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December 14, 2007

Mr. Joseph T. Martella II, Senior Engineer
RIDEM Office of Waste Management
Site Remediation Program
235 Providence Street
Providence, RI 02908

RE: November 2007 Soil Vapor Investigation, Monitoring Well Installation, and Groundwater Sampling and Analysis
Former Gorham Manufacturing Facility, Retail Complex
333 Adelaide Avenue, Providence, Rhode Island
MACTEC Project No. 3650050041.09

Dear Mr. Martella:

This letter summarizes the recently completed Soil Vapor (second round) and Groundwater Investigation activities conducted at the retail complex located at the Former Gorham Manufacturing Facility, 333 Adelaide Avenue, Providence, Rhode Island (the Site) on November 12 - 19, 2007. This report also proposes follow-up activities with respect to sub-slab vapor mitigation and volatile organic compound (VOC) subsurface source identification and characterization at the retail complex.

BACKGROUND

This second round of soil vapor investigation and the groundwater investigation are follow-up activities to the sub-slab soil gas investigation conducted on August 7, 2007 and the indoor/outdoor air sampling and analysis program that were conducted for the retail complex on September 12, 2007. The November investigations were conducted to characterize the horizontal and vertical distributions of previously identified VOCs in soil gas within the footprint of the retail complex, to provide information required to evaluate whether the VOCs in soil gas were primarily associated with the unsaturated zone soils or the groundwater beneath the retail complex footprint, and to gather information to be utilized in the design of a vapor mitigation system for the retail complex. The retail complex consists of one large retail building (the former supermarket) and three smaller adjacent retail stores. One of the three smaller stores (a check-cashing service) is open for business. The remaining retail space is unoccupied.

WORK ACTIVITIES CONDUCTED

Based on the results of the previous groundwater, soil gas, and air sampling and analysis, and in coordination with the Rhode Island Department of Environmental Management (RIDEM), MACTEC and its subcontractor, Pine & Swallow Environmental, conducted a second round of soil vapor investigation on November 12 - 15, 2007, installed three (3) monitoring wells within the footprint of the retail complex on November 16, 2007, and collected groundwater samples and submitted them to ESS Laboratory for VOC analysis on November 19, 2007. These activities were performed in accordance with the MACTEC Source Identification Program that was proposed in the letter report *Indoor Air Investigation Results* dated November 5, 2007 (MACTEC, 2007 – approved by RIDEM). These activities included the collection and analysis of soil vapor samples at multiple depths at fourteen locations at the Site, the installation of three (3) water table monitoring wells, sampling and

analysis of groundwater samples from those monitoring wells, and the restoration of the concrete following the soil vapor and groundwater sampling event.

SOIL VAPOR SURVEY

On November 12 - 15, 2007, Pine & Swallow Environmental and MACTEC collected 42 soil vapor samples at the Site from 14 sampling points using direct push technology and a Pine & Swallow sampling technique. At each sampling location, samples were collected from three distinct depths: approximately 1 foot below ground surface (bgs); approximately 12 feet bgs; and approximately 21 feet bgs. All samples were collected from the vadose zone above the water table. Soil gas samples were collected from immediately below the slab after the slab was cored, the hole fitted with a bung and copper tube, the holed sealed with bentonite, and a purge of the sampling train. Samples were collected with a pump into sealed autosampler vials. For the 12-foot and 21 –foot samples, a slotted drive point was advanced, with iron pipe, to the desired depth using the H641 VibraDrill. The pipe volume was purged prior to collection of the soil gas sample in a sealed autosampler vial for VOC analysis. Soil vapor was screened prior to sample collection using a PPB RAE Photoionization Detector (PID). Figure 1 shows the locations of the 14 soil vapor sampling points.

Soil vapor samples were collected consistent with the letter report *Indoor Air Investigation Results* dated November 5, 2007 (MACTEC, 2007 – approved by RIDEM). Soil gas samples were analyzed in Pine & Swallow's on-site mobile laboratory. The mobile laboratory consisted of two (2) gas chromatographs connected in series and fitted with an electron capture detector (ECD), a PID, and a flame ionization detector (FID) in accordance with modified EPA Method 8021B. Soil vapor samples were analyzed for tetrachloroethylene (PCE), trichloroethylene (TCE), cis-1,2-dichloroethylene (cis-1,2-DCE), 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethane (1,1-DCA), acetone, vinyl chloride, 1,1-dichloroethylene, benzene, toluene, ethyl benzene and xylene. Standards were run twice daily (prior to and upon completion of the day's analyses) in the mobile laboratory to confirm and update calibration curves as necessary. Following sampling, the penetrations in the concrete slab were resealed with grout. Appendix A contains the Pine & Swallow report documenting the sampling and analytical procedures and analytical results.

GROUNDWATER INVESTIGATION

Pine & Swallow installed three MicroWells (MW-222S, MW-223S, and MW-224S) within the footprint of the former supermarket building on November 16, 2007. The locations of these MicroWells are shown in Figure 2. The MicroWells consist of steel pipe fitted with a drive point