.6 U	3.8 U	0.59	3.4	4.7	7.6 U	7.6 U	0.38 U	3.8 U	3.6	0.38 U	
trans-1,2-Dichloroethene	110	61	47	47	4.6	33	29	34	30	26	3.4	4.6	0.36	4.1	
trans-1,3-Dichloropropene	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	
Trichloroethene	36000	17000	26000	13000	1400	6200	4000	3600	4000	4300	390	1400	58	460	
Trichlorofluoromethane	9900	2300	1800	1000	98	600	1800	1400	1500	1500	260	230	29	230	
Trichlorotrifluoroethane	7.6 U	7.6 U	16 U	16 U	7.6 U	0.74	3.8 U	7.6 U	16 U	16 U	0.76 U	7.6 U	0.53	0.76 U	
Vinyl acetate	15 U	3.6 U	7.2 U	29 U	15 U	0.71 U	7.1 U	15 U	29 U	29 U	1.5 U	15 U	0.71 U	1.5 U	
Vinyl chloride	110	20	10	5.2 U	2.6 U	3.4	1.3 U	2.6 U	5.2 U	5.2 U	0.26 U	2.6 U	0.13 U	0.26 U	

**Table 3.  
Summary of Analytical Results - Air Sampling for Large Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Extraction Well - Large Retail Space													
	EW-COMBINE D-043010 4/30/2010	EW-COMBINE D-052810 5/28/2010	EW-COMBINE D-070110 7/1/2010	EW-COMBINE D-091610 9/16/2010	EW-COMBINE D-120710 12/7/2010	EW-COMBINE D-021711 2/17/2011	EW-1- 030609 3/6/2009	EW-1- 033109 3/31/2009	EW-2- 030609 3/6/2009	EW-2- 033109 3/31/2009	EW-3- 030609 3/6/2009	EW-3- 033109 3/31/2009	EW-4- 030609 3/6/2009	EW-4- 033109 3/31/2009
1,1,1-Trichloroethane	1400	1700	2000	4700	280 D	2500 D	59000	66000	26000	30000	54000	72000	11000	14000
1,1,2,2-Tetrachloroethane	0.68 U	6.8 U	0.68 U	0.68 U	0.69 UD	0.69 UD	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	6.8 U	1.7 U	6.8 U
1,1,2-Trichloroethane	0.54 U	5.4 U	0.54 U	0.55	0.55 UD	0.55 UD	6.4	10	5.4 U	5.4 U	5.4 U	5.4 U	1.4 U	5.4 U
1,1-Dichloroethane	200	270	290	330	36 D	170 D	4100	4400	5700	7000	1600	2300	690	1400
1,1-Dichloroethene	30	40	52	81	7.3 D	58 D	570	1200	330	640	340	560	97	210
1,2,4-Trichlorobenzene	0.74 U	7.4 U	0.74 U	0.74 U	0.74 UD	0.74 UD	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	7.4 U	1.9 U	7.4 U
1,2,4-Trimethylbenzene	0.5 U	5 U	0.5 U	0.5 U	0.49 UD	0.49 UD	5 U	5 U	5 U	5 U	5 U	5 U	1.3 U	5 U
1,2-Dibromoethane (EDB)	0.76 U	7.6 U	0.76 U	0.76 U	0.77 UD	0.77 UD	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	1.9 U	7.6 U
1,2-Dichlorobenzene	0.6 U	6 U	0.6 U	0.6 U	0.6 UD	0.6 UD	6 U	6 U	6 U	6 U	6 U	6 U	1.5 U	6 U
1,2-Dichloroethane	0.4 U	4 U	0.4 U	0.4 U	0.4 UD	0.4 UD	4 U	4 U	4 U	4 U	4 U	4 U	1 U	4 U
1,2-Dichloropropane	0.46 U	4.6 U	0.46 U	0.46 U	0.46 UD	0.46 UD	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	1.2 U	4.6 U
1,2-Dichlorotetrafluoroethane	0.7 U	7 U	0.7 U	0.7 U			7 U	7 U	7 U	7 U	7 U	7 U	1.8 U	7 U
1,3,5-Trimethylbenzene	0.5 U	5 U	0.5 U	0.5 U	0.49 UD	0.49 UD	5 U	5 U	5 U	5 U	5 U	5 U	1.3 U	5 U
1,3-Butadiene	0.45 U	2.2 U	0.22 U	0.22 U	0.22 UD	0.22 UD	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	0.55 U	2.2 U
1,3-Dichlorobenzene	0.6 U	6 U	0.6 U	0.6 U	0.6 UD	0.6 UD	6 U	6 U	6 U	6 U	6 U	6 U	1.5 U	6 U
1,4-Dichlorobenzene	0.6 U	6 U	0.6 U	0.6 U	0.6 UD	0.6 UD	6 U	6 U	6 U	6 U	6 U	6 U	1.5 U	6 U
1,4-Dioxane														
2-Butanone	12.0	22.0	22.0	10.0	4.5 D	4.5 BD	3.5	8.9	12.0	11	36	10	36	6.4
2-Hexanone	0.4 U	4 U	0.4 U	0.4 U	0.41 UD	0.41 UD	4 U	4 U	4 U	4 U	4 U	4 U	1 U	4 U
4-Ethyltoluene	0.5 U	5 U	0.5 U	0.5 U	0.49 UD	0.49 UD	5 U	5 U	5 U	5 U	5 U	5 U	1.3 U	5 U
4-Methyl-2-pentanone	0.4 U	4 U	0.4 U	0.4 U	0.41 UD	0.41 UD	4 U	4 U	4 U	4 U	4 U	4 U	1 U	4 U
Acetone	16	24	16	6.6	11 BD	6.3 BD	35	16	9.6 U	9.6 U	53	24	26	12
Benzene	0.74	5.5	0.84	1.7	0.5 D	0.72 D	5.3	11	5.6	7.8	3.2 U	6.8	1.4	3.2 U
Benzyl chloride	0.52 U	5.2 U	0.52 U	0.52 U	0.52 UD	0.52 UD	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	1.3 U	5.2 U
Bromodichloromethane	0.66 U	6.6 U	0.66 U	0.66 U	0.67 UD	0.67 UD	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	1.7 U	6.6 U
Bromoform	1.1 U	11 U	1.1 U	1.1 U	1 UD	1 UD	11 U	11 U	11 U	11 U	11 U	11 U	2.6 U	11 U
Bromomethane	0.38 U	3.8 U	0.38 U	0.38 U	0.39 UD	0.39 UD	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	0.95 U	3.8 U
Carbon disulfide	0.77	3.2 U	1.1	1.3	0.31 UD	0.73 D	3.2 U	3.2 U	27	25	3.2 U	3.2 U	1.8	3.2 U
Carbon tetrachloride	0.62 U	6.2 U	0.73	1.1	0.63 UD	0.63 D	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	1.6 U	6.2 U
Chlorobenzene	0.46 U	7.2	0.46 U	0.46 U	0.46 UD	0.46 UD	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	1.2 U	4.6 U
Chloroethane	4.8	7.2	9.4	17	1 D	3.6 D	170	250	700	590	41	44	17	33
Chloroform	6	7.9	8	8.3	1.6 D	6.9 D	20	34	9.6	15	13	23	3.6	7.5
Chloromethane	0.2 U	2 U	0.2 U	0.2 U	0.21 UD	0.21 UD	2 U	2 U	2 U	2 U	2 U	2 U	0.5 U	2 U
cis-1,2-Dichloroethene	180	260	260	360	28 D	120 D	2000	2200	6100	7600	610	1200	560	1300
cis-1,3-Dichloropropene	0.44 U	4.4 U	0.44 U	0.44 U	0.45 UD	0.45 UD	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	1.1 U	4.4 U
Cyclohexane	0.34 U	3.4 U	0.34 U	0.55	0.34 UD	0.34 UD	3.4 U	5.7	8.4	8.8	3.4 U	3.4 U	0.85 U	3.4 U
Dibromochloromethane	0.86 U	8.6 U	0.86 U	0.86 U	0.85 UD	0.85 UD	8.6 U	8.6 U	8.6 U	8.6 U	8.6 U	8.6 U	2.2 U	8.6 U
Dichlorodifluoromethane	1.7	5 U	2.5	1.6	3 D	4.1 D	5 U	170	5 U	5 U	5.4	7	2.6	5 U
Ethanol	10	19 U	15	1.9 U	8.2 D	17 D	33	40	12	8.3	39	1.8 U	8.6	1.8 U
Ethyl acetate	0.36 U	3.6 U	0.36 U	0.36 U	0.36 UD	0.36 UD	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	0.9 U	3.6 U



**Table 3.  
Summary of Analytical Results - Air Sampling for Large Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Extraction Well - Large Retail Space													
	EW-COMBINE D-043010 4/30/2010	EW-COMBINE D-052810 5/28/2010	EW-COMBINE D-070110 7/1/2010	EW-COMBINE D-091610 9/16/2010	EW-COMBINE D-120710 12/7/2010	EW-COMBINE D-021711 2/17/2011	EW-1- 030609 3/6/2009	EW-1- 033109 3/31/2009	EW-2- 030609 3/6/2009	EW-2- 033109 3/31/2009	EW-3- 030609 3/6/2009	EW-3- 033109 3/31/2009	EW-4- 030609 3/6/2009	EW-4- 033109 3/31/2009
Ethylbenzene	0.44 U	4.4 U	0.44 U	0.58	0.43 UD	0.43 UD	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	1.1 U	4.4 U
Hexachlorobutadiene	1.1 U	11 U	1.1 U	1.1 U	1.1 UD	1.1 UD	22 U	22 U	22 U	22 U	22 U	22 U	5.4 U	22 U
Hexane	0.92	3.6 U	0.44	0.71 U	0.7 UD	0.8 D	3.6 U	3.6 U	3.6 U	6.6	3.6 U	3.6 U	3.2	3.6 U
Isopropyl alcohol	2.6	2.4 U	0.24 U	0.5 U	0.84 D	0.25 UD	28	2.4 U	2.4 U	2.4 U	26	5.9	7.5	7.1
m,p-Xylene	0.86 U	8.6 U	0.86 U	1.6	0.87 UD	0.87 JD	8.6 U	8.6 U	8.6 U	8.6 U	8.6 U	8.6 U	2.2 U	8.6 U
Methyl methacrylate						0.41 UD								
Methylene chloride	1.4 U	7 U	2.1	0.9	0.78 D	2.9 D	7 U	19	7 U	17	7 U	13	19	12
Methyl-t-butyl ether	0.36 U	3.6 U	0.36 U	0.36 U	0.36 UD	0.36 UD	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	0.9 U	3.6 U
n-Heptane	0.4 U	4 U	0.4 U	0.4 U	0.41 UD	0.41 UD	4 U	4 U	4 U	4 U	4 U	4 U	1 U	4 U
o-Xylene	0.44 U	4.4 U	0.44 U	0.56	0.43 UD	0.43 UD	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	1.1 U	4.4 U
Propylene (Propene)	0.69 U	18 U	1.8 U	0.69 U	1.8 D	1.7 UD	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	0.45 U	1.8 U
Styrene	0.42 U	4.2 U	0.42 U	0.42 U	0.43 UD	0.43 UD	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	1.1 U	4.2 U
Tetrachloroethene	450	1300	640	750	160 D	920 D	600	1200	2300	2500	73	310	31	170
Tetrahydrofuran	34	54	65	31	11 D	11 D	6.3	21	19	3 U	32	14	37	5.1
Toluene	0.75	3.8 U	0.41	3.5	0.38 D	1.4 D	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	1.4	3.8 U
trans-1,2-Dichloroethene	3	4.6	5.5	6.6	0.6 D	1.9 D	9.2	23	69	180	4 U	8.8	2.5	8
trans-1,3-Dichloropropene	0.44 U	4.4 U	0.44 U	0.44 U	0.45 UD	0.45 UD	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	1.1 U	4.4 U
Trichloroethene	1200	2000	1700	3200	240 D	1800 D	31000	42000	25000	25000	8600	19000	2700	5500
Trichlorofluoromethane	210	300	440	410	71 D	200 D	520	540	1300	1800	430	840	240	370
Trichlorotrifluoroethane	0.76 U	7.6 U	0.76 U	0.76 U	0.77 UD	0.77 UD	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	7.6 U	1.9 U	7.6 U
Vinyl acetate	1.5 U	3.6 U	0.36 U	0.71 U	0.7 UD	0.35 UD	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	0.9 U	3.6 U
Vinyl chloride	0.26 U	2.6 U	0.26 U	0.4	0.26 UD	0.26 UD	2.7	4.8	9.4	8.1	2.6 U	2.6 U	0.65	2.6 U

**Table 3.  
Summary of Analytical Results - Air Sampling for Large Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Post Treatment - Large Retail Space						
	Post carbon-020309 2/3/2009	POST CARBON-021109 2/11/2009	POST CARBON-021809 2/18/2009	POST CARBON-022609 2/26/2009	POST CARBON-041409 4/14/2009	POST CARBON-100809 10/8/2009	Post-Carbon-010810 1/8/2010
1,1,1-Trichloroethane	1	15	45	1.9	13000	0.56	450
1,1,2,2-Tetrachloroethane	0.34 U	1.7 U	0.68 U	0.68 U	68 U	0.34 U	0.34 U
1,1,2-Trichloroethane	0.27 U	1.4 U	0.54 U	0.54 U	54 U	0.27 U	0.27 U
1,1-Dichloroethane	0.2 U	1 U	5.4	11000	490	370	610
1,1-Dichloroethene	0.2 U	1 U	0.4 U	6400	96	78	87
1,2,4-Trichlorobenzene	0.37 U	1.9 U	0.74 U	0.74 U	74 U	0.37 U	0.37 U
1,2,4-Trimethylbenzene	0.25 U	1.3 U	0.5 U	0.5 U	50 U	0.25 U	0.25 U
1,2-Dibromoethane (EDB)	0.38 U	1.9 U	0.76 U	0.76 U	76 U	0.38 U	0.38 U
1,2-Dichlorobenzene	0.3 U	1.5 U	0.6 U	0.6 U	60 U	0.3 U	0.3 U
1,2-Dichloroethane	0.2 U	1 U	0.4 U	0.4 U	40 U	0.2 U	0.2 U
1,2-Dichloropropane	0.23 U	1.2 U	0.46 U	0.46 U	46 U	0.23 U	0.23 U
1,2-Dichlorotetrafluoroethane	0.35 U	1.8 U	0.7 U	0.7 U	70 U	0.35 U	0.35 U
1,3,5-Trimethylbenzene	2.1	1.3 U	0.5 U	0.5 U	50 U	0.25 U	0.25 U
1,3-Butadiene	0.11 U	0.55 U	0.22 U	0.22 U	22 U	0.23 U	0.23 U
1,3-Dichlorobenzene	2.9	1.5 U	0.6 U	0.6 U	60 U	0.3 U	0.3 U
1,4-Dichlorobenzene	0.3 U	1.5 U	0.6 U	0.6 U	60 U	0.3 U	0.3 U
1,4-Dioxane							
2-Butanone	10	6.3	9.4	5.5	330	1.9	2.0
2-Hexanone	0.2 U	1 U	0.4 U	0.4 U	13000	0.27	0.34
4-Ethyltoluene	2.1	1.3 U	0.5 U	0.5 U	50 U	0.25 U	0.25 U
4-Methyl-2-pentanone	5	1 U	0.4 U	0.4 U	40 U	0.2 U	0.2 U
Acetone	1200	11	19	12	430	3.6	5.7
Benzene	1.3	0.8 U	0.32 U	0.32 U	32 U	0.16 U	0.16 U
Benzyl chloride	0.26 U	1.3 U	0.52 U	0.52 U	52 U	0.26 U	0.26 U
Bromodichloromethane	0.33 U	1.7 U	0.66 U	0.66 U	66 U	0.33 U	0.33 U
Bromoform	0.51 U	2.6 U	1.1 U	1.1 U	110 U	0.51 U	0.51 U
Bromomethane	0.19 U	0.95 U	0.38 U	0.38 U	38 U	0.19 U	0.19 U
Carbon disulfide	0.16 U	0.8 U	4.1	27	250	0.16 U	0.20
Carbon tetrachloride	0.38	1.6 U	0.62 U	0.62 U	62 U	0.31 U	0.31 U
Chlorobenzene	0.23 U	1.2 U	0.46 U	0.46 U	46 U	0.23 U	0.23 U
Chloroethane	0.13 U	5100	1800	480	64	19	10
Chloroform	0.24 U	1.2 U	0.48 U	0.67	48 U	0.24 U	6.8
Chloromethane	0.59	0.5 U	0.2 U	0.2 U	23	0.1 U	0.1 U
cis-1,2-Dichloroethene	0.27	1 U	3.9	5200	820	230	570
cis-1,3-Dichloropropene	0.22 U	1.1 U	0.44 U	0.44 U	44 U	0.22 U	0.22 U
Cyclohexane	0.93	0.85 U	0.34 U	0.34 U	34 U	0.17 U	0.17 U
Dibromochloromethane	0.43 U	2.2 U	0.86 U	0.86 U	86 U	0.43 U	0.43 U
Dichlorodifluoromethane	0.76	4.1	3	2.4	50 U	1.7	1.9
Ethanol	740	36	25	9.8	110	0.38 U	2.8
Ethyl acetate	0.37 U	0.9 U	0.36 U	0.73 U	73 U	0.18 U	0.18 U

**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Post Treatment - Large Retail Space						
	Post carbon-020309 2/3/2009	POST CARBON-021109 2/11/2009	POST CARBON-021809 2/18/2009	POST CARBON-022609 2/26/2009	POST CARBON-041409 4/14/2009	POST CARBON-100809 10/8/2009	Post-Carbon-010810 1/8/2010
Ethylbenzene	10	1.1 U	0.44 U	0.44 U	44 U	0.22 U	0.22 U
Hexachlorobutadiene	1.1 U	5.4 U	2.2 U	2.2 U	220 U	0.53 U	0.53 U
Hexane	3	0.9 U	46	0.36 U	36 U	0.18 U	0.23
Isopropyl alcohol	450	2.9	3.1	47	290	0.25 U	1.4
m,p-Xylene	27	2.2 U	0.86 U	0.86 U	86 U	0.43 U	0.43 U
Methyl methacrylate							
Methylene chloride	20	76	17	3	810	0.7 U	0.72
Methyl-t-butyl ether	0.18 U	0.9 U	0.36 U	0.36 U	36 U	0.18 U	0.18 U
n-Heptane	1.8	1 U	0.4 U	0.4 U	40 U	0.2 U	0.2 U
o-Xylene	9.5	1.1 U	0.44 U	0.44 U	44 U	0.22 U	0.22 U
Propylene (Propene)	0.18 U	98	0.18 U	0.35 U	35 U	0.35 U	0.35 U
Styrene	3.4	1.1 U	0.42 U	0.42 U	42 U	0.21 U	0.21 U
Tetrachloroethene	0.72	1.7 U	1.1	0.68 U	68 U	0.52	1.9
Tetrahydrofuran	6.8	22	40	18	210	4.1	6.5
Toluene	29	0.95 U	0.65	0.38 U	38 U	0.19 U	0.36
trans-1,2-Dichloroethene	0.2 U	1 U	0.4 U	28	40 U	7.7	15
trans-1,3-Dichloropropene	0.22 U	1.1 U	0.44 U	0.44 U	44 U	0.22 U	0.22 U
Trichloroethene	2	11	16	2.7	54 U	1	1.0
Trichlorofluoromethane	0.71	1.4 U	23	6700	84	180	210
Trichlorotrifluoroethane	1.3	1.9 U	0.76 U	0.76 U	76 U	0.38 U	0.51
Vinyl acetate	0.71 U	0.9 U	0.36 U	1.5 U	150 U	0.71 U	0.71 U
Vinyl chloride	0.13 U	30	13	4.5	26 U	0.13 U	0.13 U



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Summary of Analytical Results - Air Sampling for Large Retail Space  
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Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	CT IACTIND 2003 (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space													
		IA-1 1/16/2009	IA-1-020309 2/3/2009	IA-1-021109 2/11/2009	IA-1-021809 2/18/2009	IA-1-022609 2/26/2009	IA-1-030609 3/6/2009	IA-1-033109 3/31/2009	IA-1-041409 4/14/2009	IA-1-042409 4/24/2009	IA-1-091709 9/17/2009	IA-1-092409 9/24/2009	IA-1-100109 10/1/2009	IA-1-100809 10/8/2009	IA-1-120209 12/2/2009
1,1,1-Trichloroethane	500	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
1,1,2,2-Tetrachloroethane	0.14	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
1,1,2-Trichloroethane	12	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
1,1-Dichloroethane	430	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
1,1-Dichloroethene	20	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
1,2,4-Trichlorobenzene	NA	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	0.52 U
1,2,4-Trimethylbenzene	52	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
1,2-Dibromoethane (EDB)	0.038	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	0.27 U
1,2-Dichlorobenzene	410	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
1,2-Dichloroethane	0.31	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
1,2-Dichloropropane	0.42	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
1,2-Dichlorotetrafluoroethane	NA	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
1,3,5-Trimethylbenzene	52	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
1,3-Butadiene	NA	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
1,3-Dichlorobenzene	410	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
1,4-Dichlorobenzene	24	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
1,4-Dioxane	NA														
2-Butanone	500	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
2-Hexanone	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
4-Ethyltoluene	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
4-Methyl-2-pentanone	200	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
Acetone	500	18	7.7	19	21	10	8.7	14	12	310	11	18	13	10	13
Benzene	3.3	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
Benzyl chloride	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
Bromodichloromethane	0.46	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
Bromoform	7.3	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
Bromomethane	NA	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
Carbon disulfide	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
Carbon tetrachloride	0.54	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
Chlorobenzene	200	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
Chloroethane	500	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	0.1 U
Chloroform	0.5	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
Chloromethane	80	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
cis-1,2-Dichloroethene	100	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
cis-1,3-Dichloropropene	2.9	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
Cyclohexane	NA	0.17 U	0.17 U	0.49	0.61	0.17 U	0.17 U	0.17 U	0.12 U	0.34	0.18 U	0.17 U	0.17 U	0.17 U	0.28
Dibromochloromethane	NA	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
Dichlorodifluoromethane	500	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
Ethanol	NA	5.7	8.3	14	20	9.8	7.5	18	5	39	6.2	7	6.5	8.8	10
Ethyl acetate	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	0.13 U



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Parameter (ug/m <sup>3</sup> )	CT IACTIND 2003 (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space													
		IA-1 1/16/2009	IA-1-020309 2/3/2009	IA-1-021109 2/11/2009	IA-1-021809 2/18/2009	IA-1-022609 2/26/2009	IA-1-030609 3/6/2009	IA-1-033109 3/31/2009	IA-1-041409 4/14/2009	IA-1-042409 4/24/2009	IA-1-091709 9/17/2009	IA-1-092409 9/24/2009	IA-1-100109 10/1/2009	IA-1-100809 10/8/2009	IA-1-120209 12/2/2009
Ethylbenzene	290	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
Hexachlorobutadiene	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
Hexane	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
Isopropyl alcohol	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
m,p-Xylene	500	0.76	0.87	2.1	2.8	0.8	0.43 U	0.63	0.31 U	2.5	0.79	0.91	0.73	1	1.4
Methyl methacrylate	NA														
Methylene chloride	17	2.3	<b>33</b>	2.3	1.8	4.4	1.1	6.7	3.5	4.8	1.6	3.6	0.7 U	0.7 U	2.9
Methyl-t-butyl ether	190	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.13 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.13 U
n-Heptane	NA	0.23	0.2 U	0.59	0.75	0.2 U	0.2 U	0.2 U	0.14 U	0.67	0.2 U	0.2 U	0.2 U	0.26	0.42
o-Xylene	500	0.26	0.33	0.76	0.99	0.3	0.22 U	0.22 U	0.16 U	0.7	0.31	0.4	0.28	0.4	0.52
Propylene (Propene)	NA	0.18 U	0.18 U	0.09 U	0.09 U	0.18 U	0.09 U	0.09 U	0.13 U	0.18 U	0.35 U	0.35 U	0.18 U	0.35 U	0.25 U
Styrene	290	0.21 U	0.21 U	0.21	0.28	0.21 U	0.21 U	0.21 U	0.15 U	0.24	0.21 U	0.21 U	0.21 U	0.21 U	0.19
Tetrachloroethene	5	<b>6.6</b>	0.57	4.2	3.2	2.6	4.9	1.5	1.9	<b>6.1</b>	0.34 U	0.34 U	2	1.1	3.2
Tetrahydrofuran	NA	12	1.2	1.3	0.48	0.32	0.15 U	0.15 U	0.23	0.4	0.15 U	0.15 U	0.15 U	0.15 U	0.11 U
Toluene	500	1.7	1.4	4	5.7	2.3	0.93	1.7	0.72	5.7	1.3	1.1	0.78	1.2	2.8
trans-1,2-Dichloroethene	200	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
trans-1,3-Dichloropropene	2.9	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
Trichloroethene	1	<b>4.2</b>	0.46	<b>1.6</b>	<b>1.4</b>	0.65	<b>1.5</b>	0.57	0.74	<b>1.6</b>	0.27 U	0.27 U	<b>1.1</b>	0.56	0.69
Trichlorofluoromethane	500	2.1	1.4	1.7	3.1	1.6	1.7	1.2	1.2	1.5	1.4	1.3	1.2	1.2	1.3
Trichlorotrifluoroethane	NA	0.65	0.64	0.47	0.46	0.67	0.48	0.59	0.54	1.7	0.48	0.44	0.45	0.51	0.52
Vinyl acetate	NA	0.71 U	0.71 U	0.18 U	0.18 U	0.71 U	0.18 U	0.18 U	0.5 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.25 U
Vinyl chloride	1.9	0.26	0.13 U	0.22	0.21	0.13 U	0.19	0.13 U	0.1 U	0.16	0.13 U	0.13 U	0.17	0.13 U	0.1 U

**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space														
	IA-1-010810 1/8/2010	IA-1-012810 1/28/2010	IA-1-020510 2/5/2010	IA-1-021210 2/12/2010	IA-1-021910 2/19/2010	IA-1-032610 3/26/2010	IA-1-043010 4/30/2010	IA-1-052810 5/28/2010	IA-1-070110 7/1/2010	IA-1-091610 9/16/2010	IA-1-120710 12/7/2010	IA-1-021711 2/17/2011	IA-1-060211 6/2/2011	IA-2 1/16/2009	IA-2-020309 2/3/2009
1,1,1-Trichloroethane	0.27 U	0.27 U	0.76	0.30	0.88	0.27 U	1.2	0.33	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	9.9	0.63
1,1,2,2-Tetrachloroethane	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	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	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	0.72	0.2 U
1,1-Dichloroethene	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	0.41	0.2 U
1,2,4-Trichlorobenzene	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
1,2,4-Trimethylbenzene	0.37	0.25 U	0.26	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 U	0.37
1,2-Dibromoethane (EDB)	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	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	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	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	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	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	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
1,3-Dichlorobenzene	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	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															
2-Butanone	1.6	0.3 U	2.4	1.1	1.2	1.3	0.78	2.6	3.3	0.85	0.68	1.7 B	2.9 U	21	4.1
2-Hexanone	0.36	0.2 U	0.47	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	0.2 U	0.2 U
4-Ethyltoluene	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	0.2 U	0.2 U	0.2 U	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	0.2 U	0.2 U
Acetone	12	2.0	19	7.3	8.5	7	6.5	18	18	11	12 B	15 B	11 B	17	9.6
Benzene	1.2	0.16 U	0.98	0.64	0.53	0.59	0.64	0.5	0.46	0.8	0.49	1.5	0.25	1	0.67
Benzyl chloride	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	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	0.33 U	0.33 U
Bromoform	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	0.51 U	0.51 U
Bromomethane	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	0.16 U	0.16 U	0.16 U	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	0.16 U	0.16 U
Carbon tetrachloride	0.43	0.31 U	0.40	0.31 U	0.45	0.44	0.48	0.55	0.52	0.5	0.46	0.47	0.53	0.33	0.41
Chlorobenzene	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	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	0.26	0.24 U	0.47	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 U	0.24 U
Chloromethane	1.1	1.4	1.3	1.3	1.2	1.3	0.79	1.2	1.2	1.1	0.97	1	0.92	1.1	1
cis-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	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	2.1	0.24
cis-1,3-Dichloropropene	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	0.22 U	0.22 U
Cyclohexane	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	0.22	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Dibromochloromethane	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	3.1	2.4	2.4	2.6	3.0	1.6	2.2	2.3	2.7	1.7	2	3.1	1.5	1.8	2.2
Ethanol	8.4	7.0	29	19	43	4.6	4.4	6	6.5	9	2.7	9	2.8	5.5	8.8
Ethyl acetate	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	0.37 U	0.37 U



**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space														
	IA-1-010810 1/8/2010	IA-1-012810 1/28/2010	IA-1-020510 2/5/2010	IA-1-021210 2/12/2010	IA-1-021910 2/19/2010	IA-1-032610 3/26/2010	IA-1-043010 4/30/2010	IA-1-052810 5/28/2010	IA-1-070110 7/1/2010	IA-1-091610 9/16/2010	IA-1-120710 12/7/2010	IA-1-021711 2/17/2011	IA-1-060211 6/2/2011	IA-2 1/16/2009	IA-2-020309 2/3/2009
Ethylbenzene	0.40	0.22 U	0.32	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	0.26	0.28
Hexachlorobutadiene	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	1.1 U	1.1 U
Hexane	0.74	0.18 U	0.82	1.3	0.45	0.2	1.1	0.8	0.46	0.61	0.35 U	1.9	0.43	0.88	0.57
Isopropyl alcohol	2.4	0.25 U	9.4	0.25 U	1.6	0.65	3.4	0.12 U	0.74	1.4	0.25 U	1.7	1.2 U	3.7	3.1
m,p-Xylene	1.1	0.43 U	1.0	0.43 U	0.43 U	0.5	0.77	1.1	1.2	1.7	0.43 U	1.6	0.42 J	0.76	0.88
Methyl methacrylate											0.2 U	0.2 U	0.2 U		
Methylene chloride	0.7 U	1.4	1.5	1.9	0.7 U	0.7 U	0.7 U	0.35 U	1.2	0.56	0.56	4.8	1.3	2	30
Methyl-t-butyl ether	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
n-Heptane	0.35	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.36	0.2 U	0.5	0.2 U	0.23	0.2 U
o-Xylene	0.44	0.22 U	0.38	0.22 U	0.22 U	0.22 U	0.28	0.46	0.51	0.69	0.22 U	0.56	0.22 U	0.3	0.34
Propylene (Propene)	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.87 U	0.87 U	0.35 U	0.86 U	0.86 U	0.86 U	0.18 U	0.18 U
Styrene	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.25	0.31	0.24	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Tetrachloroethene	0.34 U	0.34 U	0.34 U	0.34 U	1.2	0.34 U	4.5	0.55	1.1	0.34 U	3.3	5.6 [a]	0.34 U	7.5	0.64
Tetrahydrofuran	0.15 U	0.15 U	0.15 U	0.15 U	0.22	0.15 U	0.15 U	0.15 U	0.24	0.16	0.15 U	0.15 U	0.15 U	12	1.2
Toluene	2.1	0.19 U	0.82	0.69	0.58	0.8	1.3	0.91	0.99	2.5	0.44	3	0.58	1.7	1.3
trans-1,2-Dichloroethene	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
trans-1,3-Dichloropropene	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	0.22 U	0.22 U
Trichloroethene	0.27 U	0.27 U	0.27 U	0.31	0.39	0.27 U	1.5	0.27 U	0.4	0.27 U	1.7	0.27 U	0.27 U	4.4	0.56
Trichlorofluoromethane	2.5	0.81	1.3	1.5	1.5	1.4	1.2	1.3	1.4	2.7	1.2	1.7	1.1	2	1.2
Trichlorotrifluoroethane	0.63	0.38 U	0.71	0.63	0.55	0.55	0.48	0.59	0.53	0.48	0.57	0.64	0.67	0.69	0.58
Vinyl acetate	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.36 U	0.71 U	0.18 U	0.18 U	0.36 U	0.35 U	0.18 U	3.5 U	0.71 U	0.71 U
Vinyl chloride	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	0.14	0.13 U	0.13 U	0.27	0.13 U



**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space														
	IA-2-021109 2/11/2009	IA-2-021809 2/18/2009	IA-2-022609 2/26/2009	IA-2-041409 4/14/2009	IA-2-042409 4/24/2009	IA-2-091709 9/17/2009	IA-2-092409 9/24/2009	IA-2-100109 10/1/2009	IA-2-100809 10/8/2009	IA-2-012810 1/28/2010	IA-2-020510 2/5/2010	IA-2-021210 2/12/2010	IA-2-021910 2/19/2010	IA-2-032610 3/26/2010	IA-2-043010 4/30/2010
1,1,1-Trichloroethane	1.1	1.1	0.44	1.4	2.1	0.27 U	0.27 U	0.27 U	0.27 U	0.44	0.73	0.27 U	0.27 U	0.27 U	1
1,1,2,2-Tetrachloroethane	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
1,1,2-Trichloroethane	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
1,1-Dichloroethane	0.2 U	0.2 U	0.32	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
1,1-Dichloroethene	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
1,2,4-Trichlorobenzene	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	0.37 U	0.37 U	0.37 U	0.75 U	0.37 U
1,2,4-Trimethylbenzene	0.7	0.65	0.3	0.18 U	0.25 U	0.29	0.39	0.27	0.52	0.55	0.25 U	0.25 U	0.25 U	0.25 U	0.31
1,2-Dibromoethane (EDB)	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
1,2-Dichlorobenzene	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
1,2-Dichloroethane	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
1,2-Dichloropropane	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
1,2-Dichlorotetrafluoroethane	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
1,3,5-Trimethylbenzene	0.25	0.25 U	0.25 U	0.18 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.59	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Butadiene	0.3	0.66	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
1,3-Dichlorobenzene	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
1,4-Dichlorobenzene	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	0.34	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dioxane															
2-Butanone	4.6	3	2.9	0.95	1.6	1.1	2.3	0.81	1	2.1	0.70	0.44	0.3 U	0.96	1.3
2-Hexanone	0.35	0.26	0.2 U	0.14 U	0.2 U	0.25	0.54	0.2 U	0.26	0.51	0.2 U	0.2 U	0.2 U	0.2 U	0.26
4-Ethyltoluene	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
4-Methyl-2-pentanone	0.35	0.2 U	0.2 U	0.14 U	0.2 U	0.2 U	0.39	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	14	18	9.7	13	39	6.2	17	11	8.8	17	7.8	3.1	0.48 U	6.3	8.2
Benzene	1.8	3	0.77	0.58	0.44	0.41	0.47	0.39	0.54	1.2	0.86	0.67	0.16 U	0.58	0.63
Benzyl chloride	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
Bromodichloromethane	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
Bromoform	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
Bromomethane	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
Carbon disulfide	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
Carbon tetrachloride	0.55	0.57	0.48	0.41	0.41	0.44	0.4	0.46	0.42	0.31 U	0.40	0.31 U	0.31 U	0.43	0.47
Chlorobenzene	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
Chloroethane	0.42	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
Chloroform	0.24 U	0.24 U	0.25	0.17 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.47	0.40	0.24 U	0.24 U	0.24 U
Chloromethane	1.3	1.3	1	1.1	1.2	0.91	1.1	0.96	0.98	1.2	1.3	1.3	1.4	1.3	0.8
cis-1,2-Dichloroethene	1.1	1.1	0.95	0.59	1.6	0.2 U	0.2 U	0.79	0.48	0.58	0.2 U	0.2 U	0.2 U	0.2 U	1
cis-1,3-Dichloropropene	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
Cyclohexane	0.44	0.61	0.17 U	0.12 U	0.22	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	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
Dichlorodifluoromethane	2.6	2.9	2.7	2.1	2.9	2	2.1	2.3	2.1	2.2	2.5	2.6	3.0	1.6	2.0
Ethanol	12	17	7.9	4.9	7.5	4.8	6.7	7.8	6.2	14	35	17	20	4.4	4.9
Ethyl acetate	0.18 U	0.18 U	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

**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space														
	IA-2-021109 2/11/2009	IA-2-021809 2/18/2009	IA-2-022609 2/26/2009	IA-2-041409 4/14/2009	IA-2-042409 4/24/2009	IA-2-091709 9/17/2009	IA-2-092409 9/24/2009	IA-2-100109 10/1/2009	IA-2-100809 10/8/2009	IA-2-012810 1/28/2010	IA-2-020510 2/5/2010	IA-2-021210 2/12/2010	IA-2-021910 2/19/2010	IA-2-032610 3/26/2010	IA-2-043010 4/30/2010
Ethylbenzene	0.65	0.79	0.3	0.18	0.22 U	0.22 U	0.22	0.22 U	0.31	0.42	0.34	0.22 U	0.22 U	0.22 U	0.23
Hexachlorobutadiene	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	0.53 U	0.53 U	0.53 U	0.53 U	1.1 U	0.53 U
Hexane	1.3	1.6	0.69	0.72	0.74	0.41	0.42	0.71	1	0.61	0.64	1.4	0.18 U	0.27	1.6
Isopropyl alcohol	4.5	4.5	4.7	5.6	28	340	5.7	3.3	0.25 U	0.25 U	3.6	0.25 U	0.25 U	0.63	3.2
m,p-Xylene	2	2.6	0.93	0.61	0.63	0.71	0.93	0.78	1.1	1.3	1.1	0.43 U	0.43 U	0.47	0.75
Methyl methacrylate															
Methylene chloride	4	1.6	1.8	4	4.2	0.7 U	0.7 U	0.7 U	0.7 U	1.4	0.90	1.9	0.7 U	0.7 U	0.7 U
Methyl-t-butyl ether	0.18 U	0.18 U	0.18 U	0.13 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
n-Heptane	0.58	0.73	0.22	0.15	0.2 U	0.2 U	0.2 U	0.2 U	0.34	0.83	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
o-Xylene	0.76	0.89	0.34	0.22	0.22	0.27	0.42	0.3	0.44	0.46	0.40	0.22 U	0.22 U	0.22 U	0.29
Propylene (Propene)	0.09 U	0.09 U	0.18 U	0.13 U	0.18 U	0.35 U	0.35 U	0.18 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
Styrene	0.21 U	0.23	0.21 U	0.15 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.41	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Tetrachloroethene	4.2	3.2	3.3	2.2	7.6	0.34 U	0.35	1.7	1	2.3	0.34 U	0.34 U	0.34 U	0.34 U	3.6
Tetrahydrofuran	1.2	0.49	0.41	0.21	0.28	0.15 U	0.15 U	0.15 U	0.15 U	1.6	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	4	5.5	2.3	1	1.2	1.1	1.1	1.2	1.5	2.4	0.93	0.64	0.19 U	0.8	1.3
trans-1,2-Dichloroethene	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
trans-1,3-Dichloropropene	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
Trichloroethene	1.6	1.4	0.91	0.77	1.9	0.27 U	0.27 U	0.99	0.57	0.79	0.27 U	0.27 U	0.27 U	0.27 U	1.2
Trichlorofluoromethane	1.7	2.8	1.6	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.3	1.4	1.1	1.4	1.3
Trichlorotrifluoroethane	0.49	0.46	0.64	0.56	0.74	0.5	0.47	0.46	0.54	0.46	0.53	0.61	0.38 U	0.51	0.44
Vinyl acetate	0.18 U	0.18 U	0.71 U	0.5 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.36 U	0.71 U
Vinyl chloride	0.18	0.2	0.13 U	0.1 U	0.18	0.13 U	0.13 U	0.16	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U



**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space														
	IA-2-091610 9/16/2010	IA-2-070110 7/1/2010	IA-2-091610 9/16/2010	IA-2-120710 12/7/2010	IA-2-021711 2/17/2011	IA-2-060211 6/2/2011	IA-3-1/16/2009	IA-3-020309 2/3/2009	IA-3-021109 2/11/2009	IA-3-021809 2/18/2009	IA-3-022609 2/26/2009	IA-3-041409 4/14/2009	IA-3-042409 4/24/2009	IA-3-091709 9/17/2009	IA-3-092409 9/24/2009
1,1,1-Trichloroethane	0.27 U	0.28	0.27 U	0.27 U	0.27 U	0.27 U	9.8	0.57	1.1	1.1	0.28	1.5	2.2	0.27 U	0.27 U
1,1,2,2-Tetrachloroethane	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	0.24 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	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	0.19 U	0.27 U	0.27 U	0.27 U
1,1-Dichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.68	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	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.35	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	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	0.26 U	0.37 U	0.37 U	0.37 U
1,2,4-Trimethylbenzene	0.35	0.48	0.52	0.25 U	0.52	0.25 U	0.25 U	0.36	0.68	0.61	0.25 U	0.18 U	0.25 U	0.29	0.4
1,2-Dibromoethane (EDB)	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	0.27 U	0.38 U	0.38 U	0.38 U
1,2-Dichlorobenzene	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	0.21 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethane	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	0.14 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	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	0.17 U	0.23 U	0.23 U	0.23 U
1,2-Dichlorotetrafluoroethane	0.35 U	0.35 U	0.35 U				0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.25 U	0.35 U	0.35 U	0.35 U
1,3,5-Trimethylbenzene	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	0.18 U	0.25 U	0.25 U	0.25 U
1,3-Butadiene	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.3	0.77	0.11 U	0.08 U	0.11 U	0.23 U	0.23 U
1,3-Dichlorobenzene	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	0.21 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	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	0.21 U	0.3 U	0.3 U	0.3 U
1,4-Dioxane															
2-Butanone	3.1	3.4	0.96	0.36	1.9 B	2.9 U	20	4.2	4.6	4	1.7	1.6	2.5	2	2.6
2-Hexanone	0.84	0.68	0.2 U	0.2 U	0.24	4.1 U	0.2 U	0.26	0.33	0.3	0.2 U	0.14 U	0.38	0.51	0.58
4-Ethyltoluene	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	0.18 U	0.25 U	0.25 U	0.25 U
4-Methyl-2-pentanone	0.28	0.49	0.34	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.29	0.34	0.2 U	0.14 U	0.22	0.2 U	0.42
Acetone	18	20	11	9.8 B	15 B	8.9 B	18	12	17	24	9.7	7.5	50	11	19
Benzene	0.47	0.48	0.72	0.48	1.5	0.26	1	0.71	1.9	3.1	0.69	0.6	0.46	0.41	0.5
Benzyl chloride	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	0.19 U	0.26 U	0.26 U	0.26 U
Bromodichloromethane	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U	0.34 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	0.51 U	0.51 U	0.51 U	0.52 U	0.52 U	0.52 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	0.19 U	0.22	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	0.14 U	0.19 U	0.19 U	0.19 U
Carbon disulfide	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	0.12 U	0.16 U	0.16 U	0.16 U
Carbon tetrachloride	0.5	0.52	0.5	0.48	0.31 U	0.62	0.34	0.45	0.52	0.6	0.43	0.22 U	0.42	0.4	0.43
Chlorobenzene	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	0.17 U	0.23 U	0.23 U	0.23 U
Chloroethane	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.43	0.13 U	0.13 U	0.1 U	0.13 U	0.13 U	0.13 U
Chloroform	0.24 U	0.24 U	3.4	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.17 U	0.24 U	0.24 U	0.24 U
Chloromethane	1.2	1.2	1.1	0.96	0.97	0.95	1.1	0.98	1.2	1.4	1.1	1.2	1.2	0.91	1.1
cis-1,2-Dichloroethene	0.2 U	0.61	0.2 U	1.7	0.2 U	0.2 U	1.9	0.2 U	1.1	1.1	0.55	0.61	1.5	0.2 U	0.2 U
cis-1,3-Dichloropropene	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.23 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	0.17 U	0.17 U	0.2	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.46	0.6	0.17 U	0.15	0.17 U	0.17 U	0.17 U
Dibromochloromethane	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	0.31 U	0.43 U	0.43 U	0.43 U
Dichlorodifluoromethane	2.4	2.6	1.7	1.9	3.2	1.6	1.9	2.3	2.5	2.9	2.6	2	2.9	2.1	2.1
Ethanol	5	7.6	9	2.7	10	2.5	5.5	9.2	13	18	7.9	4.2	9	6.2	7.5
Ethyl acetate	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 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	0.18 U



**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space														
	IA-2-091610 9/16/2010	IA-2-070110 7/1/2010	IA-2-091610 9/16/2010	IA-2-120710 12/7/2010	IA-2-021711 2/17/2011	IA-2-060211 6/2/2011	IA-3-1/16/2009	IA-3-020309 2/3/2009	IA-3-021109 2/11/2009	IA-3-021809 2/18/2009	IA-3-022609 2/26/2009	IA-3-041409 4/14/2009	IA-3-042409 4/24/2009	IA-3-091709 9/17/2009	IA-3-092409 9/24/2009
Ethylbenzene	0.24	0.29	0.46	0.22 U	0.5	0.22 U	0.25	0.29	0.64	0.77	0.22 U	0.16	0.22 U	0.22 U	0.23
Hexachlorobutadiene	0.53 U	0.53 U	0.53 U	0.53 U	0.53 U	0.53 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
Hexane	0.51	0.49	0.53	0.35 U	1.6	0.31	0.94	0.87	1.3	1.9	3.7	0.37	0.77	0.96	0.47
Isopropyl alcohol	0.12 U	1.2	0.25 U	0.25 U	2	1.2 U	3.5	4.1	5.5	4.9	3.1	0.18 U	33	180	5.9
m,p-Xylene	0.96	1.3	1.5	0.43 U	1.5	0.36 J	0.75	0.9	2	2.6	0.65	0.57	0.66	0.7	0.99
Methyl methacrylate				0.2 U	0.2 U	0.2 U									
Methylene chloride	0.35 U	1.3	0.53	0.61	4.2	1	2.2	31	3.1	3.5	33	1.2	3.6	2.4	0.7 U
Methyl-t-butyl ether	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	0.13 U	0.18 U	0.18 U	0.18 U
n-Heptane	0.2 U	0.8	0.34	0.2 U	0.48	0.2 U	0.22	0.2 U	0.61	0.77	0.2 U	0.14 U	0.2 U	0.2 U	0.2 U
o-Xylene	0.44	0.57	0.63	0.22 U	0.56	0.22 U	0.28	0.33	0.79	0.86	0.23	0.22	0.24	0.26	0.45
Propylene (Propene)	0.87 U	0.87 U	0.35 U	0.86 U	0.86 U	0.86 U	0.18 U	0.18 U	0.09 U	0.09 U	0.18 U	0.13 U	0.18 U	0.35 U	0.35 U
Styrene	0.25	0.36	0.24	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.15 U	0.21 U	0.21 U	0.21 U
Tetrachloroethene	0.43	1.4	0.34 U	3.2	5.2 [a]	0.34 U	6.1	0.56	4.3	3.3	1.9	2.2	7.1	0.34 U	0.34 U
Tetrahydrofuran	0.15 U	0.27	0.15 U	0.15 U	0.15 U	0.15 U	12	1.1	1.3	0.49	0.15 U	0.24	0.15 U	0.15 U	0.15 U
Toluene	0.91	1.3	2.2	0.41	2.9	0.55	1.7	1.5	4.7	5.8	2.1	1	1.2	1.2	1.1
trans-1,2-Dichloroethene	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	0.14 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.23 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
Trichloroethene	0.27 U	0.53	0.27 U	1.7	0.27 U	0.27 U	3.9	0.49	1.7	1.5	0.53	0.77	1.8	0.27 U	0.27 U
Trichlorofluoromethane	1.3	1.6	2.5	1.2	1.8	1.2	1.9	1.3	1.8	2.8	1.8	1.2	1.3	1.4	1.2
Trichlorotrifluoroethane	0.53	0.94	0.45	0.59	0.71	0.71	0.6	0.58	0.49	0.44	0.69	0.53	0.74	0.51	0.46
Vinyl acetate	0.18 U	0.18 U	0.36 U	0.35 U	0.18 U	3.5 U	0.71 U	0.71 U	0.18 U	0.18 U	0.71 U	0.5 U	0.71 U	0.71 U	0.71 U
Vinyl chloride	0.13 U	0.13 U	0.13 U	0.14	0.13 U	0.13 U	0.23	0.13 U	0.19	0.21	0.13 U	0.1 U	0.17	0.13 U	0.13 U

**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
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**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space													
	IA-3-100109 10/1/2009	IA-3-100809 10/8/2009	IA-3-012810 1/28/2010	IA-3-020510 2/5/2010	IA-3-021210 2/12/2010	IA-3-021910 2/19/2010	IA-3-032610 3/26/2010	IA-3-043010 4/30/2010	IA-3-052810 5/28/2010	IA-3-070110 7/1/2010	IA-3-091610 9/16/2010	IA-3-120710 12/7/2010	IA-3-021711 2/17/2011	IA-3-060211 6/2/2011
1,1,1-Trichloroethane	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
1,1,2,2-Tetrachloroethane	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	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	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	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	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
1,2,4-Trimethylbenzene	0.25 U	0.39	0.44	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
1,2-Dibromoethane (EDB)	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	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	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	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	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	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
1,3-Butadiene	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
1,3-Dichlorobenzene	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	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														
2-Butanone	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
2-Hexanone	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
4-Ethyltoluene	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	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
Acetone	6.7	11	14	21	6.7	7.3	3.8	7.7	15	21	11	9.7 B	9.7 B	11 B
Benzene	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
Benzyl chloride	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	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
Bromoform	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
Bromomethane	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	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	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
Chlorobenzene	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	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	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	3.7	0.24 U	0.24 U	0.24 U
Chloromethane	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
cis-1,2-Dichloroethene	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
cis-1,3-Dichloropropene	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	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	0.18	0.17 U	0.17 U	0.17 U
Dibromochloromethane	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	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
Ethanol	4.5	5	13	40	17	38	3.6	5.3	5.5	7	8	2.4	9.4	3.6
Ethyl acetate	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



**Table 3.  
Summary of Analytical Results - Air Sampling for Large Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space													
	IA-3-100109 10/1/2009	IA-3-100809 10/8/2009	IA-3-012810 1/28/2010	IA-3-020510 2/5/2010	IA-3-021210 2/12/2010	IA-3-021910 2/19/2010	IA-3-032610 3/26/2010	IA-3-043010 4/30/2010	IA-3-052810 5/28/2010	IA-3-070110 7/1/2010	IA-3-091610 9/16/2010	IA-3-120710 12/7/2010	IA-3-021711 2/17/2011	IA-3-060211 6/2/2011
Ethylbenzene	0.22 U	0.24	0.43	0.22 U	0.22 U	0.22 U	0.22 U	0.26	0.23	0.29	0.47	0.22 U	0.47	0.36
Hexachlorobutadiene	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
Hexane	0.37	0.71	0.55	0.44	1	0.29	0.19	1.4	0.55	0.45	0.58	0.35 U	1.5	2.6
Isopropyl alcohol	0.25 U	0.25 U	0.25 U	9.9	0.25 U	2	0.64	3.4	0.12 U	0.76	8.8	1.1	1.7	1.2 U
m,p-Xylene	0.65	0.87	1.2	0.69	0.43 U	0.43 U	0.46	0.8	0.99	1.3	1.6	0.43 U	1.4	0.55
Methyl methacrylate												0.2 U	0.2 U	0.2 U
Methylene chloride	0.7 U	0.7 U	1.4	0.7 U	2.3	0.7 U	0.7 U	0.7 U	0.35 U	1.2	0.57	0.55	4.6	8
Methyl-t-butyl ether	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
n-Heptane	0.2 U	0.24	0.73	0.2 U	0.2 U	0.2 U	0.2 U	0.36	0.2 U	0.2 U	0.32	0.2 U	0.44	0.2 U
o-Xylene	0.27	0.34	0.44	0.26	0.22 U	0.22 U	0.22 U	0.32	0.43	0.58	0.64	0.22 U	0.48	0.23
Propylene (Propene)	0.18 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.87 U	0.87 U	0.35 U	0.86 U	0.86 U	0.86 U
Styrene	0.21 U	0.21 U	0.40	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.23	0.34	0.26	0.21 U	0.21 U	0.21 U
Tetrachloroethene	2	1.1	2.2	0.34 U	0.34 U	1.3	0.34 U	4.8	0.35	1.1	0.76	3.2	5.2 [a]	0.34 U
Tetrahydrofuran	0.15 U	0.15 U	0.40	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.16	0.24	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	0.73	1.1	2.5	0.78	0.61	0.46	0.81	1.5	0.93	1.1	2.3	0.41	2.7	0.58
trans-1,2-Dichloroethene	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
trans-1,3-Dichloropropene	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
Trichloroethene	1.1	0.54	0.75	0.27 U	0.27 U	0.4	0.27 U	1.5	0.27 U	0.47	0.27 U	1.7	0.27 U	0.27 U
Trichlorofluoromethane	1.2	1.2	1.2	1.3	1.4	1.6	1.3	1.2	1.3	1.5	2.8	1.2	1.7	1.6
Trichlorotrifluoroethane	0.49	0.47	0.49	0.52	0.57	0.52	0.57	0.45	0.52	0.54	0.45	0.55	0.67	0.74
Vinyl acetate	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.36 U	0.71 U	0.18 U	0.18 U	0.36 U	0.35 U	0.18 U	3.5 U
Vinyl chloride	0.18	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.14	0.13 U	0.13 U	0.13 U	0.13	0.13 U	0.13 U



**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space														
	IA-4 1/16/2009	IA-4- 020309 2/3/2009	IA-4- 021109 2/11/2009	IA-4- 021809 2/18/2009	IA-4- 022609 2/26/2009	IA-4- 041409 4/14/2009	IA-4- 042409 4/24/2009	IA-4- 091709 9/17/2009	IA-4- 092409 9/24/2009	IA-4- 100109 10/1/2009	IA-4- 100809 10/8/2009	IA-4- 012810 1/28/2010	IA-4- 020510 2/5/2010	IA-4- 021210 2/12/2010	IA-4- 021910 2/19/2010
1,1,1-Trichloroethane	10	0.62	1.1	1.1	0.45	1.5	2.2	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.76	0.29	0.89
1,1,2,2-Tetrachloroethane	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
1,1,2-Trichloroethane	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
1,1-Dichloroethane	0.73	0.2 U	0.2 U	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
1,1-Dichloroethene	0.42	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
1,2,4-Trichlorobenzene	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	0.37 U	0.37 U	0.37 U
1,2,4-Trimethylbenzene	0.26	0.37	0.74	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
1,2-Dibromoethane (EDB)	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
1,2-Dichlorobenzene	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
1,2-Dichloroethane	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
1,2-Dichloropropane	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
1,2-Dichlorotetrafluoroethane	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
1,3,5-Trimethylbenzene	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
1,3-Butadiene	0.11 U	0.11 U	0.33	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
1,3-Dichlorobenzene	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
1,4-Dichlorobenzene	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
1,4-Dioxane															
2-Butanone	21	4.4	6	3.2	2.5	1.1	1.6	1.5	2	1.30	1.20	0.3 U	0.69	1.2	0.50
2-Hexanone	0.2 U	0.33	0.73	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
4-Ethyltoluene	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
4-Methyl-2-pentanone	0.2 U	0.2 U	0.43	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
Acetone	17	10	15	20	7.8	7.9	20	9.3	16	9.3	10	2.3	4.9	5.9	2.5
Benzene	1.1	0.68	1.8	3	0.76	0.59	0.44	0.4	0.43	0.37	0.48	0.16 U	0.88	0.66	0.54
Benzyl chloride	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
Bromodichloromethane	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
Bromoform	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
Bromomethane	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	0.19 U	0.19 U	0.19 U	0.19 U
Carbon disulfide	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
Carbon tetrachloride	0.4	0.43	0.5	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
Chlorobenzene	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
Chloroethane	0.13 U	0.13 U	0.41	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	0.24 U	0.24 U	0.24 U	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	0.46	0.39	0.24 U
Chloromethane	1.2	0.99	1.4	1.3	1	1.1	1.2	0.9	1.1	1	1	1.3	1.3	1.3	1.2
cis-1,2-Dichloroethene	2.4	0.2 U	1.1	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
cis-1,3-Dichloropropene	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
Cyclohexane	0.17 U	0.17 U	0.44	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
Dibromochloromethane	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
Dichlorodifluoromethane	1.9	2.2	2.5	2.8	2.6	2.1	2.4	2.1	2	2.2	2.2	2.4	2.5	2.6	3.0
Ethanol	5.3	8.9	12	18	8	5.2	5.5	6	6.5	4.9	5.6	7.7	34	17	31
Ethyl acetate	0.37 U	0.37 U	0.18 U	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

**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space														
	IA-4 1/16/2009	IA-4- 020309 2/3/2009	IA-4- 021109 2/11/2009	IA-4- 021809 2/18/2009	IA-4- 022609 2/26/2009	IA-4- 041409 4/14/2009	IA-4- 042409 4/24/2009	IA-4- 091709 9/17/2009	IA-4- 092409 9/24/2009	IA-4- 100109 10/1/2009	IA-4- 100809 10/8/2009	IA-4- 012810 1/28/2010	IA-4- 020510 2/5/2010	IA-4- 021210 2/12/2010	IA-4- 021910 2/19/2010
Ethylbenzene	0.25	0.29	0.65	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
Hexachlorobutadiene	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	0.53 U	0.53 U	0.53 U	0.53 U
Hexane	0.9	0.66	1.2	1.7	0.66	0.43	0.34	0.42	2.2	0.49	0.93	0.18 U	0.37	1.3	0.49
Isopropyl alcohol	3.5	3.3	4.7	4.8	3.9	0.18 U	13	5.6	5.2	0.25 U	0.25 U	0.96	0.25 U	0.25 U	1.9
m,p-Xylene	0.76	0.89	2.1	2.6	0.89	0.58	0.49	0.61	0.93	0.69	1	0.43 U	0.81	0.43 U	0.43 U
Methyl methacrylate															
Methylene chloride	2.3	<b>29</b>	1.7	2.5	1.3	1.9	2.2	0.7 U	9.7	0.7 U	0.7 U	1.5	0.7 U	1.9	0.71
Methyl-t-butyl ether	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.13 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
n-Heptane	0.23	0.2 U	0.58	0.79	0.21	0.14 U	0.2 U	0.2 U	0.2 U	0.2 U	0.26	0.2 U	0.2 U	0.2 U	0.2 U
o-Xylene	0.27	0.33	0.78	0.87	0.33	0.22	0.22 U	0.22 U	0.42	0.28	0.4	0.22 U	0.31	0.22 U	0.22 U
Propylene (Propene)	0.18 U	0.18 U	0.09 U	0.09 U	0.18 U	0.13 U	0.18 U	0.35 U	0.35 U	0.18 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
Styrene	0.21 U	0.21 U	0.22	0.23	0.21 U	0.15 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
Tetrachloroethene	<b>7.3</b>	0.58	4.4	3.4	3.4	2.4	<b>7.9</b>	0.75	0.34 U	2	1.1	0.34 U	0.34 U	0.34 U	1.4
Tetrahydrofuran	13	1.2	1.3	0.47	0.34	0.21	0.25	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	1.8	1.3	4.3	5.8	2.3	1	1	1.1	1.3	0.76	1.2	0.19 U	0.79	0.63	0.47
trans-1,2-Dichloroethene	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	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	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
Trichloroethene	<b>4.7</b>	0.48	<b>1.7</b>	<b>1.5</b>	0.88	0.78	<b>2</b>	0.27 U	0.27 U	<b>1.10</b>	0.57	0.27 U	0.27 U	0.27 U	0.40
Trichlorofluoromethane	2	1.3	1.6	3	1.7	1.3	1.3	1.2	1.5	1.2	1.2	0.93	1.3	1.4	1.6
Trichlorotrifluoroethane	0.72	0.59	0.51	0.45	0.57	0.54	0.61	0.49	0.48	0.47	0.5	0.38 U	0.55	0.58	0.55
Vinyl acetate	0.71 U	0.71 U	0.18 U	0.18 U	0.71 U	0.5 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U
Vinyl chloride	0.29	0.13 U	0.2	0.22	0.13 U	0.1 U	0.2	0.13 U	0.13 U	0.16	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U



**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space													
	IA-4-032610 3/26/2010	IA-4-043010 4/30/2010	IA-4-052810 5/28/2010	IA-4-070110 7/1/2010	IA-4-091610 9/16/2010	IA-4-120710 12/7/2010	IA-4-021711 2/17/2011	IA-4-060211 6/2/2011	LRAIR01 5/15/2009	LRAIR02 5/15/2009	LRAIR03 5/15/2009	LRAIR04 5/15/2009	LRAIR05 5/15/2009	LRAIR06 5/15/2009
1,1,1-Trichloroethane	0.27 U	1.1	0.28	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.45	0.52	0.65	0.57	0.51	0.44
1,1,2,2-Tetrachloroethane	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	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	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	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	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	0.37 U	0.37 U
1,2,4-Trimethylbenzene	0.25 U	0.25 U	0.34	0.41	0.44	0.25 U	0.49	0.25 U	0.25 U	0.25 U	0.25 U	0.29	0.25 U	0.25 U
1,2-Dibromoethane (EDB)	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	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	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	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	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	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	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
1,3-Dichlorobenzene	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	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														
2-Butanone	1.60	1.50	2.20	4.8	2.4	0.96	1 B	2.9 U	3.3	3.4	2.1	2.6	2	1.6
2-Hexanone	0.2 U	0.39	0.54	1	0.59	0.2 U	0.2 U	0.21 J	0.73	0.66	0.38	0.51	0.37	0.38
4-Ethyltoluene	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	0.2 U	0.2 U	0.2 U	0.43	0.45	0.2 U	0.2 U	0.2 U	0.42	0.39	0.32	0.36	0.54	0.27
Acetone	6.9	8.7	15	31	19	13 B	12 B	12 B	12	13	10	11	8.5	7.7
Benzene	0.57	0.64	0.48	0.47	0.66	0.49	1.4	0.31	0.54	0.6	0.67	0.55	0.56	0.51
Benzyl chloride	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	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.34 U	0.34 U	0.34 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
Bromoform	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.52 U	0.52 U	0.52 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U
Bromomethane	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	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	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Carbon tetrachloride	0.43	0.47	0.52	0.48	0.44	0.46	0.57	0.68	0.7	0.68	0.71	0.68	0.68	0.63
Chlorobenzene	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	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	0.24 U	0.24 U	0.24 U	0.24 U	3.3	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	1.1	0.77	1.2	1.2	1	0.95	0.95	1.1	1	0.98	1	0.95	1	1
cis-1,2-Dichloroethene	0.2 U	1.3	0.2 U	0.44	0.2 U	1.8	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	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.23 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Cyclohexane	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	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	1.7	2.1	2.5	2.6	1.5	2	3.2	1.8	2.5	2.3	2.6	2.4	2.7	2.4
Ethanol	3.9	4.9	6.1	8.7	9.8	3.4	8.9	5.3	65	9	6.5	5.9	6	5.6
Ethyl acetate	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.26	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U



**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space														
	IA-4-032610 3/26/2010	IA-4-043010 4/30/2010	IA-4-052810 5/28/2010	IA-4-070110 7/1/2010	IA-4-091610 9/16/2010	IA-4-120710 12/7/2010	IA-4-021711 2/17/2011	IA-4-060211 6/2/2011	LRAIR01 5/15/2009	LRAIR02 5/15/2009	LRAIR03 5/15/2009	LRAIR04 5/15/2009	LRAIR05 5/15/2009	LRAIR06 5/15/2009	
Ethylbenzene	0.22 U	0.25	0.25	0.29	0.44	0.22 U	0.49	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	
Hexachlorobutadiene	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	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	
Hexane	0.19	1.3	0.55	2.8	0.61	0.38	1.7	1	1.1	0.21	0.18 U	0.18	0.24	0.18 U	
Isopropyl alcohol	0.66	3.4	4.4	1.8	8.3	0.48	1.7	1.2 U	3.3	3.4	3.7	3.5	3.6	3.4	
m,p-Xylene	0.49	0.8	0.98	1.1	1.4	0.43 U	1.4	0.41 J	0.58	0.57	0.58	0.55	0.49	0.5	
Methyl methacrylate						0.2 U	0.2 U	0.2 U							
Methylene chloride	0.7 U	0.7 U	0.35 U	7.7	0.68	0.79	5.1	3.2	5.9	1.5	1.5	1.6	1.9	1.6	
Methyl-t-butyl ether	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	
n-Heptane	0.2 U	0.2 U	0.2 U	0.22	0.32	0.2 U	0.51	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
o-Xylene	0.22 U	0.3	0.44	0.5	0.57	0.22 U	0.53	0.22 U	0.28	0.28	0.27	0.27	0.25	0.26	
Propylene (Propene)	0.35 U	0.35 U	0.87 U	1.1	0.35 U	0.86 U	0.86 U	0.86 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	0.09 U	
Styrene	0.21 U	0.21 U	0.22	0.29	0.21 U	0.21 U	0.21 U	0.21 U	0.23	0.21 U	0.21 U	0.22	0.21 U	0.21 U	
Tetrachloroethene	0.34 U	4.4	0.44	1.1	0.34 U	3.4	5	0.34 U	0.47	0.47	0.54	0.66	0.64	0.6	
Tetrahydrofuran	0.15 U	0.15 U	0.19	0.24	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.2	0.15 U	
Toluene	0.83	1.4	0.98	1	2	0.43	2.7	0.56	0.73	0.7	0.58	0.59	0.51	0.53	
trans-1,2-Dichloroethene	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	
trans-1,3-Dichloropropene	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.23 U	0.23 U	0.23 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	
Trichloroethene	0.27 U	1.4	0.27 U	0.44	0.27 U	1.8	0.27 U	0.27 U	0.27 U	0.28	0.27	0.29	0.34	0.27	
Trichlorofluoromethane	1.5	1.3	1.3	1.9	2.4	1.2	1.8	1.4	1.3	1.3	1.2	1.1	1.4	1.3	
Trichlorotrifluoroethane	1.3	0.48	0.51	0.59	0.43	0.54	0.7	0.71	0.63	0.6	0.65	0.62	0.64	0.57	
Vinyl acetate	0.36 U	0.71 U	0.18 U	0.18 U	0.36 U	0.38	0.18 U	3.5 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	
Vinyl chloride	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.16	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	

**Table 3.**  
**Summary of Analytical Results - Air Sampling for Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space			
	LRAIR07 5/15/2009	LRAIR08 5/15/2009	LRAIR09 5/15/2009	LRAIR10 5/15/2009
1,1,1-Trichloroethane	0.69	0.5	0.49	0.53
1,1,2,2-Tetrachloroethane	0.34 U	0.34 U	0.34 U	0.34 U
1,1,2-Trichloroethane	0.27 U	0.27 U	0.27 U	0.27 U
1,1-Dichloroethane	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U
1,2,4-Trichlorobenzene	0.37 U	0.37 U	0.37 U	0.37 U
1,2,4-Trimethylbenzene	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromoethane (EDB)	0.38 U	0.38 U	0.38 U	0.38 U
1,2-Dichlorobenzene	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethane	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	0.23 U	0.23 U	0.23 U	0.23 U
1,2-Dichlorotetrafluoroethane	0.35 U	0.35 U	0.35 U	0.35 U
1,3,5-Trimethylbenzene	0.25 U	0.25 U	0.25 U	0.25 U
1,3-Butadiene	0.11 U	0.11 U	0.11 U	0.11 U
1,3-Dichlorobenzene	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dichlorobenzene	0.3 U	0.3 U	0.3 U	0.3 U
1,4-Dioxane				
2-Butanone	3.1	2.5	2.6	1.4
2-Hexanone	0.61	0.48	0.43	0.29
4-Ethyltoluene	0.25 U	0.25 U	0.25 U	0.25 U
4-Methyl-2-pentanone	0.32	0.3	0.61	0.23
Acetone	13	11	9.8	6.9
Benzene	0.53	0.6	0.51	0.57
Benzyl chloride	0.26 U	0.26 U	0.26 U	0.26 U
Bromodichloromethane	0.33 U	0.33 U	0.33 U	0.33 U
Bromoform	0.51 U	0.51 U	0.51 U	0.51 U
Bromomethane	0.19 U	0.19 U	0.19 U	0.19 U
Carbon disulfide	0.16 U	0.16 U	0.16 U	0.16 U
Carbon tetrachloride	<b>0.68</b>	<b>0.7</b>	<b>0.64</b>	<b>0.66</b>
Chlorobenzene	0.23 U	0.23 U	0.23 U	0.23 U
Chloroethane	0.13 U	0.13 U	0.13 U	0.13 U
Chloroform	0.24 U	0.24 U	0.24 U	0.24 U
Chloromethane	0.92	1.1	0.91	1.2
cis-1,2-Dichloroethene	0.21	0.2 U	0.2 U	0.2 U
cis-1,3-Dichloropropene	0.22 U	0.22 U	0.22 U	0.22 U
Cyclohexane	0.17 U	0.17 U	0.17 U	0.17 U
Dibromochloromethane	0.43 U	0.43 U	0.43 U	0.43 U
Dichlorodifluoromethane	2.4	2.8	2.3	2.7
Ethanol	5.9	14	44	14
Ethyl acetate	0.18 U	0.18 U	0.18 U	0.18 U

**Table 3.  
Summary of Analytical Results - Air Sampling for Large Retail Space  
Former Gorham Manufacturing Site  
Providence, Rhode Island**

Parameter (ug/m <sup>3</sup> )	Indoor Air - Large Retail Space			
	LRAIR07 5/15/2009	LRAIR08 5/15/2009	LRAIR09 5/15/2009	LRAIR10 5/15/2009
Ethylbenzene	0.22 U	0.22 U	0.27	0.22 U
Hexachlorobutadiene	1.1 U	1.1 U	1.1 U	1.1 U
Hexane	0.19	0.21	0.2	0.18 U
Isopropyl alcohol	4.4	3.6	2.8	3.2
m,p-Xylene	0.48	0.53	1	0.5
Methyl methacrylate				
Methylene chloride	1.5	1.6	1.6	1.4
Methyl-t-butyl ether	0.18 U	0.18 U	0.18 U	0.18 U
n-Heptane	0.2 U	0.2 U	0.2 U	0.2 U
o-Xylene	0.25	0.27	0.34	0.26
Propylene (Propene)	0.09 U	0.09 U	0.09 U	0.09 U
Styrene	0.37	0.21 U	0.21 U	0.21 U
Tetrachloroethene	0.73	0.53	0.46	0.46
Tetrahydrofuran	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	0.57	0.53	0.54	0.47
trans-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	0.22 U	0.22 U	0.22 U	0.22 U
Trichloroethene	0.28	0.27 U	0.27 U	0.27 U
Trichlorofluoromethane	1.1	1.4	1	1.4
Trichlorotrifluoroethane	0.59	0.68	0.62	0.58
Vinyl acetate	0.18 U	0.18 U	0.18 U	0.18 U
Vinyl chloride	0.13 U	0.13 U	0.13 U	0.13 U

[a] Tetrachloroethene are above the target air concentration, but are not compliance violations as indoor air concentrations are consistent with outdoor air concentrations that were sampled on the same day.

NA - not available

U - Not detected, value is the detection limit

B - Compounds detected in method blank as well as field sample

D - Result from diluted analyses

ug/m<sup>3</sup> - micrograms per cubic meter

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

Prepared by/Date: KJC 07/14/11

Checked by/Date: PJM 08/01/11



**Table 4.**  
**Vacuum Monitoring Results - Large Retail Space**  
**Former Gorham Manufacturing Site**  
**Providence, Rhode Island**

Date	Pressure Differential (inches of water)			
	VMW-1	VMW-2	VMW-3	VMW-4
2/3/2009	-0.20	-0.62	-0.15	-0.12
2/18/2009	-0.509	-0.738	-0.650	-0.253
2/26/2009	-0.511	-0.710	-0.665	-0.273
3/6/2009	-0.507	-0.610	-0.715	-0.251
3/6/2009*	-0.120	-0.195	-0.230	-0.028
3/31/2009	-0.148	-0.221	-0.244	-0.072
4/14/2009	-0.140	-0.210	-0.215	-0.081
5/15/2009	-0.133	-0.193	-0.208	-0.087
9/17/2009	-0.132	-0.172	-0.209	-0.087
9/24/2009	-0.146	-0.189	-0.254	-0.094
10/1/2009	-0.181	-0.232	-0.233	-0.097
10/8/2009	-0.197	-0.212	-0.255	-0.087
12/29/2009**	-0.021	-0.020	-0.160	-0.023
1/28/2010	-0.947	-0.642	-0.709	-0.237
2/5/2010	-0.497	-0.714	-0.510	-0.258
2/12/2010	-0.509	-0.706	-0.537	-0.261
2/19/2010	-0.526	-0.733	-0.667	-0.242
3/26/2010	-0.636	-0.860	-0.671	-0.331
4/30/2010	-0.519	-0.713	-0.378	-0.287
5/28/2010	-0.546	-0.727	+1.371	-0.279
7/1/2010	-0.505	-0.678	+1.568	-0.272
9/16/2010	-0.496	-0.654	+0.980	-0.272
12/7/2010	-0.126	-0.202	-0.155	-0.052
2/17/2011	-0.491	-0.683	-0.737	-0.263
6/2/2011	-0.561	-0.767	-0.393	-0.290

\* vacuum reduced at extraction wells

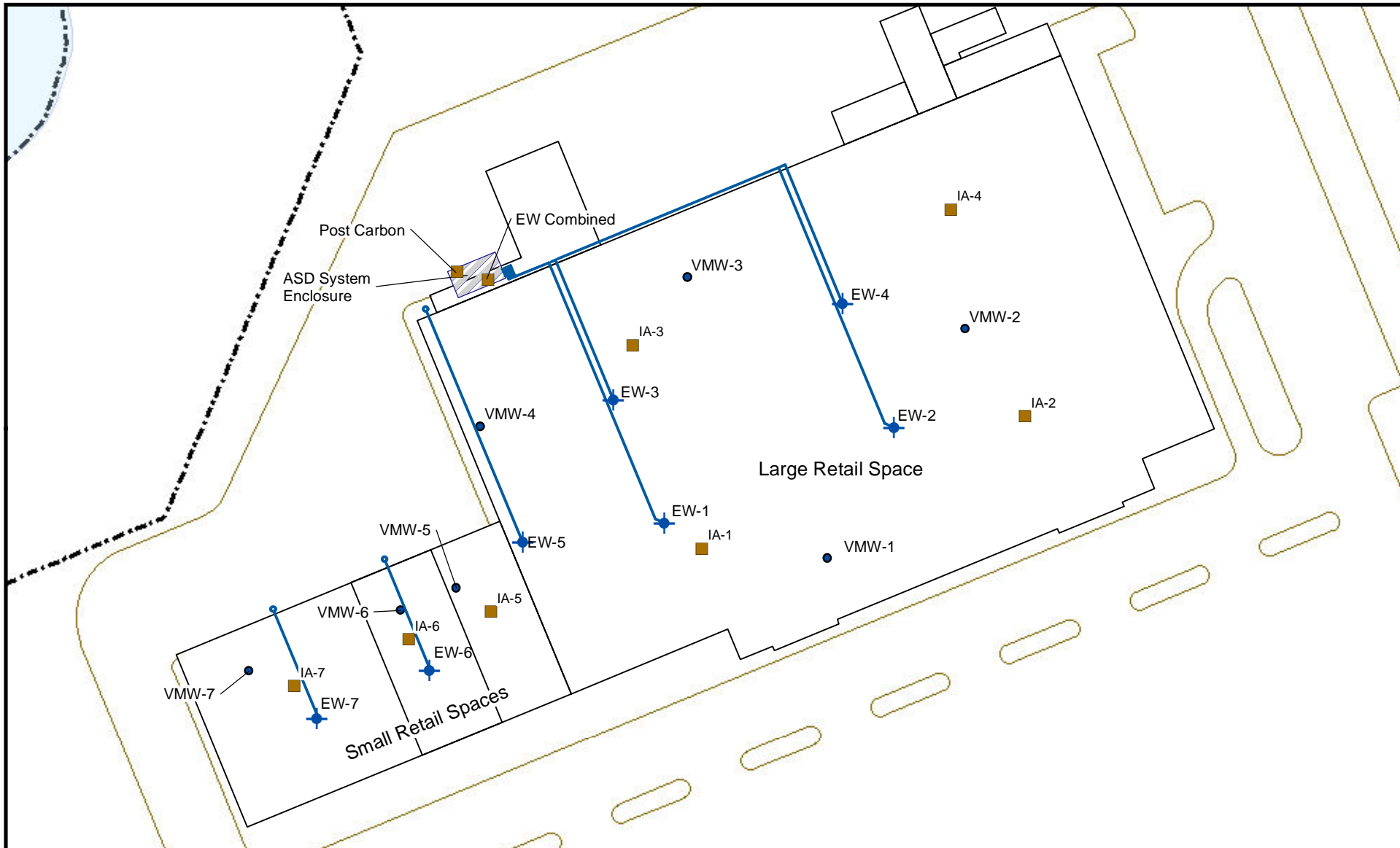
\*\* ASD system offline

Prepared by/Date: PJM 7/13/11

Checked by/Date: MAM 08/01/11

## **FIGURES**

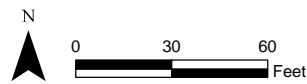




All locations are approximate

**Legend**

- Air Sample Location
- Vacuum Monitoring Well
- ◆ Extraction Well
- Extraction Well Piping
- Current Building
- Pavement Outline
- Effluent Location



Prepared/Date: BJR 08/01/11 | Checked/Date: PJM 08/01/11

**Figure 1**  
Vapor Mitigation  
Sample Locations

Former Gorham Manufacturing Facility  
333 Adelaide Avenue  
Providence, Rhode Island



**APPENDIX A**  
**Laboratory Reports**

June 13, 2011

Kelly Chatterton  
Mactec Engineering & Consulting  
107 Audubon Rd., Bldg. 2, Suite 301  
Wakefield, MA 01880

Project Location: Providence RI  
Client Job Number:  
Project Number: 3650080114  
Laboratory Work Order Number: 11F0120

Enclosed are results of analyses for samples received by the laboratory on June 3, 2011. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "James M. Georgantas". The signature is written in a cursive style with a long, sweeping horizontal line extending from the end of the name.

James M. Georgantas  
Project Manager



Mactec Engineering & Consulting  
107 Audubon Rd., Bldg. 2, Suite 301  
Wakefield, MA 01880  
ATTN: Kelly Chatterton

REPORT DATE: 6/13/2011

PURCHASE ORDER NUMBER: 201017261

PROJECT NUMBER: 3650080114

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11F0120

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-1-060211	11F0120-01	Indoor air		EPA TO-15	
IA-2-060211	11F0120-02	Indoor air		EPA TO-15	
IA-3-060211	11F0120-03	Indoor air		EPA TO-15	
IA-4-060211	11F0120-04	Indoor air		EPA TO-15	
IA-5-060211	11F0120-05	Indoor air		EPA TO-15	
IA-6-060211	11F0120-06	Indoor air		EPA TO-15	
IA-7-060211	11F0120-07	Indoor air		EPA TO-15	
AA-1-060211	11F0120-08	Ambient Air		EPA TO-15	
EW-5-060211	11F0120-09	Soil Gas		EPA TO-15	
EW-6-060211	11F0120-10	Soil Gas		EPA TO-15	
EW-7-060211	11F0120-11	Soil Gas		EPA TO-15	

**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:**

---

Analyte is found in the associated blank as well as in the sample.

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

**Acetone**

11F0120-01[IA-1-060211], 11F0120-02[IA-2-060211], 11F0120-03[IA-3-060211], 11F0120-04[IA-4-060211], 11F0120-05[IA-5-060211], 11F0120-06[IA-6-060211],  
11F0120-07[IA-7-060211], 11F0120-08[AA-1-060211], 11F0120-09[EW-5-060211], B031738-BS1, B031738-DUP1

---

Duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result.

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

**Dichlorodifluoromethane (Freon 12)**

B031738-DUP1

---

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.



Daren J. Damboragian  
Laboratory Manager

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: IA-1-060211**  
**Sample ID: 11F0120-01**  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 12:40

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1317  
 Canister Size: 6 liter  
 Flow Controller ID: 4016  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -6  
 Receipt Vacuum(in Hg): -5  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Acetone	4.7	1.0	B	11	2.4	1	6/6/11 21:11	TPH
Benzene	0.078	0.050		0.25	0.16	1	6/6/11 21:11	TPH
Benzyl chloride	ND	0.050		ND	0.26	1	6/6/11 21:11	TPH
Bromodichloromethane	ND	0.050		ND	0.34	1	6/6/11 21:11	TPH
Bromoform	ND	0.050		ND	0.52	1	6/6/11 21:11	TPH
Bromomethane	ND	0.050		ND	0.19	1	6/6/11 21:11	TPH
1,3-Butadiene	ND	0.050		ND	0.11	1	6/6/11 21:11	TPH
2-Butanone (MEK)	ND	1.0		ND	2.9	1	6/6/11 21:11	TPH
Carbon Disulfide	ND	0.050		ND	0.16	1	6/6/11 21:11	TPH
Carbon Tetrachloride	0.084	0.050		0.53	0.31	1	6/6/11 21:11	TPH
Chlorobenzene	ND	0.050		ND	0.23	1	6/6/11 21:11	TPH
Chloroethane	ND	0.050		ND	0.13	1	6/6/11 21:11	TPH
Chloroform	ND	0.050		ND	0.24	1	6/6/11 21:11	TPH
Chloromethane	0.45	0.050		0.92	0.10	1	6/6/11 21:11	TPH
Cyclohexane	ND	0.050		ND	0.17	1	6/6/11 21:11	TPH
Dibromochloromethane	ND	0.050		ND	0.43	1	6/6/11 21:11	TPH
1,2-Dibromoethane (EDB)	ND	0.050		ND	0.38	1	6/6/11 21:11	TPH
1,2-Dichlorobenzene	ND	0.050		ND	0.30	1	6/6/11 21:11	TPH
1,3-Dichlorobenzene	ND	0.050		ND	0.30	1	6/6/11 21:11	TPH
1,4-Dichlorobenzene	ND	0.050		ND	0.30	1	6/6/11 21:11	TPH
Dichlorodifluoromethane (Freon 12)	0.30	0.050		1.5	0.25	1	6/6/11 21:11	TPH
1,1-Dichloroethane	ND	0.050		ND	0.20	1	6/6/11 21:11	TPH
1,2-Dichloroethane	ND	0.050		ND	0.20	1	6/6/11 21:11	TPH
1,1-Dichloroethylene	ND	0.050		ND	0.20	1	6/6/11 21:11	TPH
cis-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/6/11 21:11	TPH
trans-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/6/11 21:11	TPH
1,2-Dichloropropane	ND	0.050		ND	0.23	1	6/6/11 21:11	TPH
cis-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/6/11 21:11	TPH
trans-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/6/11 21:11	TPH
Ethanol	1.5	1.0		2.8	1.9	1	6/6/11 21:11	TPH
Ethyl Acetate	ND	0.050		ND	0.18	1	6/6/11 21:11	TPH
Ethylbenzene	ND	0.050		ND	0.22	1	6/6/11 21:11	TPH
4-Ethyltoluene	ND	0.050		ND	0.25	1	6/6/11 21:11	TPH
Heptane	ND	0.050		ND	0.20	1	6/6/11 21:11	TPH
Hexachlorobutadiene	ND	0.050		ND	0.53	1	6/6/11 21:11	TPH
Hexane	0.12	0.050		0.43	0.18	1	6/6/11 21:11	TPH
2-Hexanone (MBK)	ND	1.0		ND	4.1	1	6/6/11 21:11	TPH
Isopropanol	ND	0.50		ND	1.2	1	6/6/11 21:11	TPH



**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: IA-1-060211**  
**Sample ID: 11F0120-01**  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 12:40

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1317  
 Canister Size: 6 liter  
 Flow Controller ID: 4016  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -6  
 Receipt Vacuum(in Hg): -5  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Methyl tert-Butyl Ether (MTBE)	ND	0.050		ND	0.18	1	6/6/11 21:11	TPH
Methylene Chloride	0.37	0.10		1.3	0.35	1	6/6/11 21:11	TPH
Methyl methacrylate	ND	0.050		ND	0.20	1	6/6/11 21:11	TPH
4-Methyl-2-pentanone (MIBK)	ND	0.050		ND	0.20	1	6/6/11 21:11	TPH
Propene	ND	0.50		ND	0.86	1	6/6/11 21:11	TPH
Styrene	ND	0.050		ND	0.21	1	6/6/11 21:11	TPH
1,1,2,2-Tetrachloroethane	ND	0.050		ND	0.34	1	6/6/11 21:11	TPH
Tetrachloroethylene	ND	0.050		ND	0.34	1	6/6/11 21:11	TPH
Tetrahydrofuran	ND	0.050		ND	0.15	1	6/6/11 21:11	TPH
Toluene	0.15	0.050		0.58	0.19	1	6/6/11 21:11	TPH
1,2,4-Trichlorobenzene	ND	0.050		ND	0.37	1	6/6/11 21:11	TPH
1,1,1-Trichloroethane	ND	0.050		ND	0.27	1	6/6/11 21:11	TPH
1,1,2-Trichloroethane	ND	0.050		ND	0.27	1	6/6/11 21:11	TPH
Trichloroethylene	ND	0.050		ND	0.27	1	6/6/11 21:11	TPH
Trichlorofluoromethane (Freon 11)	0.20	0.050		1.1	0.28	1	6/6/11 21:11	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.087	0.050		0.67	0.38	1	6/6/11 21:11	TPH
1,2,4-Trimethylbenzene	ND	0.050		ND	0.25	1	6/6/11 21:11	TPH
1,3,5-Trimethylbenzene	ND	0.050		ND	0.25	1	6/6/11 21:11	TPH
Vinyl Acetate	ND	1.0		ND	3.5	1	6/6/11 21:11	TPH
Vinyl Chloride	ND	0.050		ND	0.13	1	6/6/11 21:11	TPH
m&p-Xylene	0.096	0.10	J	0.42	0.43	1	6/6/11 21:11	TPH
o-Xylene	ND	0.050		ND	0.22	1	6/6/11 21:11	TPH

Surrogates	% Recovery	% REC Limits	Date/Time Analyzed
4-Bromofluorobenzene (1)	104	70-130	6/6/11 21:11

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: IA-2-060211**  
**Sample ID: 11F0120-02**  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 12:47

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1261  
 Canister Size: 6 liter  
 Flow Controller ID: 4078  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -4  
 Receipt Vacuum(in Hg): -6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Acetone	3.7	1.0	B	8.9	2.4	1	6/6/11 21:53	TPH	
Benzene	0.081	0.050		0.26	0.16	1	6/6/11 21:53	TPH	
Benzyl chloride	ND	0.050		ND	0.26	1	6/6/11 21:53	TPH	
Bromodichloromethane	ND	0.050		ND	0.34	1	6/6/11 21:53	TPH	
Bromoform	ND	0.050		ND	0.52	1	6/6/11 21:53	TPH	
Bromomethane	ND	0.050		ND	0.19	1	6/6/11 21:53	TPH	
1,3-Butadiene	ND	0.050		ND	0.11	1	6/6/11 21:53	TPH	
2-Butanone (MEK)	ND	1.0		ND	2.9	1	6/6/11 21:53	TPH	
Carbon Disulfide	ND	0.050		ND	0.16	1	6/6/11 21:53	TPH	
Carbon Tetrachloride	0.099	0.050		0.62	0.31	1	6/6/11 21:53	TPH	
Chlorobenzene	ND	0.050		ND	0.23	1	6/6/11 21:53	TPH	
Chloroethane	ND	0.050		ND	0.13	1	6/6/11 21:53	TPH	
Chloroform	ND	0.050		ND	0.24	1	6/6/11 21:53	TPH	
Chloromethane	0.46	0.050		0.95	0.10	1	6/6/11 21:53	TPH	
Cyclohexane	ND	0.050		ND	0.17	1	6/6/11 21:53	TPH	
Dibromochloromethane	ND	0.050		ND	0.43	1	6/6/11 21:53	TPH	
1,2-Dibromoethane (EDB)	ND	0.050		ND	0.38	1	6/6/11 21:53	TPH	
1,2-Dichlorobenzene	ND	0.050		ND	0.30	1	6/6/11 21:53	TPH	
1,3-Dichlorobenzene	ND	0.050		ND	0.30	1	6/6/11 21:53	TPH	
1,4-Dichlorobenzene	ND	0.050		ND	0.30	1	6/6/11 21:53	TPH	
Dichlorodifluoromethane (Freon 12)	0.33	0.050		1.6	0.25	1	6/6/11 21:53	TPH	
1,1-Dichloroethane	ND	0.050		ND	0.20	1	6/6/11 21:53	TPH	
1,2-Dichloroethane	ND	0.050		ND	0.20	1	6/6/11 21:53	TPH	
1,1-Dichloroethylene	ND	0.050		ND	0.20	1	6/6/11 21:53	TPH	
cis-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/6/11 21:53	TPH	
trans-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/6/11 21:53	TPH	
1,2-Dichloropropane	ND	0.050		ND	0.23	1	6/6/11 21:53	TPH	
cis-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/6/11 21:53	TPH	
trans-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/6/11 21:53	TPH	
Ethanol	1.3	1.0		2.5	1.9	1	6/6/11 21:53	TPH	
Ethyl Acetate	ND	0.050		ND	0.18	1	6/6/11 21:53	TPH	
Ethylbenzene	ND	0.050		ND	0.22	1	6/6/11 21:53	TPH	
4-Ethyltoluene	ND	0.050		ND	0.25	1	6/6/11 21:53	TPH	
Heptane	ND	0.050		ND	0.20	1	6/6/11 21:53	TPH	
Hexachlorobutadiene	ND	0.050		ND	0.53	1	6/6/11 21:53	TPH	
Hexane	0.088	0.050		0.31	0.18	1	6/6/11 21:53	TPH	
2-Hexanone (MBK)	ND	1.0		ND	4.1	1	6/6/11 21:53	TPH	
Isopropanol	ND	0.50		ND	1.2	1	6/6/11 21:53	TPH	

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
 Field Sample #: IA-2-060211  
 Sample ID: 11F0120-02  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 12:47

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1261  
 Canister Size: 6 liter  
 Flow Controller ID: 4078  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -4  
 Receipt Vacuum(in Hg): -6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Methyl tert-Butyl Ether (MTBE)	ND	0.050		ND	0.18	1	6/6/11 21:53	TPH	
Methylene Chloride	0.29	0.10		1.0	0.35	1	6/6/11 21:53	TPH	
Methyl methacrylate	ND	0.050		ND	0.20	1	6/6/11 21:53	TPH	
4-Methyl-2-pentanone (MIBK)	ND	0.050		ND	0.20	1	6/6/11 21:53	TPH	
Propene	ND	0.50		ND	0.86	1	6/6/11 21:53	TPH	
Styrene	ND	0.050		ND	0.21	1	6/6/11 21:53	TPH	
1,1,2,2-Tetrachloroethane	ND	0.050		ND	0.34	1	6/6/11 21:53	TPH	
Tetrachloroethylene	ND	0.050		ND	0.34	1	6/6/11 21:53	TPH	
Tetrahydrofuran	ND	0.050		ND	0.15	1	6/6/11 21:53	TPH	
Toluene	0.15	0.050		0.55	0.19	1	6/6/11 21:53	TPH	
1,2,4-Trichlorobenzene	ND	0.050		ND	0.37	1	6/6/11 21:53	TPH	
1,1,1-Trichloroethane	ND	0.050		ND	0.27	1	6/6/11 21:53	TPH	
1,1,2-Trichloroethane	ND	0.050		ND	0.27	1	6/6/11 21:53	TPH	
Trichloroethylene	ND	0.050		ND	0.27	1	6/6/11 21:53	TPH	
Trichlorofluoromethane (Freon 11)	0.21	0.050		1.2	0.28	1	6/6/11 21:53	TPH	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.092	0.050		0.71	0.38	1	6/6/11 21:53	TPH	
1,2,4-Trimethylbenzene	ND	0.050		ND	0.25	1	6/6/11 21:53	TPH	
1,3,5-Trimethylbenzene	ND	0.050		ND	0.25	1	6/6/11 21:53	TPH	
Vinyl Acetate	ND	1.0		ND	3.5	1	6/6/11 21:53	TPH	
Vinyl Chloride	ND	0.050		ND	0.13	1	6/6/11 21:53	TPH	
m&p-Xylene	0.082	0.10	J	0.36	0.43	1	6/6/11 21:53	TPH	
o-Xylene	ND	0.050		ND	0.22	1	6/6/11 21:53	TPH	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	109	70-130	6/6/11 21:53



**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: IA-3-060211**  
**Sample ID: 11F0120-03**  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 12:42

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1301  
 Canister Size: 6 liter  
 Flow Controller ID: 4039  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -4  
 Receipt Vacuum(in Hg): -4  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analized		
Acetone	4.8	1.0	B	11	2.4	1	6/6/11 22:34	TPH	
Benzene	0.092	0.050		0.29	0.16	1	6/6/11 22:34	TPH	
Benzyl chloride	ND	0.050		ND	0.26	1	6/6/11 22:34	TPH	
Bromodichloromethane	ND	0.050		ND	0.34	1	6/6/11 22:34	TPH	
Bromoform	ND	0.050		ND	0.52	1	6/6/11 22:34	TPH	
Bromomethane	ND	0.050		ND	0.19	1	6/6/11 22:34	TPH	
1,3-Butadiene	ND	0.050		ND	0.11	1	6/6/11 22:34	TPH	
2-Butanone (MEK)	ND	1.0		ND	2.9	1	6/6/11 22:34	TPH	
Carbon Disulfide	ND	0.050		ND	0.16	1	6/6/11 22:34	TPH	
Carbon Tetrachloride	0.10	0.050		0.64	0.31	1	6/6/11 22:34	TPH	
Chlorobenzene	ND	0.050		ND	0.23	1	6/6/11 22:34	TPH	
Chloroethane	ND	0.050		ND	0.13	1	6/6/11 22:34	TPH	
Chloroform	ND	0.050		ND	0.24	1	6/6/11 22:34	TPH	
Chloromethane	0.56	0.050		1.2	0.10	1	6/6/11 22:34	TPH	
Cyclohexane	ND	0.050		ND	0.17	1	6/6/11 22:34	TPH	
Dibromochloromethane	ND	0.050		ND	0.43	1	6/6/11 22:34	TPH	
1,2-Dibromoethane (EDB)	ND	0.050		ND	0.38	1	6/6/11 22:34	TPH	
1,2-Dichlorobenzene	ND	0.050		ND	0.30	1	6/6/11 22:34	TPH	
1,3-Dichlorobenzene	ND	0.050		ND	0.30	1	6/6/11 22:34	TPH	
1,4-Dichlorobenzene	ND	0.050		ND	0.30	1	6/6/11 22:34	TPH	
Dichlorodifluoromethane (Freon 12)	0.43	0.050		2.1	0.25	1	6/6/11 22:34	TPH	
1,1-Dichloroethane	ND	0.050		ND	0.20	1	6/6/11 22:34	TPH	
1,2-Dichloroethane	ND	0.050		ND	0.20	1	6/6/11 22:34	TPH	
1,1-Dichloroethylene	ND	0.050		ND	0.20	1	6/6/11 22:34	TPH	
cis-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/6/11 22:34	TPH	
trans-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/6/11 22:34	TPH	
1,2-Dichloropropane	ND	0.050		ND	0.23	1	6/6/11 22:34	TPH	
cis-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/6/11 22:34	TPH	
trans-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/6/11 22:34	TPH	
Ethanol	1.9	1.0		3.6	1.9	1	6/6/11 22:34	TPH	
Ethyl Acetate	ND	0.050		ND	0.18	1	6/6/11 22:34	TPH	
Ethylbenzene	0.083	0.050		0.36	0.22	1	6/6/11 22:34	TPH	
4-Ethyltoluene	ND	0.050		ND	0.25	1	6/6/11 22:34	TPH	
Heptane	ND	0.050		ND	0.20	1	6/6/11 22:34	TPH	
Hexachlorobutadiene	ND	0.050		ND	0.53	1	6/6/11 22:34	TPH	
Hexane	0.74	0.050		2.6	0.18	1	6/6/11 22:34	TPH	
2-Hexanone (MBK)	ND	1.0		ND	4.1	1	6/6/11 22:34	TPH	
Isopropanol	ND	0.50		ND	1.2	1	6/6/11 22:34	TPH	

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: IA-3-060211**  
**Sample ID: 11F0120-03**  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 12:42

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1301  
 Canister Size: 6 liter  
 Flow Controller ID: 4039  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -4  
 Receipt Vacuum(in Hg): -4  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Methyl tert-Butyl Ether (MTBE)	ND	0.050		ND	0.18	1	6/6/11 22:34	TPH	
Methylene Chloride	2.3	0.10		8.0	0.35	1	6/6/11 22:34	TPH	
Methyl methacrylate	ND	0.050		ND	0.20	1	6/6/11 22:34	TPH	
4-Methyl-2-pentanone (MIBK)	ND	0.050		ND	0.20	1	6/6/11 22:34	TPH	
Propene	ND	0.50		ND	0.86	1	6/6/11 22:34	TPH	
Styrene	ND	0.050		ND	0.21	1	6/6/11 22:34	TPH	
1,1,2,2-Tetrachloroethane	ND	0.050		ND	0.34	1	6/6/11 22:34	TPH	
Tetrachloroethylene	ND	0.050		ND	0.34	1	6/6/11 22:34	TPH	
Tetrahydrofuran	ND	0.050		ND	0.15	1	6/6/11 22:34	TPH	
Toluene	0.15	0.050		0.58	0.19	1	6/6/11 22:34	TPH	
1,2,4-Trichlorobenzene	ND	0.050		ND	0.37	1	6/6/11 22:34	TPH	
1,1,1-Trichloroethane	ND	0.050		ND	0.27	1	6/6/11 22:34	TPH	
1,1,2-Trichloroethane	ND	0.050		ND	0.27	1	6/6/11 22:34	TPH	
Trichloroethylene	ND	0.050		ND	0.27	1	6/6/11 22:34	TPH	
Trichlorofluoromethane (Freon 11)	0.29	0.050		1.6	0.28	1	6/6/11 22:34	TPH	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.097	0.050		0.74	0.38	1	6/6/11 22:34	TPH	
1,2,4-Trimethylbenzene	ND	0.050		ND	0.25	1	6/6/11 22:34	TPH	
1,3,5-Trimethylbenzene	ND	0.050		ND	0.25	1	6/6/11 22:34	TPH	
Vinyl Acetate	ND	1.0		ND	3.5	1	6/6/11 22:34	TPH	
Vinyl Chloride	ND	0.050		ND	0.13	1	6/6/11 22:34	TPH	
m&p-Xylene	0.13	0.10		0.55	0.43	1	6/6/11 22:34	TPH	
o-Xylene	0.053	0.050		0.23	0.22	1	6/6/11 22:34	TPH	

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	104	70-130	6/6/11 22:34

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: IA-4-060211**  
**Sample ID: 11F0120-04**  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 12:49

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1294  
 Canister Size: 6 liter  
 Flow Controller ID: 4079  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -28.5  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Acetone	4.9	1.0	B	12	2.4	1	6/6/11 23:57	TPH	
Benzene	0.097	0.050		0.31	0.16	1	6/6/11 23:57	TPH	
Benzyl chloride	ND	0.050		ND	0.26	1	6/6/11 23:57	TPH	
Bromodichloromethane	ND	0.050		ND	0.34	1	6/6/11 23:57	TPH	
Bromoform	ND	0.050		ND	0.52	1	6/6/11 23:57	TPH	
Bromomethane	ND	0.050		ND	0.19	1	6/6/11 23:57	TPH	
1,3-Butadiene	ND	0.050		ND	0.11	1	6/6/11 23:57	TPH	
2-Butanone (MEK)	ND	1.0		ND	2.9	1	6/6/11 23:57	TPH	
Carbon Disulfide	ND	0.050		ND	0.16	1	6/6/11 23:57	TPH	
Carbon Tetrachloride	0.11	0.050		0.68	0.31	1	6/6/11 23:57	TPH	
Chlorobenzene	ND	0.050		ND	0.23	1	6/6/11 23:57	TPH	
Chloroethane	ND	0.050		ND	0.13	1	6/6/11 23:57	TPH	
Chloroform	ND	0.050		ND	0.24	1	6/6/11 23:57	TPH	
Chloromethane	0.52	0.050		1.1	0.10	1	6/6/11 23:57	TPH	
Cyclohexane	ND	0.050		ND	0.17	1	6/6/11 23:57	TPH	
Dibromochloromethane	ND	0.050		ND	0.43	1	6/6/11 23:57	TPH	
1,2-Dibromoethane (EDB)	ND	0.050		ND	0.38	1	6/6/11 23:57	TPH	
1,2-Dichlorobenzene	ND	0.050		ND	0.30	1	6/6/11 23:57	TPH	
1,3-Dichlorobenzene	ND	0.050		ND	0.30	1	6/6/11 23:57	TPH	
1,4-Dichlorobenzene	ND	0.050		ND	0.30	1	6/6/11 23:57	TPH	
Dichlorodifluoromethane (Freon 12)	0.37	0.050		1.8	0.25	1	6/6/11 23:57	TPH	
1,1-Dichloroethane	ND	0.050		ND	0.20	1	6/6/11 23:57	TPH	
1,2-Dichloroethane	ND	0.050		ND	0.20	1	6/6/11 23:57	TPH	
1,1-Dichloroethylene	ND	0.050		ND	0.20	1	6/6/11 23:57	TPH	
cis-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/6/11 23:57	TPH	
trans-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/6/11 23:57	TPH	
1,2-Dichloropropane	ND	0.050		ND	0.23	1	6/6/11 23:57	TPH	
cis-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/6/11 23:57	TPH	
trans-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/6/11 23:57	TPH	
Ethanol	2.8	1.0		5.3	1.9	1	6/6/11 23:57	TPH	
Ethyl Acetate	ND	0.050		ND	0.18	1	6/6/11 23:57	TPH	
Ethylbenzene	ND	0.050		ND	0.22	1	6/6/11 23:57	TPH	
4-Ethyltoluene	ND	0.050		ND	0.25	1	6/6/11 23:57	TPH	
Heptane	ND	0.050		ND	0.20	1	6/6/11 23:57	TPH	
Hexachlorobutadiene	ND	0.050		ND	0.53	1	6/6/11 23:57	TPH	
Hexane	0.28	0.050		1.0	0.18	1	6/6/11 23:57	TPH	
2-Hexanone (MBK)	0.052	1.0	J	0.21	4.1	1	6/6/11 23:57	TPH	
Isopropanol	ND	0.50		ND	1.2	1	6/6/11 23:57	TPH	



**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: IA-4-060211**  
**Sample ID: 11F0120-04**  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 12:49

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1294  
 Canister Size: 6 liter  
 Flow Controller ID: 4079  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -28.5  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Methyl tert-Butyl Ether (MTBE)	ND	0.050		ND	0.18	1	6/6/11 23:57	TPH
Methylene Chloride	0.92	0.10		3.2	0.35	1	6/6/11 23:57	TPH
Methyl methacrylate	ND	0.050		ND	0.20	1	6/6/11 23:57	TPH
4-Methyl-2-pentanone (MIBK)	ND	0.050		ND	0.20	1	6/6/11 23:57	TPH
Propene	ND	0.50		ND	0.86	1	6/6/11 23:57	TPH
Styrene	ND	0.050		ND	0.21	1	6/6/11 23:57	TPH
1,1,2,2-Tetrachloroethane	ND	0.050		ND	0.34	1	6/6/11 23:57	TPH
Tetrachloroethylene	ND	0.050		ND	0.34	1	6/6/11 23:57	TPH
Tetrahydrofuran	ND	0.050		ND	0.15	1	6/6/11 23:57	TPH
Toluene	0.15	0.050		0.56	0.19	1	6/6/11 23:57	TPH
1,2,4-Trichlorobenzene	ND	0.050		ND	0.37	1	6/6/11 23:57	TPH
1,1,1-Trichloroethane	ND	0.050		ND	0.27	1	6/6/11 23:57	TPH
1,1,2-Trichloroethane	ND	0.050		ND	0.27	1	6/6/11 23:57	TPH
Trichloroethylene	ND	0.050		ND	0.27	1	6/6/11 23:57	TPH
Trichlorofluoromethane (Freon 11)	0.26	0.050		1.4	0.28	1	6/6/11 23:57	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.093	0.050		0.71	0.38	1	6/6/11 23:57	TPH
1,2,4-Trimethylbenzene	ND	0.050		ND	0.25	1	6/6/11 23:57	TPH
1,3,5-Trimethylbenzene	ND	0.050		ND	0.25	1	6/6/11 23:57	TPH
Vinyl Acetate	ND	1.0		ND	3.5	1	6/6/11 23:57	TPH
Vinyl Chloride	ND	0.050		ND	0.13	1	6/6/11 23:57	TPH
m&p-Xylene	0.094	0.10	J	0.41	0.43	1	6/6/11 23:57	TPH
o-Xylene	ND	0.050		ND	0.22	1	6/6/11 23:57	TPH

Surrogates	% Recovery	% REC Limits	Date/Time Analyzed
4-Bromofluorobenzene (1)	107	70-130	6/6/11 23:57

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: IA-5-060211**  
**Sample ID: 11F0120-05**  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 13:32

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1664  
 Canister Size: 6 liter  
 Flow Controller ID: 4098  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): 0  
 Final Vacuum(in Hg): 0  
 Receipt Vacuum(in Hg): -7  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analized		
Acetone	10	1.0	B	24	2.4	1	6/7/11	0:39	TPH
Benzene	0.10	0.050		0.33	0.16	1	6/7/11	0:39	TPH
Benzyl chloride	ND	0.050		ND	0.26	1	6/7/11	0:39	TPH
Bromodichloromethane	ND	0.050		ND	0.34	1	6/7/11	0:39	TPH
Bromoform	ND	0.050		ND	0.52	1	6/7/11	0:39	TPH
Bromomethane	ND	0.050		ND	0.19	1	6/7/11	0:39	TPH
1,3-Butadiene	ND	0.050		ND	0.11	1	6/7/11	0:39	TPH
2-Butanone (MEK)	1.2	1.0		3.6	2.9	1	6/7/11	0:39	TPH
Carbon Disulfide	ND	0.050		ND	0.16	1	6/7/11	0:39	TPH
Carbon Tetrachloride	0.094	0.050		0.59	0.31	1	6/7/11	0:39	TPH
Chlorobenzene	ND	0.050		ND	0.23	1	6/7/11	0:39	TPH
Chloroethane	ND	0.050		ND	0.13	1	6/7/11	0:39	TPH
Chloroform	ND	0.050		ND	0.24	1	6/7/11	0:39	TPH
Chloromethane	0.51	0.050		1.1	0.10	1	6/7/11	0:39	TPH
Cyclohexane	0.13	0.050		0.46	0.17	1	6/7/11	0:39	TPH
Dibromochloromethane	ND	0.050		ND	0.43	1	6/7/11	0:39	TPH
1,2-Dibromoethane (EDB)	ND	0.050		ND	0.38	1	6/7/11	0:39	TPH
1,2-Dichlorobenzene	ND	0.050		ND	0.30	1	6/7/11	0:39	TPH
1,3-Dichlorobenzene	ND	0.050		ND	0.30	1	6/7/11	0:39	TPH
1,4-Dichlorobenzene	ND	0.050		ND	0.30	1	6/7/11	0:39	TPH
Dichlorodifluoromethane (Freon 12)	0.34	0.050		1.7	0.25	1	6/7/11	0:39	TPH
1,1-Dichloroethane	ND	0.050		ND	0.20	1	6/7/11	0:39	TPH
1,2-Dichloroethane	ND	0.050		ND	0.20	1	6/7/11	0:39	TPH
1,1-Dichloroethylene	ND	0.050		ND	0.20	1	6/7/11	0:39	TPH
cis-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/7/11	0:39	TPH
trans-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/7/11	0:39	TPH
1,2-Dichloropropane	ND	0.050		ND	0.23	1	6/7/11	0:39	TPH
cis-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/7/11	0:39	TPH
trans-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/7/11	0:39	TPH
Ethanol	4.1	1.0		7.7	1.9	1	6/7/11	0:39	TPH
Ethyl Acetate	ND	0.050		ND	0.18	1	6/7/11	0:39	TPH
Ethylbenzene	0.082	0.050		0.36	0.22	1	6/7/11	0:39	TPH
4-Ethyltoluene	ND	0.050		ND	0.25	1	6/7/11	0:39	TPH
Heptane	ND	0.050		ND	0.20	1	6/7/11	0:39	TPH
Hexachlorobutadiene	ND	0.050		ND	0.53	1	6/7/11	0:39	TPH
Hexane	0.48	0.050		1.7	0.18	1	6/7/11	0:39	TPH
2-Hexanone (MBK)	ND	1.0		ND	4.1	1	6/7/11	0:39	TPH
Isopropanol	ND	0.50		ND	1.2	1	6/7/11	0:39	TPH

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
 Field Sample #: IA-5-060211  
 Sample ID: 11F0120-05  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 13:32

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1664  
 Canister Size: 6 liter  
 Flow Controller ID: 4098  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): 0  
 Final Vacuum(in Hg): 0  
 Receipt Vacuum(in Hg): -7  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Methyl tert-Butyl Ether (MTBE)	ND	0.050		ND	0.18	1	6/7/11	0:39	TPH
Methylene Chloride	1.2	0.10		4.2	0.35	1	6/7/11	0:39	TPH
Methyl methacrylate	ND	0.050		ND	0.20	1	6/7/11	0:39	TPH
4-Methyl-2-pentanone (MIBK)	0.075	0.050		0.31	0.20	1	6/7/11	0:39	TPH
Propene	ND	0.50		ND	0.86	1	6/7/11	0:39	TPH
Styrene	ND	0.050		ND	0.21	1	6/7/11	0:39	TPH
1,1,2,2-Tetrachloroethane	ND	0.050		ND	0.34	1	6/7/11	0:39	TPH
Tetrachloroethylene	ND	0.050		ND	0.34	1	6/7/11	0:39	TPH
Tetrahydrofuran	ND	0.050		ND	0.15	1	6/7/11	0:39	TPH
Toluene	0.24	0.050		0.90	0.19	1	6/7/11	0:39	TPH
1,2,4-Trichlorobenzene	ND	0.050		ND	0.37	1	6/7/11	0:39	TPH
1,1,1-Trichloroethane	ND	0.050		ND	0.27	1	6/7/11	0:39	TPH
1,1,2-Trichloroethane	ND	0.050		ND	0.27	1	6/7/11	0:39	TPH
Trichloroethylene	ND	0.050		ND	0.27	1	6/7/11	0:39	TPH
Trichlorofluoromethane (Freon 11)	0.25	0.050		1.4	0.28	1	6/7/11	0:39	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.090	0.050		0.69	0.38	1	6/7/11	0:39	TPH
1,2,4-Trimethylbenzene	ND	0.050		ND	0.25	1	6/7/11	0:39	TPH
1,3,5-Trimethylbenzene	ND	0.050		ND	0.25	1	6/7/11	0:39	TPH
Vinyl Acetate	ND	1.0		ND	3.5	1	6/7/11	0:39	TPH
Vinyl Chloride	ND	0.050		ND	0.13	1	6/7/11	0:39	TPH
m&p-Xylene	0.13	0.10		0.57	0.43	1	6/7/11	0:39	TPH
o-Xylene	0.059	0.050		0.26	0.22	1	6/7/11	0:39	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	107	70-130	6/7/11 0:39



**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: IA-6-060211**  
**Sample ID: 11F0120-06**  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 13:35

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1038  
 Canister Size: 6 liter  
 Flow Controller ID: 4084  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -29.5  
 Final Vacuum(in Hg): -6  
 Receipt Vacuum(in Hg): -6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analized		
Acetone	8.1	1.0	B	19	2.4	1	6/7/11 1:20	TPH	
Benzene	0.092	0.050		0.29	0.16	1	6/7/11 1:20	TPH	
Benzyl chloride	ND	0.050		ND	0.26	1	6/7/11 1:20	TPH	
Bromodichloromethane	ND	0.050		ND	0.34	1	6/7/11 1:20	TPH	
Bromoform	ND	0.050		ND	0.52	1	6/7/11 1:20	TPH	
Bromomethane	ND	0.050		ND	0.19	1	6/7/11 1:20	TPH	
1,3-Butadiene	ND	0.050		ND	0.11	1	6/7/11 1:20	TPH	
2-Butanone (MEK)	ND	1.0		ND	2.9	1	6/7/11 1:20	TPH	
Carbon Disulfide	ND	0.050		ND	0.16	1	6/7/11 1:20	TPH	
Carbon Tetrachloride	0.10	0.050		0.64	0.31	1	6/7/11 1:20	TPH	
Chlorobenzene	ND	0.050		ND	0.23	1	6/7/11 1:20	TPH	
Chloroethane	ND	0.050		ND	0.13	1	6/7/11 1:20	TPH	
Chloroform	ND	0.050		ND	0.24	1	6/7/11 1:20	TPH	
Chloromethane	0.52	0.050		1.1	0.10	1	6/7/11 1:20	TPH	
Cyclohexane	0.083	0.050		0.29	0.17	1	6/7/11 1:20	TPH	
Dibromochloromethane	ND	0.050		ND	0.43	1	6/7/11 1:20	TPH	
1,2-Dibromoethane (EDB)	ND	0.050		ND	0.38	1	6/7/11 1:20	TPH	
1,2-Dichlorobenzene	ND	0.050		ND	0.30	1	6/7/11 1:20	TPH	
1,3-Dichlorobenzene	ND	0.050		ND	0.30	1	6/7/11 1:20	TPH	
1,4-Dichlorobenzene	ND	0.050		ND	0.30	1	6/7/11 1:20	TPH	
Dichlorodifluoromethane (Freon 12)	0.35	0.050		1.8	0.25	1	6/7/11 1:20	TPH	
1,1-Dichloroethane	ND	0.050		ND	0.20	1	6/7/11 1:20	TPH	
1,2-Dichloroethane	ND	0.050		ND	0.20	1	6/7/11 1:20	TPH	
1,1-Dichloroethylene	ND	0.050		ND	0.20	1	6/7/11 1:20	TPH	
cis-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/7/11 1:20	TPH	
trans-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/7/11 1:20	TPH	
1,2-Dichloropropane	ND	0.050		ND	0.23	1	6/7/11 1:20	TPH	
cis-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/7/11 1:20	TPH	
trans-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/7/11 1:20	TPH	
Ethanol	4.1	1.0		7.7	1.9	1	6/7/11 1:20	TPH	
Ethyl Acetate	ND	0.050		ND	0.18	1	6/7/11 1:20	TPH	
Ethylbenzene	ND	0.050		ND	0.22	1	6/7/11 1:20	TPH	
4-Ethyltoluene	ND	0.050		ND	0.25	1	6/7/11 1:20	TPH	
Heptane	ND	0.050		ND	0.20	1	6/7/11 1:20	TPH	
Hexachlorobutadiene	ND	0.050		ND	0.53	1	6/7/11 1:20	TPH	
Hexane	0.12	0.050		0.41	0.18	1	6/7/11 1:20	TPH	
2-Hexanone (MBK)	ND	1.0		ND	4.1	1	6/7/11 1:20	TPH	
Isopropanol	ND	0.50		ND	1.2	1	6/7/11 1:20	TPH	

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: IA-6-060211**  
**Sample ID: 11F0120-06**  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 13:35

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1038  
 Canister Size: 6 liter  
 Flow Controller ID: 4084  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -29.5  
 Final Vacuum(in Hg): -6  
 Receipt Vacuum(in Hg): -6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Methyl tert-Butyl Ether (MTBE)	ND	0.050		ND	0.18	1	6/7/11	1:20	TPH
Methylene Chloride	0.30	0.10		1.0	0.35	1	6/7/11	1:20	TPH
Methyl methacrylate	ND	0.050		ND	0.20	1	6/7/11	1:20	TPH
4-Methyl-2-pentanone (MIBK)	0.069	0.050		0.28	0.20	1	6/7/11	1:20	TPH
Propene	ND	0.50		ND	0.86	1	6/7/11	1:20	TPH
Styrene	0.063	0.050		0.27	0.21	1	6/7/11	1:20	TPH
1,1,2,2-Tetrachloroethane	ND	0.050		ND	0.34	1	6/7/11	1:20	TPH
Tetrachloroethylene	ND	0.050		ND	0.34	1	6/7/11	1:20	TPH
Tetrahydrofuran	ND	0.050		ND	0.15	1	6/7/11	1:20	TPH
Toluene	0.25	0.050		0.93	0.19	1	6/7/11	1:20	TPH
1,2,4-Trichlorobenzene	ND	0.050		ND	0.37	1	6/7/11	1:20	TPH
1,1,1-Trichloroethane	ND	0.050		ND	0.27	1	6/7/11	1:20	TPH
1,1,2-Trichloroethane	ND	0.050		ND	0.27	1	6/7/11	1:20	TPH
Trichloroethylene	ND	0.050		ND	0.27	1	6/7/11	1:20	TPH
Trichlorofluoromethane (Freon 11)	0.20	0.050		1.1	0.28	1	6/7/11	1:20	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.088	0.050		0.67	0.38	1	6/7/11	1:20	TPH
1,2,4-Trimethylbenzene	ND	0.050		ND	0.25	1	6/7/11	1:20	TPH
1,3,5-Trimethylbenzene	ND	0.050		ND	0.25	1	6/7/11	1:20	TPH
Vinyl Acetate	ND	1.0		ND	3.5	1	6/7/11	1:20	TPH
Vinyl Chloride	ND	0.050		ND	0.13	1	6/7/11	1:20	TPH
m&p-Xylene	0.11	0.10		0.48	0.43	1	6/7/11	1:20	TPH
o-Xylene	ND	0.050		ND	0.22	1	6/7/11	1:20	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	107	70-130	6/7/11 1:20

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: IA-7-060211**  
**Sample ID: 11F0120-07**  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 11:40

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1231  
 Canister Size: 6 liter  
 Flow Controller ID: 4090  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -6  
 Receipt Vacuum(in Hg): -6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analized		
Acetone	20	1.0	B	48	2.4	1	6/7/11	2:02	TPH
Benzene	0.13	0.050		0.41	0.16	1	6/7/11	2:02	TPH
Benzyl chloride	ND	0.050		ND	0.26	1	6/7/11	2:02	TPH
Bromodichloromethane	ND	0.050		ND	0.34	1	6/7/11	2:02	TPH
Bromoform	ND	0.050		ND	0.52	1	6/7/11	2:02	TPH
Bromomethane	ND	0.050		ND	0.19	1	6/7/11	2:02	TPH
1,3-Butadiene	ND	0.050		ND	0.11	1	6/7/11	2:02	TPH
2-Butanone (MEK)	1.6	1.0		4.7	2.9	1	6/7/11	2:02	TPH
Carbon Disulfide	0.088	0.050		0.27	0.16	1	6/7/11	2:02	TPH
Carbon Tetrachloride	0.11	0.050		0.69	0.31	1	6/7/11	2:02	TPH
Chlorobenzene	ND	0.050		ND	0.23	1	6/7/11	2:02	TPH
Chloroethane	ND	0.050		ND	0.13	1	6/7/11	2:02	TPH
Chloroform	ND	0.050		ND	0.24	1	6/7/11	2:02	TPH
Chloromethane	0.78	0.050		1.6	0.10	1	6/7/11	2:02	TPH
Cyclohexane	ND	0.050		ND	0.17	1	6/7/11	2:02	TPH
Dibromochloromethane	ND	0.050		ND	0.43	1	6/7/11	2:02	TPH
1,2-Dibromoethane (EDB)	ND	0.050		ND	0.38	1	6/7/11	2:02	TPH
1,2-Dichlorobenzene	ND	0.050		ND	0.30	1	6/7/11	2:02	TPH
1,3-Dichlorobenzene	ND	0.050		ND	0.30	1	6/7/11	2:02	TPH
1,4-Dichlorobenzene	ND	0.050		ND	0.30	1	6/7/11	2:02	TPH
Dichlorodifluoromethane (Freon 12)	0.51	0.050		2.5	0.25	1	6/7/11	2:02	TPH
1,1-Dichloroethane	ND	0.050		ND	0.20	1	6/7/11	2:02	TPH
1,2-Dichloroethane	ND	0.050		ND	0.20	1	6/7/11	2:02	TPH
1,1-Dichloroethylene	ND	0.050		ND	0.20	1	6/7/11	2:02	TPH
cis-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/7/11	2:02	TPH
trans-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/7/11	2:02	TPH
1,2-Dichloropropane	0.14	0.050		0.63	0.23	1	6/7/11	2:02	TPH
cis-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/7/11	2:02	TPH
trans-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/7/11	2:02	TPH
Ethanol	15	1.0		28	1.9	1	6/7/11	2:02	TPH
Ethyl Acetate	0.20	0.050		0.70	0.18	1	6/7/11	2:02	TPH
Ethylbenzene	0.16	0.050		0.68	0.22	1	6/7/11	2:02	TPH
4-Ethyltoluene	ND	0.050		ND	0.25	1	6/7/11	2:02	TPH
Heptane	0.48	0.050		2.0	0.20	1	6/7/11	2:02	TPH
Hexachlorobutadiene	ND	0.050		ND	0.53	1	6/7/11	2:02	TPH
Hexane	0.16	0.050		0.58	0.18	1	6/7/11	2:02	TPH
2-Hexanone (MBK)	0.34	1.0	J	1.4	4.1	1	6/7/11	2:02	TPH
Isopropanol	ND	0.50		ND	1.2	1	6/7/11	2:02	TPH



**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: IA-7-060211**  
**Sample ID: 11F0120-07**  
 Sample Matrix: Indoor air  
 Sampled: 6/2/2011 11:40

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1231  
 Canister Size: 6 liter  
 Flow Controller ID: 4090  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -29  
 Final Vacuum(in Hg): -6  
 Receipt Vacuum(in Hg): -6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Methyl tert-Butyl Ether (MTBE)	ND	0.050		ND	0.18	1	6/7/11	2:02	TPH
Methylene Chloride	0.32	0.10		1.1	0.35	1	6/7/11	2:02	TPH
Methyl methacrylate	ND	0.050		ND	0.20	1	6/7/11	2:02	TPH
4-Methyl-2-pentanone (MIBK)	0.13	0.050		0.53	0.20	1	6/7/11	2:02	TPH
Propene	ND	0.50		ND	0.86	1	6/7/11	2:02	TPH
Styrene	0.23	0.050		0.97	0.21	1	6/7/11	2:02	TPH
1,1,2,2-Tetrachloroethane	ND	0.050		ND	0.34	1	6/7/11	2:02	TPH
Tetrachloroethylene	ND	0.050		ND	0.34	1	6/7/11	2:02	TPH
Tetrahydrofuran	0.080	0.050		0.24	0.15	1	6/7/11	2:02	TPH
Toluene	1.7	0.050		6.6	0.19	1	6/7/11	2:02	TPH
1,2,4-Trichlorobenzene	ND	0.050		ND	0.37	1	6/7/11	2:02	TPH
1,1,1-Trichloroethane	ND	0.050		ND	0.27	1	6/7/11	2:02	TPH
1,1,2-Trichloroethane	ND	0.050		ND	0.27	1	6/7/11	2:02	TPH
Trichloroethylene	ND	0.050		ND	0.27	1	6/7/11	2:02	TPH
Trichlorofluoromethane (Freon 11)	0.24	0.050		1.3	0.28	1	6/7/11	2:02	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.099	0.050		0.76	0.38	1	6/7/11	2:02	TPH
1,2,4-Trimethylbenzene	0.11	0.050		0.56	0.25	1	6/7/11	2:02	TPH
1,3,5-Trimethylbenzene	ND	0.050		ND	0.25	1	6/7/11	2:02	TPH
Vinyl Acetate	ND	1.0		ND	3.5	1	6/7/11	2:02	TPH
Vinyl Chloride	ND	0.050		ND	0.13	1	6/7/11	2:02	TPH
m&p-Xylene	0.35	0.10		1.5	0.43	1	6/7/11	2:02	TPH
o-Xylene	0.16	0.050		0.69	0.22	1	6/7/11	2:02	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	109	70-130	6/7/11 2:02

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: AA-1-060211**  
**Sample ID: 11F0120-08**  
 Sample Matrix: Ambient Air  
 Sampled: 6/2/2011 13:40

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1028  
 Canister Size: 6 liter  
 Flow Controller ID: 4085  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -2  
 Receipt Vacuum(in Hg): -2  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Acetone	3.7	1.0	B	8.7	2.4	1	6/7/11	2:43	TPH
Benzene	ND	0.050		ND	0.16	1	6/7/11	2:43	TPH
Benzyl chloride	ND	0.050		ND	0.26	1	6/7/11	2:43	TPH
Bromodichloromethane	ND	0.050		ND	0.34	1	6/7/11	2:43	TPH
Bromoform	ND	0.050		ND	0.52	1	6/7/11	2:43	TPH
Bromomethane	ND	0.050		ND	0.19	1	6/7/11	2:43	TPH
1,3-Butadiene	ND	0.050		ND	0.11	1	6/7/11	2:43	TPH
2-Butanone (MEK)	ND	1.0		ND	2.9	1	6/7/11	2:43	TPH
Carbon Disulfide	ND	0.050		ND	0.16	1	6/7/11	2:43	TPH
Carbon Tetrachloride	0.085	0.050		0.53	0.31	1	6/7/11	2:43	TPH
Chlorobenzene	ND	0.050		ND	0.23	1	6/7/11	2:43	TPH
Chloroethane	ND	0.050		ND	0.13	1	6/7/11	2:43	TPH
Chloroform	ND	0.050		ND	0.24	1	6/7/11	2:43	TPH
Chloromethane	0.46	0.050		0.96	0.10	1	6/7/11	2:43	TPH
Cyclohexane	ND	0.050		ND	0.17	1	6/7/11	2:43	TPH
Dibromochloromethane	ND	0.050		ND	0.43	1	6/7/11	2:43	TPH
1,2-Dibromoethane (EDB)	ND	0.050		ND	0.38	1	6/7/11	2:43	TPH
1,2-Dichlorobenzene	ND	0.050		ND	0.30	1	6/7/11	2:43	TPH
1,3-Dichlorobenzene	ND	0.050		ND	0.30	1	6/7/11	2:43	TPH
1,4-Dichlorobenzene	ND	0.050		ND	0.30	1	6/7/11	2:43	TPH
Dichlorodifluoromethane (Freon 12)	0.38	0.050		1.9	0.25	1	6/7/11	2:43	TPH
1,1-Dichloroethane	ND	0.050		ND	0.20	1	6/7/11	2:43	TPH
1,2-Dichloroethane	ND	0.050		ND	0.20	1	6/7/11	2:43	TPH
1,1-Dichloroethylene	ND	0.050		ND	0.20	1	6/7/11	2:43	TPH
cis-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/7/11	2:43	TPH
trans-1,2-Dichloroethylene	ND	0.050		ND	0.20	1	6/7/11	2:43	TPH
1,2-Dichloropropane	ND	0.050		ND	0.23	1	6/7/11	2:43	TPH
cis-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/7/11	2:43	TPH
trans-1,3-Dichloropropene	ND	0.050		ND	0.23	1	6/7/11	2:43	TPH
Ethanol	1.4	1.0		2.7	1.9	1	6/7/11	2:43	TPH
Ethyl Acetate	ND	0.050		ND	0.18	1	6/7/11	2:43	TPH
Ethylbenzene	ND	0.050		ND	0.22	1	6/7/11	2:43	TPH
4-Ethyltoluene	ND	0.050		ND	0.25	1	6/7/11	2:43	TPH
Heptane	ND	0.050		ND	0.20	1	6/7/11	2:43	TPH
Hexachlorobutadiene	ND	0.050		ND	0.53	1	6/7/11	2:43	TPH
Hexane	0.25	0.050		0.88	0.18	1	6/7/11	2:43	TPH
2-Hexanone (MBK)	ND	1.0		ND	4.1	1	6/7/11	2:43	TPH
Isopropanol	ND	0.50		ND	1.2	1	6/7/11	2:43	TPH

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
 Field Sample #: AA-1-060211  
 Sample ID: 11F0120-08  
 Sample Matrix: Ambient Air  
 Sampled: 6/2/2011 13:40

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1028  
 Canister Size: 6 liter  
 Flow Controller ID: 4085  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -28  
 Final Vacuum(in Hg): -2  
 Receipt Vacuum(in Hg): -2  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analized		
Methyl tert-Butyl Ether (MTBE)	ND	0.050		ND	0.18	1	6/7/11	2:43	TPH
Methylene Chloride	0.66	0.10		2.3	0.35	1	6/7/11	2:43	TPH
Methyl methacrylate	ND	0.050		ND	0.20	1	6/7/11	2:43	TPH
4-Methyl-2-pentanone (MIBK)	ND	0.050		ND	0.20	1	6/7/11	2:43	TPH
Propene	ND	0.50		ND	0.86	1	6/7/11	2:43	TPH
Styrene	ND	0.050		ND	0.21	1	6/7/11	2:43	TPH
1,1,2,2-Tetrachloroethane	ND	0.050		ND	0.34	1	6/7/11	2:43	TPH
Tetrachloroethylene	ND	0.050		ND	0.34	1	6/7/11	2:43	TPH
Tetrahydrofuran	ND	0.050		ND	0.15	1	6/7/11	2:43	TPH
Toluene	0.14	0.050		0.52	0.19	1	6/7/11	2:43	TPH
1,2,4-Trichlorobenzene	ND	0.050		ND	0.37	1	6/7/11	2:43	TPH
1,1,1-Trichloroethane	ND	0.050		ND	0.27	1	6/7/11	2:43	TPH
1,1,2-Trichloroethane	ND	0.050		ND	0.27	1	6/7/11	2:43	TPH
Trichloroethylene	ND	0.050		ND	0.27	1	6/7/11	2:43	TPH
Trichlorofluoromethane (Freon 11)	0.26	0.050		1.5	0.28	1	6/7/11	2:43	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.090	0.050		0.69	0.38	1	6/7/11	2:43	TPH
1,2,4-Trimethylbenzene	ND	0.050		ND	0.25	1	6/7/11	2:43	TPH
1,3,5-Trimethylbenzene	ND	0.050		ND	0.25	1	6/7/11	2:43	TPH
Vinyl Acetate	ND	1.0		ND	3.5	1	6/7/11	2:43	TPH
Vinyl Chloride	ND	0.050		ND	0.13	1	6/7/11	2:43	TPH
m&p-Xylene	ND	0.10		ND	0.43	1	6/7/11	2:43	TPH
o-Xylene	ND	0.050		ND	0.22	1	6/7/11	2:43	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	100	70-130	6/7/11 2:43



**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: EW-5-060211**  
**Sample ID: 11F0120-09**  
 Sample Matrix: Soil Gas  
 Sampled: 6/2/2011 14:20

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1722  
 Canister Size: 6 liter  
 Flow Controller ID: 4097  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Acetone	930	20	B	2200	48	20	6/7/11	3:59	TPH
Benzene	1.3	1.0		4.2	3.2	20	6/7/11	3:59	TPH
Benzyl chloride	ND	1.0		ND	5.2	20	6/7/11	3:59	TPH
Bromodichloromethane	ND	1.0		ND	6.7	20	6/7/11	3:59	TPH
Bromoform	ND	1.0		ND	10	20	6/7/11	3:59	TPH
Bromomethane	ND	1.0		ND	3.9	20	6/7/11	3:59	TPH
1,3-Butadiene	ND	1.0		ND	2.2	20	6/7/11	3:59	TPH
2-Butanone (MEK)	5800	400		17000	1200	400	6/7/11	12:43	TPH
Carbon Disulfide	7.2	1.0		22	3.1	20	6/7/11	3:59	TPH
Carbon Tetrachloride	ND	1.0		ND	6.3	20	6/7/11	3:59	TPH
Chlorobenzene	ND	1.0		ND	4.6	20	6/7/11	3:59	TPH
Chloroethane	ND	1.0		ND	2.6	20	6/7/11	3:59	TPH
Chloroform	ND	1.0		ND	4.9	20	6/7/11	3:59	TPH
Chloromethane	ND	1.0		ND	2.1	20	6/7/11	3:59	TPH
Cyclohexane	ND	1.0		ND	3.4	20	6/7/11	3:59	TPH
Dibromochloromethane	ND	1.0		ND	8.5	20	6/7/11	3:59	TPH
1,2-Dibromoethane (EDB)	ND	1.0		ND	7.7	20	6/7/11	3:59	TPH
1,2-Dichlorobenzene	ND	1.0		ND	6.0	20	6/7/11	3:59	TPH
1,3-Dichlorobenzene	ND	1.0		ND	6.0	20	6/7/11	3:59	TPH
1,4-Dichlorobenzene	ND	1.0		ND	6.0	20	6/7/11	3:59	TPH
Dichlorodifluoromethane (Freon 12)	ND	1.0		ND	4.9	20	6/7/11	3:59	TPH
1,1-Dichloroethane	8.2	1.0		33	4.0	20	6/7/11	3:59	TPH
1,2-Dichloroethane	ND	1.0		ND	4.0	20	6/7/11	3:59	TPH
1,1-Dichloroethylene	2.8	1.0		11	4.0	20	6/7/11	3:59	TPH
cis-1,2-Dichloroethylene	6.8	1.0		27	4.0	20	6/7/11	3:59	TPH
trans-1,2-Dichloroethylene	ND	1.0		ND	4.0	20	6/7/11	3:59	TPH
1,2-Dichloropropane	ND	1.0		ND	4.6	20	6/7/11	3:59	TPH
cis-1,3-Dichloropropene	ND	1.0		ND	4.5	20	6/7/11	3:59	TPH
trans-1,3-Dichloropropene	ND	1.0		ND	4.5	20	6/7/11	3:59	TPH
Ethanol	13	20	J	24	38	20	6/7/11	3:59	TPH
Ethyl Acetate	1.1	1.0		3.8	3.6	20	6/7/11	3:59	TPH
Ethylbenzene	ND	1.0		ND	4.3	20	6/7/11	3:59	TPH
4-Ethyltoluene	ND	1.0		ND	4.9	20	6/7/11	3:59	TPH
Heptane	ND	1.0		ND	4.1	20	6/7/11	3:59	TPH
Hexachlorobutadiene	ND	1.0		ND	11	20	6/7/11	3:59	TPH
Hexane	ND	1.0		ND	3.5	20	6/7/11	3:59	TPH
2-Hexanone (MBK)	ND	20		ND	82	20	6/7/11	3:59	TPH
Isopropanol	ND	10		ND	25	20	6/7/11	3:59	TPH

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
 Field Sample #: EW-5-060211  
 Sample ID: 11F0120-09  
 Sample Matrix: Soil Gas  
 Sampled: 6/2/2011 14:20

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1722  
 Canister Size: 6 liter  
 Flow Controller ID: 4097  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -30  
 Final Vacuum(in Hg): -5  
 Receipt Vacuum(in Hg): -6  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analized		
Methyl tert-Butyl Ether (MTBE)	ND	1.0		ND	3.6	20	6/7/11	3:59	TPH
Methylene Chloride	ND	2.0		ND	6.9	20	6/7/11	3:59	TPH
Methyl methacrylate	ND	1.0		ND	4.1	20	6/7/11	3:59	TPH
4-Methyl-2-pentanone (MIBK)	ND	1.0		ND	4.1	20	6/7/11	3:59	TPH
Propene	ND	10		ND	17	20	6/7/11	3:59	TPH
Styrene	ND	1.0		ND	4.3	20	6/7/11	3:59	TPH
1,1,2,2-Tetrachloroethane	ND	1.0		ND	6.9	20	6/7/11	3:59	TPH
Tetrachloroethylene	ND	1.0		ND	6.8	20	6/7/11	3:59	TPH
Tetrahydrofuran	10000	20		30000	59	400	6/7/11	12:43	TPH
Toluene	ND	1.0		ND	3.8	20	6/7/11	3:59	TPH
1,2,4-Trichlorobenzene	ND	1.0		ND	7.4	20	6/7/11	3:59	TPH
1,1,1-Trichloroethane	62	1.0		340	5.5	20	6/7/11	3:59	TPH
1,1,2-Trichloroethane	ND	1.0		ND	5.5	20	6/7/11	3:59	TPH
Trichloroethylene	150	1.0		790	5.4	20	6/7/11	3:59	TPH
Trichlorofluoromethane (Freon 11)	ND	1.0		ND	5.6	20	6/7/11	3:59	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0		ND	7.7	20	6/7/11	3:59	TPH
1,2,4-Trimethylbenzene	ND	1.0		ND	4.9	20	6/7/11	3:59	TPH
1,3,5-Trimethylbenzene	ND	1.0		ND	4.9	20	6/7/11	3:59	TPH
Vinyl Acetate	ND	20		ND	70	20	6/7/11	3:59	TPH
Vinyl Chloride	1.3	1.0		3.3	2.6	20	6/7/11	3:59	TPH
m&p-Xylene	ND	2.0		ND	8.7	20	6/7/11	3:59	TPH
o-Xylene	ND	1.0		ND	4.3	20	6/7/11	3:59	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	101	70-130	6/7/11 12:43
4-Bromofluorobenzene (1)	104	70-130	6/7/11 3:59

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: EW-6-060211**  
**Sample ID: 11F0120-10**  
 Sample Matrix: Soil Gas  
 Sampled: 6/2/2011 14:11

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1756  
 Canister Size: 6 liter  
 Flow Controller ID: 4076  
 Sample Type: 30 min

**Work Order: 11F0120**  
 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	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analized		
Acetone	ND	20		ND	48	20	6/7/11	4:37	TPH
Benzene	ND	1.0		ND	3.2	20	6/7/11	4:37	TPH
Benzyl chloride	ND	1.0		ND	5.2	20	6/7/11	4:37	TPH
Bromodichloromethane	ND	1.0		ND	6.7	20	6/7/11	4:37	TPH
Bromoform	ND	1.0		ND	10	20	6/7/11	4:37	TPH
Bromomethane	ND	1.0		ND	3.9	20	6/7/11	4:37	TPH
1,3-Butadiene	ND	1.0		ND	2.2	20	6/7/11	4:37	TPH
2-Butanone (MEK)	ND	20		ND	59	20	6/7/11	4:37	TPH
Carbon Disulfide	3.6	1.0		11	3.1	20	6/7/11	4:37	TPH
Carbon Tetrachloride	ND	1.0		ND	6.3	20	6/7/11	4:37	TPH
Chlorobenzene	ND	1.0		ND	4.6	20	6/7/11	4:37	TPH
Chloroethane	ND	1.0		ND	2.6	20	6/7/11	4:37	TPH
Chloroform	ND	1.0		ND	4.9	20	6/7/11	4:37	TPH
Chloromethane	7.5	1.0		16	2.1	20	6/7/11	4:37	TPH
Cyclohexane	ND	1.0		ND	3.4	20	6/7/11	4:37	TPH
Dibromochloromethane	ND	1.0		ND	8.5	20	6/7/11	4:37	TPH
1,2-Dibromoethane (EDB)	ND	1.0		ND	7.7	20	6/7/11	4:37	TPH
1,2-Dichlorobenzene	ND	1.0		ND	6.0	20	6/7/11	4:37	TPH
1,3-Dichlorobenzene	ND	1.0		ND	6.0	20	6/7/11	4:37	TPH
1,4-Dichlorobenzene	ND	1.0		ND	6.0	20	6/7/11	4:37	TPH
Dichlorodifluoromethane (Freon 12)	ND	1.0		ND	4.9	20	6/7/11	4:37	TPH
1,1-Dichloroethane	2.9	1.0		12	4.0	20	6/7/11	4:37	TPH
1,2-Dichloroethane	ND	1.0		ND	4.0	20	6/7/11	4:37	TPH
1,1-Dichloroethylene	ND	1.0		ND	4.0	20	6/7/11	4:37	TPH
cis-1,2-Dichloroethylene	ND	1.0		ND	4.0	20	6/7/11	4:37	TPH
trans-1,2-Dichloroethylene	ND	1.0		ND	4.0	20	6/7/11	4:37	TPH
1,2-Dichloropropane	ND	1.0		ND	4.6	20	6/7/11	4:37	TPH
cis-1,3-Dichloropropene	ND	1.0		ND	4.5	20	6/7/11	4:37	TPH
trans-1,3-Dichloropropene	ND	1.0		ND	4.5	20	6/7/11	4:37	TPH
Ethanol	ND	20		ND	38	20	6/7/11	4:37	TPH
Ethyl Acetate	ND	1.0		ND	3.6	20	6/7/11	4:37	TPH
Ethylbenzene	ND	1.0		ND	4.3	20	6/7/11	4:37	TPH
4-Ethyltoluene	ND	1.0		ND	4.9	20	6/7/11	4:37	TPH
Heptane	ND	1.0		ND	4.1	20	6/7/11	4:37	TPH
Hexachlorobutadiene	ND	1.0		ND	11	20	6/7/11	4:37	TPH
Hexane	ND	1.0		ND	3.5	20	6/7/11	4:37	TPH
2-Hexanone (MBK)	ND	20		ND	82	20	6/7/11	4:37	TPH
Isopropanol	ND	10		ND	25	20	6/7/11	4:37	TPH



**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: EW-6-060211**  
**Sample ID: 11F0120-10**  
 Sample Matrix: Soil Gas  
 Sampled: 6/2/2011 14:11

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1756  
 Canister Size: 6 liter  
 Flow Controller ID: 4076  
 Sample Type: 30 min

**Work Order: 11F0120**  
 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	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Methyl tert-Butyl Ether (MTBE)	ND	1.0		ND	3.6	20	6/7/11	4:37	TPH
Methylene Chloride	ND	2.0		ND	6.9	20	6/7/11	4:37	TPH
Methyl methacrylate	ND	1.0		ND	4.1	20	6/7/11	4:37	TPH
4-Methyl-2-pentanone (MIBK)	ND	1.0		ND	4.1	20	6/7/11	4:37	TPH
Propene	ND	10		ND	17	20	6/7/11	4:37	TPH
Styrene	ND	1.0		ND	4.3	20	6/7/11	4:37	TPH
1,1,2,2-Tetrachloroethane	ND	1.0		ND	6.9	20	6/7/11	4:37	TPH
Tetrachloroethylene	ND	1.0		ND	6.8	20	6/7/11	4:37	TPH
Tetrahydrofuran	4400	10		13000	29	200	6/7/11	13:24	TPH
Toluene	ND	1.0		ND	3.8	20	6/7/11	4:37	TPH
1,2,4-Trichlorobenzene	ND	1.0		ND	7.4	20	6/7/11	4:37	TPH
1,1,1-Trichloroethane	15	1.0		80	5.5	20	6/7/11	4:37	TPH
1,1,2-Trichloroethane	ND	1.0		ND	5.5	20	6/7/11	4:37	TPH
Trichloroethylene	35	1.0		190	5.4	20	6/7/11	4:37	TPH
Trichlorofluoromethane (Freon 11)	1.9	1.0		11	5.6	20	6/7/11	4:37	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0		ND	7.7	20	6/7/11	4:37	TPH
1,2,4-Trimethylbenzene	ND	1.0		ND	4.9	20	6/7/11	4:37	TPH
1,3,5-Trimethylbenzene	ND	1.0		ND	4.9	20	6/7/11	4:37	TPH
Vinyl Acetate	ND	20		ND	70	20	6/7/11	4:37	TPH
Vinyl Chloride	ND	1.0		ND	2.6	20	6/7/11	4:37	TPH
m&p-Xylene	ND	2.0		ND	8.7	20	6/7/11	4:37	TPH
o-Xylene	ND	1.0		ND	4.3	20	6/7/11	4:37	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	96.5	70-130	6/7/11 13:24
4-Bromofluorobenzene (1)	96.9	70-130	6/7/11 4:37

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: EW-7-060211**  
**Sample ID: 11F0120-11**  
 Sample Matrix: Soil Gas  
 Sampled: 6/2/2011 11:45

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1110  
 Canister Size: 6 liter  
 Flow Controller ID: 4070  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -29.5  
 Final Vacuum(in Hg): -7  
 Receipt Vacuum(in Hg): -7  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analized		
Acetone	ND	20		ND	48	20	6/7/11	5:15	TPH
Benzene	ND	1.0		ND	3.2	20	6/7/11	5:15	TPH
Benzyl chloride	ND	1.0		ND	5.2	20	6/7/11	5:15	TPH
Bromodichloromethane	ND	1.0		ND	6.7	20	6/7/11	5:15	TPH
Bromoform	ND	1.0		ND	10	20	6/7/11	5:15	TPH
Bromomethane	ND	1.0		ND	3.9	20	6/7/11	5:15	TPH
1,3-Butadiene	ND	1.0		ND	2.2	20	6/7/11	5:15	TPH
2-Butanone (MEK)	ND	20		ND	59	20	6/7/11	5:15	TPH
Carbon Disulfide	ND	1.0		ND	3.1	20	6/7/11	5:15	TPH
Carbon Tetrachloride	ND	1.0		ND	6.3	20	6/7/11	5:15	TPH
Chlorobenzene	ND	1.0		ND	4.6	20	6/7/11	5:15	TPH
Chloroethane	ND	1.0		ND	2.6	20	6/7/11	5:15	TPH
Chloroform	ND	1.0		ND	4.9	20	6/7/11	5:15	TPH
Chloromethane	ND	1.0		ND	2.1	20	6/7/11	5:15	TPH
Cyclohexane	ND	1.0		ND	3.4	20	6/7/11	5:15	TPH
Dibromochloromethane	ND	1.0		ND	8.5	20	6/7/11	5:15	TPH
1,2-Dibromoethane (EDB)	ND	1.0		ND	7.7	20	6/7/11	5:15	TPH
1,2-Dichlorobenzene	ND	1.0		ND	6.0	20	6/7/11	5:15	TPH
1,3-Dichlorobenzene	ND	1.0		ND	6.0	20	6/7/11	5:15	TPH
1,4-Dichlorobenzene	ND	1.0		ND	6.0	20	6/7/11	5:15	TPH
Dichlorodifluoromethane (Freon 12)	ND	1.0		ND	4.9	20	6/7/11	5:15	TPH
1,1-Dichloroethane	11	1.0		45	4.0	20	6/7/11	5:15	TPH
1,2-Dichloroethane	ND	1.0		ND	4.0	20	6/7/11	5:15	TPH
1,1-Dichloroethylene	ND	1.0		ND	4.0	20	6/7/11	5:15	TPH
cis-1,2-Dichloroethylene	16	1.0		65	4.0	20	6/7/11	5:15	TPH
trans-1,2-Dichloroethylene	ND	1.0		ND	4.0	20	6/7/11	5:15	TPH
1,2-Dichloropropane	ND	1.0		ND	4.6	20	6/7/11	5:15	TPH
cis-1,3-Dichloropropene	ND	1.0		ND	4.5	20	6/7/11	5:15	TPH
trans-1,3-Dichloropropene	ND	1.0		ND	4.5	20	6/7/11	5:15	TPH
Ethanol	ND	20		ND	38	20	6/7/11	5:15	TPH
Ethyl Acetate	ND	1.0		ND	3.6	20	6/7/11	5:15	TPH
Ethylbenzene	ND	1.0		ND	4.3	20	6/7/11	5:15	TPH
4-Ethyltoluene	ND	1.0		ND	4.9	20	6/7/11	5:15	TPH
Heptane	ND	1.0		ND	4.1	20	6/7/11	5:15	TPH
Hexachlorobutadiene	ND	1.0		ND	11	20	6/7/11	5:15	TPH
Hexane	ND	1.0		ND	3.5	20	6/7/11	5:15	TPH
2-Hexanone (MBK)	ND	20		ND	82	20	6/7/11	5:15	TPH
Isopropanol	ND	10		ND	25	20	6/7/11	5:15	TPH

**ANALYTICAL RESULTS**

Project Location: Providence RI  
 Date Received: 6/3/2011  
**Field Sample #: EW-7-060211**  
**Sample ID: 11F0120-11**  
 Sample Matrix: Soil Gas  
 Sampled: 6/2/2011 11:45

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID: 1110  
 Canister Size: 6 liter  
 Flow Controller ID: 4070  
 Sample Type: 30 min

**Work Order: 11F0120**  
 Initial Vacuum(in Hg): -29.5  
 Final Vacuum(in Hg): -7  
 Receipt Vacuum(in Hg): -7  
 Flow Controller Type: Fixed-Orifice  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-15**

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Methyl tert-Butyl Ether (MTBE)	ND	1.0		ND	3.6	20	6/7/11	5:15	TPH
Methylene Chloride	ND	2.0		ND	6.9	20	6/7/11	5:15	TPH
Methyl methacrylate	ND	1.0		ND	4.1	20	6/7/11	5:15	TPH
4-Methyl-2-pentanone (MIBK)	ND	1.0		ND	4.1	20	6/7/11	5:15	TPH
Propene	ND	10		ND	17	20	6/7/11	5:15	TPH
Styrene	ND	1.0		ND	4.3	20	6/7/11	5:15	TPH
1,1,2,2-Tetrachloroethane	ND	1.0		ND	6.9	20	6/7/11	5:15	TPH
Tetrachloroethylene	18	1.0		120	6.8	20	6/7/11	5:15	TPH
Tetrahydrofuran	1300	2.0		3900	5.9	40	6/7/11	14:03	TPH
Toluene	ND	1.0		ND	3.8	20	6/7/11	5:15	TPH
1,2,4-Trichlorobenzene	ND	1.0		ND	7.4	20	6/7/11	5:15	TPH
1,1,1-Trichloroethane	ND	1.0		ND	5.5	20	6/7/11	5:15	TPH
1,1,2-Trichloroethane	ND	1.0		ND	5.5	20	6/7/11	5:15	TPH
Trichloroethylene	49	1.0		260	5.4	20	6/7/11	5:15	TPH
Trichlorofluoromethane (Freon 11)	59	1.0		330	5.6	20	6/7/11	5:15	TPH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0		ND	7.7	20	6/7/11	5:15	TPH
1,2,4-Trimethylbenzene	ND	1.0		ND	4.9	20	6/7/11	5:15	TPH
1,3,5-Trimethylbenzene	ND	1.0		ND	4.9	20	6/7/11	5:15	TPH
Vinyl Acetate	ND	20		ND	70	20	6/7/11	5:15	TPH
Vinyl Chloride	ND	1.0		ND	2.6	20	6/7/11	5:15	TPH
m&p-Xylene	ND	2.0		ND	8.7	20	6/7/11	5:15	TPH
o-Xylene	ND	1.0		ND	4.3	20	6/7/11	5:15	TPH

Surrogates	% Recovery	% REC Limits	
4-Bromofluorobenzene (1)	98.8	70-130	6/7/11 14:03
4-Bromofluorobenzene (1)	105	70-130	6/7/11 5:15



**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
11F0120-01 [IA-1-060211]	B031738	1	1	N/A	1000	400	400	06/06/11
11F0120-02 [IA-2-060211]	B031738	1	1	N/A	1000	400	400	06/06/11
11F0120-03 [IA-3-060211]	B031738	1	1	N/A	1000	400	400	06/06/11
11F0120-04 [IA-4-060211]	B031738	1	1	N/A	1000	400	400	06/06/11
11F0120-05 [IA-5-060211]	B031738	1	1	N/A	1000	400	400	06/06/11
11F0120-06 [IA-6-060211]	B031738	1	1	N/A	1000	400	400	06/06/11
11F0120-07 [IA-7-060211]	B031738	1	1	N/A	1000	400	400	06/06/11
11F0120-08 [AA-1-060211]	B031738	1	1	N/A	1000	400	400	06/06/11
11F0120-09 [EW-5-060211]	B031738	1	1	N/A	1000	400	20	06/06/11
11F0120-09RE1 [EW-5-060211]	B031738	2	100	10	1000	400	200	06/06/11
11F0120-10 [EW-6-060211]	B031738	1	1	N/A	1000	400	20	06/06/11
11F0120-10RE1 [EW-6-060211]	B031738	2	100	10	1000	400	400	06/06/11
11F0120-11 [EW-7-060211]	B031738	1	1	N/A	1000	400	20	06/06/11
11F0120-11RE1 [EW-7-060211]	B031738	2	1	N/A	1000	400	20	06/06/11

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

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

Batch B031738 - TO-15 Prep

Blank (B031738-BLK1)

Prepared & Analyzed: 06/06/11

Acetone	0.37	0.10								
Benzene	ND	0.025								
Benzyl chloride	ND	0.025								
Bromodichloromethane	ND	0.025								
Bromoform	ND	0.025								
Bromomethane	ND	0.025								
1,3-Butadiene	ND	0.025								
2-Butanone (MEK)	ND	0.025								
Carbon Disulfide	ND	0.025								
Carbon Tetrachloride	ND	0.025								
Chlorobenzene	ND	0.025								
Chloroethane	ND	0.025								
Chloroform	ND	0.025								
Chloromethane	ND	0.025								
Cyclohexane	ND	0.025								
Dibromochloromethane	ND	0.025								
1,2-Dibromoethane (EDB)	ND	0.025								
1,2-Dichlorobenzene	ND	0.025								
1,3-Dichlorobenzene	ND	0.025								
1,4-Dichlorobenzene	ND	0.025								
Dichlorodifluoromethane (Freon 12)	ND	0.025								
1,1-Dichloroethane	ND	0.025								
1,2-Dichloroethane	ND	0.025								
1,1-Dichloroethylene	ND	0.025								
cis-1,2-Dichloroethylene	ND	0.025								
trans-1,2-Dichloroethylene	ND	0.025								
1,2-Dichloropropane	ND	0.025								
cis-1,3-Dichloropropene	ND	0.025								
trans-1,3-Dichloropropene	ND	0.025								
Ethanol	ND	0.10								
Ethyl Acetate	ND	0.025								
Ethylbenzene	ND	0.025								
4-Ethyltoluene	ND	0.025								
Heptane	ND	0.025								
Hexachlorobutadiene	ND	0.025								
Hexane	ND	0.025								
2-Hexanone (MBK)	ND	0.025								
Isopropanol	ND	0.025								
Methyl tert-Butyl Ether (MTBE)	ND	0.025								
Methylene Chloride	ND	0.10								
Methyl methacrylate	ND	0.025								
4-Methyl-2-pentanone (MIBK)	ND	0.025								
Propene	ND	0.025								
Styrene	ND	0.025								
1,1,2,2-Tetrachloroethane	ND	0.025								
Tetrachloroethylene	ND	0.025								

**QUALITY CONTROL**

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

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

**Batch B031738 - TO-15 Prep**

**Blank (B031738-BLK1)**

Prepared & Analyzed: 06/06/11

Tetrahydrofuran	ND	0.025
Toluene	ND	0.025
1,2,4-Trichlorobenzene	ND	0.025
1,1,1-Trichloroethane	ND	0.025
1,1,2-Trichloroethane	ND	0.025
Trichloroethylene	ND	0.025
Trichlorofluoromethane (Freon 11)	ND	0.025
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.025
1,2,4-Trimethylbenzene	ND	0.025
1,3,5-Trimethylbenzene	ND	0.025
Vinyl Acetate	ND	0.025
Vinyl Chloride	ND	0.025
m&p-Xylene	ND	0.050
o-Xylene	ND	0.025

*Surrogate: 4-Bromofluorobenzene (1)*      7.81      8.00      97.6      70-130

**LCS (B031738-BS1)**

Prepared & Analyzed: 06/06/11

Acetone	5.09	5.00	102	50-150	B
Benzene	4.64	5.00	92.9	70-130	
Benzyl chloride	5.68	5.00	114	70-130	
Bromodichloromethane	4.85	5.00	97.0	70-130	
Bromoform	6.23	5.00	125	70-130	
Bromomethane	3.70	5.00	74.0	70-130	
1,3-Butadiene	4.05	5.00	80.9	70-130	
2-Butanone (MEK)	4.94	5.00	98.8	70-130	
Carbon Disulfide	5.44	5.00	109	70-130	
Carbon Tetrachloride	5.19	5.00	104	70-130	
Chlorobenzene	5.39	5.00	108	70-130	
Chloroethane	3.96	5.00	79.1	70-130	
Chloroform	5.29	5.00	106	70-130	
Chloromethane	3.68	5.00	73.6	70-130	
Cyclohexane	4.85	5.00	96.9	50-150	
Dibromochloromethane	5.80	5.00	116	70-130	
1,2-Dibromoethane (EDB)	5.16	5.00	103	70-130	
1,2-Dichlorobenzene	5.46	5.00	109	70-130	
1,3-Dichlorobenzene	5.58	5.00	112	70-130	
1,4-Dichlorobenzene	5.50	5.00	110	70-130	
Dichlorodifluoromethane (Freon 12)	5.43	5.00	109	70-130	
1,1-Dichloroethane	4.98	5.00	99.6	70-130	
1,2-Dichloroethane	4.87	5.00	97.3	70-130	
1,1-Dichloroethylene	4.88	5.00	97.6	70-130	
cis-1,2-Dichloroethylene	5.06	5.00	101	70-130	
trans-1,2-Dichloroethylene	5.15	5.00	103	70-130	
1,2-Dichloropropane	4.40	5.00	88.0	70-130	
cis-1,3-Dichloropropene	5.12	5.00	102	70-130	
trans-1,3-Dichloropropene	4.57	5.00	91.3	70-130	

**QUALITY CONTROL**

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

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	Limit		
<b>Batch B031738 - TO-15 Prep</b>											
<b>LCS (B031738-BS1)</b>						Prepared & Analyzed: 06/06/11					
Ethanol	3.27				5.00		65.4	50-150			
Ethyl Acetate	5.03				5.00		101	50-150			
Ethylbenzene	5.25				5.00		105	70-130			
4-Ethyltoluene	5.40				5.00		108	50-150			
Heptane	4.48				5.00		89.6	50-150			
Hexachlorobutadiene	5.11				5.00		102	70-130			
Hexane	4.19				5.00		83.8	70-130			
2-Hexanone (MBK)	5.52				5.00		110	50-150			
Isopropanol	4.06				5.00		81.2	50-150			
Methyl tert-Butyl Ether (MTBE)	5.35				5.00		107	70-130			
Methylene Chloride	4.59				5.00		91.8	70-130			
Methyl methacrylate	5.16				5.00		103	70-130			
4-Methyl-2-pentanone (MIBK)	3.97				5.00		79.4	70-130			
Propene	4.36				5.00		87.1	50-150			
Styrene	5.69				5.00		114	70-130			
1,1,2,2-Tetrachloroethane	5.08				5.00		102	70-130			
Tetrachloroethylene	5.18				5.00		104	70-130			
Tetrahydrofuran	5.83				5.00		117	50-150			
Toluene	5.21				5.00		104	70-130			
1,2,4-Trichlorobenzene	5.03				5.00		101	70-130			
1,1,1-Trichloroethane	4.53				5.00		90.7	70-130			
1,1,2-Trichloroethane	5.56				5.00		111	70-130			
Trichloroethylene	4.83				5.00		96.5	70-130			
Trichlorofluoromethane (Freon 11)	3.87				5.00		77.5	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	5.88				5.00		118	70-130			
1,2,4-Trimethylbenzene	5.34				5.00		107	70-130			
1,3,5-Trimethylbenzene	5.53				5.00		111	70-130			
Vinyl Acetate	5.95				5.00		119	70-130			
Vinyl Chloride	3.96				5.00		79.3	70-130			
m&p-Xylene	10.8				10.0		108	70-130			
o-Xylene	5.22				5.00		104	70-130			
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	<i>8.05</i>				<i>8.00</i>		<i>101</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 Limits	RPD	RPD Limit	Flag
	Results	RL	Results	RL						
<b>Batch B031738 - TO-15 Prep</b>										
<b>Duplicate (B031738-DUP1)</b>		<b>Source: 11F0120-03</b>				<b>Prepared &amp; Analyzed: 06/06/11</b>				
Acetone	4.4	0.20	10	0.48		4.8		9.32	25	B
Benzene	0.085	0.050	0.27	0.16		0.092		7.91	25	
Benzyl chloride	ND	0.050	ND	0.26		ND			25	
Bromodichloromethane	ND	0.050	ND	0.34		ND			25	
Bromoform	ND	0.050	ND	0.52		ND			25	
Bromomethane	ND	0.050	ND	0.19		ND			25	
1,3-Butadiene	ND	0.050	ND	0.11		ND			25	
2-Butanone (MEK)	ND	0.050	ND	0.15		ND			25	
Carbon Disulfide	ND	0.050	ND	0.16		ND			25	
Carbon Tetrachloride	0.095	0.050	0.60	0.31		0.10		7.11	25	
Chlorobenzene	ND	0.050	ND	0.23		ND			25	
Chloroethane	ND	0.050	ND	0.13		ND			25	
Chloroform	ND	0.050	ND	0.24		ND			25	
Chloromethane	0.50	0.050	1.0	0.10		0.56		11.9	25	
Cyclohexane	ND	0.050	ND	0.17		ND			25	
Dibromochloromethane	ND	0.050	ND	0.43		ND			25	
1,2-Dibromoethane (EDB)	ND	0.050	ND	0.38		ND			25	
1,2-Dichlorobenzene	ND	0.050	ND	0.30		ND			25	
1,3-Dichlorobenzene	ND	0.050	ND	0.30		ND			25	
1,4-Dichlorobenzene	ND	0.050	ND	0.30		ND			25	
Dichlorodifluoromethane (Freon 12)	0.32	0.050	1.6	0.25		0.43		28.7	25	R-01
1,1-Dichloroethane	ND	0.050	ND	0.20		ND			25	
1,2-Dichloroethane	ND	0.050	ND	0.20		ND			25	
1,1-Dichloroethylene	ND	0.050	ND	0.20		ND			25	
cis-1,2-Dichloroethylene	ND	0.050	ND	0.20		ND			25	
trans-1,2-Dichloroethylene	ND	0.050	ND	0.20		ND			25	
1,2-Dichloropropane	ND	0.050	ND	0.23		ND			25	
cis-1,3-Dichloropropene	ND	0.050	ND	0.23		ND			25	
trans-1,3-Dichloropropene	ND	0.050	ND	0.23		ND			25	
Ethanol	1.8	0.20	3.3	0.38		1.9		9.49	25	
Ethyl Acetate	ND	0.050	ND	0.18		ND			25	
Ethylbenzene	0.081	0.050	0.35	0.22		0.083		2.44	25	
4-Ethyltoluene	ND	0.050	ND	0.25		ND			25	
Heptane	ND	0.050	ND	0.20		ND			25	
Hexachlorobutadiene	ND	0.050	ND	0.53		ND			25	
Hexane	0.67	0.050	2.4	0.18		0.74		9.84	25	
2-Hexanone (MBK)	ND	0.050	ND	0.20		ND			25	
Isopropanol	ND	0.050	ND	0.12		ND			25	
Methyl tert-Butyl Ether (MTBE)	ND	0.050	ND	0.18		ND			25	
Methylene Chloride	2.1	0.20	7.4	0.69		2.3		8.61	25	
Methyl methacrylate	ND	0.050	ND	0.20		ND			25	
4-Methyl-2-pentanone (MIBK)	ND	0.050	ND	0.20		ND			25	
Propene	ND	0.050	ND	0.086		ND			25	
Styrene	ND	0.050	ND	0.21		ND			25	
1,1,2,2-Tetrachloroethane	ND	0.050	ND	0.34		ND			25	
Tetrachloroethylene	ND	0.050	ND	0.34		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
	Results	RL	Results	RL						
<b>Batch B031738 - TO-15 Prep</b>										
<b>Duplicate (B031738-DUP1)</b>		<b>Source: 11F0120-03</b>				<b>Prepared &amp; Analyzed: 06/06/11</b>				
Tetrahydrofuran	ND	0.050	ND	0.15		ND				25
Toluene	0.15	0.050	0.58	0.19		0.15		0.00		25
1,2,4-Trichlorobenzene	ND	0.050	ND	0.37		ND				25
1,1,1-Trichloroethane	ND	0.050	ND	0.27		ND				25
1,1,2-Trichloroethane	ND	0.050	ND	0.27		ND				25
Trichloroethylene	ND	0.050	ND	0.27		ND				25
Trichlorofluoromethane (Freon 11)	0.27	0.050	1.5	0.28		0.29		6.45		25
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.084	0.050	0.64	0.38		0.097		14.4		25
1,2,4-Trimethylbenzene	ND	0.050	ND	0.25		ND				25
1,3,5-Trimethylbenzene	ND	0.050	ND	0.25		ND				25
Vinyl Acetate	ND	0.050	ND	0.18		ND				25
Vinyl Chloride	ND	0.050	ND	0.13		ND				25
m&p-Xylene	0.12	0.10	0.54	0.43		0.13		1.60		25
o-Xylene	0.053	0.050	0.23	0.22		0.053		0.00		25
<i>Surrogate: 4-Bromofluorobenzene (1)</i>	<i>7.92</i>				<i>8.00</i>		<i>99.0</i>	<i>70-130</i>		

**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
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
- B Analyte is found in the associated blank as well as in the sample.
  - J Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
  - R-01 Duplicate RPD is outside of control limits. Reduced precision is anticipated for reported result.

**CERTIFICATIONS**

**Certified Analyses included in this Report**

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



**CERTIFICATIONS**

**Certified Analyses included in this Report**

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

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

Code	Description	Number	Expires
AIHA	American Industrial Hygiene Association	100033	01/1/2012
MA	Massachusetts DEP	M-MA100	06/30/2011
CT	Connecticut Department of Public Health	PH-0567	09/30/2011
NY	New York State Department of Health	10899 NELAP	04/1/2012
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2012
RI	Rhode Island Department of Health	LAO00112	12/30/2011
NC	North Carolina Div. of Water Quality	652	12/31/2011
NJ	New Jersey DEP	MA007 NELAP	06/30/2012
FL	Florida Department of Health	E871027 NELAP	06/30/2011
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2011
WA	State of Washington Department of Ecology	C2065	02/23/2012
ME	State of Maine	2011028	06/9/2013



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

**AIR SAMPLE CHAIN OF CUSTODY RECORD**

39 SPRUCE ST  
 EAST LONGMEADOW, MA 01028

11F0120

Company Name: Mactec Engineering  
 Address: 107 Audubon Rd  
Wakefield, MA  
 Attention: Kelly Chafferson  
 Project Location: Providence, RI  
 Sampled By: MAM

Telephone: (781) 245-6606  
 Project # 3650020111  
 Client PO # 2010527 (5-27-11)

DATA DELIVERY (check one):  
 FAX  EMAIL  WEBSITE CLIENT  
 Fax #: \_\_\_\_\_  
 Email: KChafferson@Mactec.com  
 Format:  EXCEL  PDF  GIS KEY  OTHER \_\_\_\_\_

Proposal Provided? (For Billing purposes)  
 yes  no proposal date \_\_\_\_\_

Field ID	Sample Description	Media	Lab #	Date		Total	Flow Rate	Volume	Matrix Code*	Summa Canister ID	Flow Controller ID	
				Time	Time							
IA-1-060211		S	01	6/2/11	6/2/11	30	0.2	6	IA	X	1317	4016
IA-2-060211		S	02	12/10	12/40	30	0.2	6	IA	X	1261	4078
IA-3-060211		S	03	12/17	12/47	30	0.2	6	IA	X	1301	4039
IA-4-060211		S	04	12/12	12/42	30	0.2	6	IA	X	1294	4079
IA-5-060211		S	05	12/19	12/49	30	0.2	6	IA	X	1661	4098
IA-6-060211		S	06	6/2/11	6/12/11	30	0.2	6	IA	X	1038	4081
IA-7-060211		S	07	13/05	13/35	30	0.2	6	IA	X	1231	4090
AA-1-060211		S	08	11/10	11/40	30	0.2	6	IA	X	1028	4085
AA-1-060211		S	08	6/2/11	6/12/11	30	0.2	6	Amb	X		

CLIENT COMMENTS: Flow controller - (1098) needle went backwards. stayed @ 0.

Relinquished by: (signature) \_\_\_\_\_ Date/Time: 6/3/11 17:15

Received by: (signature) \_\_\_\_\_ Date/Time: 6/3/11 17:15

Relinquished by: (signature) \_\_\_\_\_ Date/Time: 6/3/11 20:45

Received by: (signature) \_\_\_\_\_ Date/Time: 6/3/11 20:45

Turnaround \*\*  
 7-Day  
 10-Day  
 Other \_\_\_\_\_  
 RUSH \*  
 \*24-Hr  \*48-Hr  
 \*72-Hr  \*4-Day  
 \*Approval Required

Special Requirements  
 Regulations: CT Regs & Indoor Air  
 Data Enhancement/RCP?  Y  N  
 Enhanced Data Package  Y  N  
 Required Detection Limits: CT Target  
 (Surcharge Applies)  
 Other: Air Care (Commercial)

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

\*\*Media Codes:  
 S= summa can  
 TB= tediard bag  
 P= PUF  
 T= tube  
 F= filter  
 C= cassette  
 O= Other

\*\* TURNAROUND TIME STARTS AT 9:00 AM. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.



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 Fax: 413-525-6405  
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 www.contestlabs.com

**AIR SAMPLE CHAIN OF CUSTODY RECORD**

11C0120

39 SPRUCE ST  
 EAST LONGMEADOW, MA 01028

Company Name: Ma-tec Engineering

Address: 107 Audubon Rd.

Attention: Kelly Chafferson

Project Location: Previdence JRP

Sampled By: MA M

Proposal Provided? (For Billing purposes)

yes  no

Telephone: (781) 215-6606

Project # 3650050111

Client PO # 2610527 (S-27.11) quote

DATA DELIVERY (check one):  
 FAX  EMAIL  WEBSITE CLIENT

Fax #: \_\_\_\_\_

Email: KChafferson@ma-tec.com

Format:  EXCEL  PDF  GIS KEY  OTHER

Date Sampled

Start Stop

Date Time

Total Minutes Sampled

Flow Rate (L/Min. or M<sup>3</sup>/Min)

Volume (Liters or M<sup>3</sup>)

Matrix Code\*

ONLY USE WHEN USING PUMPS

ANALYSIS REQUESTED

"Hg"

Please fill out completely, sign, date and retain the yellow copy for your records

Summa canisters and flow controllers must be returned within 14 days of receipt or rental fees will apply.

Summa canisters will be retained for a minimum of 14 days after sampling date prior to cleaning.

Summa Canister ID

Flow Controller ID

10-15 (low level (gen))

1722

1756

1110

41076

41076

41076

41076

41076

41076

41076

41076

41076

41076

41076

41076

41076

Field ID	Sample Description	Media	Lab #	Date Time	Date Time	Total Minutes Sampled	Flow Rate (L/Min. or M <sup>3</sup> /Min)	Volume (Liters or M <sup>3</sup> )	Matrix Code*	ANALYSIS REQUESTED	"Hg"	Summa Canister ID	Flow Controller ID
EW-5-060211		S	09	6/5/11 1350	6/5/11 1420	30	0.2	6	SG	X		1722	41076
EW-6-060211		S	10	6/5/11 1341	6/5/11 1411	30	0.2	6	SG	X		1756	41076
EW-7-060211		S	11	6/5/11 1115	6/5/11 1145	30	0.2	6	SG	X		1110	41076
EW-(combined-060211)		S	12	6/5/11 1355	6/5/11 1425	30	0.2	6	SG	X		4107	4107

CLIENT COMMENTS: EW-(combined-060211) flow controller did not move.

Relinquished by: (signature)

[Signature]

Date/Time: 6/3/11 17:15

Received by: (signature)

[Signature]

Date/Time: 6/3/11 17:15

Relinquished by: (signature)

[Signature]

Date/Time: 6/3/11 20:45

Received by: (signature)

[Signature]

Date/Time: 6.5.11 2045

Turnaround \*\*

7-Day

10-Day

Other

RUSH \*

\*24-Hr  \*48-Hr

\*72-Hr  \*4-Day

\*Approval Required

Special Requirements

Regulations: CT Target Indoor Air

Data Enhancement/RCP?  Y  N

Enhanced Data Package  Y  N

(Surcharge Applies)

Required Detection Limits: CT Target

Other: Air level (Commercial)

\*Matrix Code:

SG=SOIL GAS

IA=INDOOR AIR

AMB=AMBIENT

SS=SUB SLAB

D=DUP

BL=BLANK

O=other

\*\*Media Codes:

S=summa can

TB=tedlar bag

P=PUF

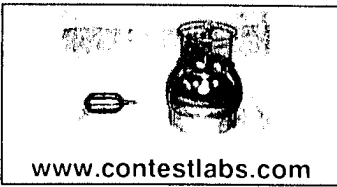
T=tube

F=filter

C=cassette

O=Other

\*\* TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.



39 Spruce St.  
 East Longmeadow, MA.  
 01028  
 P: 413-525-2332  
 F: 413-525-6405

### AIR Only Receipt Checklist

CLIENT NAME: MACTEC RECEIVED BY: PB DATE: 10.5.11

- 1) Was the chain(s) of custody relinquished and signed?  Yes  No
  - 2) Does the chain agree with the samples?  
 If not, explain:  Yes  No
  - 3) Are all the samples in good condition?  
 If not, explain:  Yes  No
  - 4) Are there any samples "On Hold"? Yes  No  Stored where:
  - 5) Are there any RUSH or SHORT HOLDING TIME samples? Yes  No
- Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Location where samples are stored:  Permission to subcontract samples? Yes  No   
 (Walk-in clients only) if not already approved  
 Client Signature: \_\_\_\_\_

Air Media received at Con-Test			
		# of Containers	Types (Size, Duration)
Air Sampling Media	Summa Cans	12	6 Lit
	Tedlar Bags		
	Tubes		
Flow Controllers	Regulators	12	30 min
	Restrictors		
Extras	Tubing		
	Other		

Unused Summas:

Unused Regulators:

- 1) Was all media (used & unused checked into the WASP?
- 2) Were all returned summa cans, Restrictors, & Regulators documented as returned in the Air Lab Inbound/Outbound Excel Spreadsheet?

Laboratory Comments:

1261	1028	1664	4107	4076	4079
1317	1231	1756	4097	4098	4078
1294	1110	1722	4070	4085	4016
1301	1038	1857	4084	4090	4039



## **APPENDIX B**

### **Analytical Laboratory Detection Limits**



39 Spruce Street, 2nd Floor  
 East Longmeadow, MA 01028  
 413.525.2332  
 413.525.6405 (fax)

**Analyte:**

TO-14 / TO-15	PPBv	UG/M3	PPBv	UG/M3	MW NIST	UG/M3	PPBv
1,1,1-Trichloroethane	ND	ND	0.050	<b>0.27</b>	<b>133.40</b>	1	0.18
1,1,2,2-Tetrachloroethane	ND	ND	0.050	0.34	167.85	1	0.15
1,1,2-Trichloroethane	ND	ND	0.050	0.27	133.40	1	0.18
1,1,2-Trichlorotrifluoroethane (freon 113)	ND	ND	0.050	0.38	<b>187.37</b>	1	0.13
1,1-Dichloroethane	ND	ND	0.050	0.20	98.96	1	0.25
1,1-Dichloroethene	ND	ND	0.050	0.20	<b>96.94</b>	1	0.25
1,2,4-Trichlorobenzene	ND	ND	0.050	0.37	181.45	1	0.13
1,2,4-Trimethylbenzene	ND	ND	0.050	0.25	<b>120.19</b>	1	0.20
1,2-Dibromoethane	ND	ND	0.050	0.38	187.86	1	0.13
1,2-Dichlorobenzene	ND	ND	0.050	0.30	<b>147.00</b>	1	0.17
1,2-Dichloroethane	ND	ND	0.050	0.20	98.96	1	0.25
1,2-Dichloropropane	ND	ND	0.050	0.23	<b>112.99</b>	1	0.22
1,2-Dichlorotetrafluoroethane (freon 114)	ND	ND	0.050	0.35	170.92	1	0.14
1,3 - Butadiene	ND	ND	0.050	0.11	54.09	1	0.45
1,3,5-Trimethylbenzene	ND	ND	0.050	0.25	<b>120.19</b>	1	0.20
1,3-Dichlorobenzene	ND	ND	0.050	0.30	147.00	1	0.17
1,4-Dichlorobenzene	ND	ND	0.050	0.30	147.00	1	0.17
1,4-Dioxane	ND	ND	0.050	0.18	88.11	1	0.28
2-Butanone (MEK)	ND	ND	0.050	0.15	<b>72.11</b>	1	0.34
2-Hexanone (MBK)	ND	ND	0.050	0.20	100.16	1	0.24
4-Ethyltoluene	ND	ND	0.050	0.25	120.19	1	0.20
4-Methyl-2-pentanone(MIBK)	ND	ND	0.050	0.20	<b>100.16</b>	1	0.24
Acetone	ND	ND	0.050	0.12	58.08	1	0.42
Acrolein	ND	ND	0.050	0.11	<b>56.06</b>	1	0.44
Benzene	ND	ND	0.050	0.16	78.11	1	0.31
Benzyl Chloride	ND	ND	0.050	0.26	<b>126.58</b>	1	0.19
Bromodichloromethane	ND	ND	0.050	0.34	163.83	1	0.15
Bromoform	ND	ND	0.050	0.52	252.73	1	0.10
Bromomethane	ND	ND	0.050	0.19	<b>94.94</b>	1	0.26
Carbon Disulfide	ND	ND	0.050	0.16	76.14	1	0.32
Carbon Tetrachloride	ND	ND	0.050	<b>0.31</b>	<b>153.82</b>	1	0.16



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Chlorobenzene	ND	ND	0.050	0.23	112.56	1	0.22
Chloroethane	ND	ND	0.050	0.13	64.51	1	0.38
Chloroform	ND	ND	0.050	0.24	119.38	1	0.20
Chloromethane	ND	ND	0.050	0.10	50.49	1	0.48
cis-1,2-Dichloroethene	ND	ND	0.050	0.20	96.94	1	0.25
cis-1,3-Dichloropropene	ND	ND	0.050	0.23	110.97	1	0.22
Cyclohexane	ND	ND	0.050	0.17	84.16	1	0.29
Dibromochloromethane	ND	ND	0.050	0.43	208.28	1	0.12
Dichlorodifluoromethane (freon 12)	ND	ND	0.050	0.25	120.91	1	0.20
Ethanol	ND	ND	0.050	0.09	46.07	1	0.53
Ethyl Acetate	ND	ND	0.050	0.18	88.11	1	0.28
Ethylbenzene	ND	ND	0.050	0.22	106.17	1	0.23
Heptane	ND	ND	0.050	0.20	100.20	1	0.24
Hexachlorobutadiene	ND	ND	0.050	0.53	260.76	1	0.09
Hexane	ND	ND	0.050	0.18	86.18	1	0.28
Isopropyl Alcohol	ND	ND	0.050	0.12	60.10	1	0.41
M/P Xylenes	ND	ND	0.050	0.22	106.17	1	0.23
Methylene Chloride	ND	ND	0.050	0.17	84.93	1	0.29
Methylmethacrylate	ND	ND	0.050	0.20	100.12	1	0.24
MTBE	ND	ND	0.050	0.18	88.15	1	0.28
O-Xylene	ND	ND	0.050	0.22	106.17	1	0.23
Propene	ND	ND	0.050	0.09	42.08	1	0.58
Styrene	ND	ND	0.050	0.21	104.15	1	0.23
Tetrachloroethene	ND	ND	0.050	<b>0.34</b>	165.83	1	0.15
Tetrahydrofuran	ND	ND	0.050	0.15	72.11	1	0.34
Toluene	ND	ND	0.050	0.19	92.14	1	0.27
trans-1,2-Dichloroethene	ND	ND	0.050	0.20	96.94	1	0.25
trans-1,3-Dichloropropene	ND	ND	0.050	0.23	110.97	1	0.22
Trichloroethene	ND	ND	0.050	<b>0.27</b>	131.39	1	0.19
Trichlorofluoromethane (freon 11)	ND	ND	0.050	0.28	137.37	1	0.18
Vinyl Acetate	ND	ND	0.050	0.18	86.09	1	0.28
Vinyl Chloride	ND	ND	0.050	<b>0.13</b>	62.50	1	0.39



39 Spruce Street, 2nd Floor  
 East Longmeadow, MA 01028  
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## APH COMPOUNDS

1,2,3-Trimethylbenzene	ND	ND	0.94	4.62	120.19	1	0.20
1,3 Butadiene	ND	ND	0.94	2.08	54.09	1	0.45
1,3,5-Trimethylbenzene	ND	ND	0.94	4.62	120.19	1	0.20
1-Ethyl-3-Methylbenzene	ND	ND	0.94	4.62	120.19	1	0.20
1-Methylnaphthalene	ND	ND	0.94	5.47	142.20	1	0.17
2,3-Dimethylheptane	ND	ND	0.94	4.93	128.26	1	0.19
2,3-Dimethylpentane	ND	ND	0.94	3.85	100.20	1	0.24
2-Methylnaphthalene	ND	ND	0.94	5.47	142.20	1	0.17
Benzene	ND	ND	0.94	3.00	78.11	1	0.31
Butyl Cyclohexane	ND	ND	0.94	5.39	140.27	1	0.17
Cyclohexane	ND	ND	0.94	3.24	84.16	1	0.29
Decane	ND	ND	0.94	5.47	142.28	1	0.17
Dodecane	ND	ND	0.94	6.55	170.33	1	0.14
Ethylbenzene	ND	ND	0.94	4.08	106.17	1	0.23
Heptane	ND	ND	0.94	3.85	100.20	1	0.24
Hexane	ND	ND	0.94	3.31	86.18	1	0.28
Hexyl Cyclohexane	ND	ND	0.94	6.47	168.32	1	0.15
Indene	ND	ND	0.94	4.47	116.16	1	0.21
Isopentane	ND	ND	0.94	2.77	72.15	1	0.34
Isopropylbenzene(Cumene)	ND	ND	0.94	4.62	120.19	1	0.20
m/p -Xylenes	ND	ND	0.94	4.08	106.17	1	0.23
Methyl-tert-butylether	ND	ND	0.94	3.39	88.15	1	0.28
Naphthalene	ND	ND	0.94	4.93	128.17	1	0.19
Nonane	ND	ND	0.94	4.93	128.26	1	0.19
Octane	ND	ND	0.94	4.39	114.23	1	0.21
o-Xylene	ND	ND	0.94	4.08	106.17	1	0.23
P-Iso-Propyl Toluene	ND	ND	0.94	5.16	134.22	1	0.18
Toluene	ND	ND	0.94	3.54	92.14	1	0.27
Toluene-D8	ND	ND	0.94	3.85	100.19	1	0.24
Undecane	ND	ND	0.94	6.01	156.31	1	0.16





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### EXTRA COMPOUNDS

1,1,1,2-tetrachloroethane	ND	ND	0.091	0.6247	167.85	1	0.15
1,2-Dibromo-3-chloropropane	ND	ND	0.065	0.6283	236.33	1	0.10
1,3-Dichloropropane	ND	ND	0.135	0.6238	112.99	1	0.22
1-Methylnaphthalene	ND	ND	0.107	0.6223	142.20	1	0.17
2,2,4-Trimethylpentane	ND	ND	0.134	0.6260	114.23	1	0.21
2-Methylnaphthalene	ND	ND	0.107	0.6223	142.20	1	0.17
Acrylonitrile	ND	ND	0.288	0.6250	53.06	1	0.46
Butylbenzene	ND	ND	0.114	0.6258	134.22	1	0.18
Cumene	ND	ND	0.127	0.6243	120.19	1	0.20
Hexylcyclohexane	ND	ND	0.091	0.6265	168.32	1	0.15
Indane	ND	ND	0.129	0.6235	118.18	1	0.21
Indene	ND	ND	0.132	0.6271	116.16	1	0.21
Metyl Acetate	ND	ND	0.206	0.6241	74.08	1	0.33
Methylcyclohexane	ND	ND	0.156	0.6265	98.19	1	0.25
Naphthalene	ND	ND	0.119	0.6238	128.17	1	0.19
P-cymene	ND	ND	0.114	0.6258	134.22	1	0.18
Propylbenzene	ND	ND	0.127	0.6243	120.19	1	0.20
Sec-butylbenzene	ND	ND	0.114	0.6258	134.22	1	0.18
Tert-butylbenzene	ND	ND	0.114	0.6258	134.22	1	0.18
Thiophene	ND	ND	0.182	0.6263	84.14	1	0.29

### OTHER COMPOUNDS

2-Chloro-pyridine	ND	ND	0.20	0.93	113.54	1	0.22
2,6-Dichloro-pyridine	ND	ND	0.20	1.19	144.97	1	0.17
tert-Butyl Alcohol	ND	ND	0.20	0.61	74.10	1	0.33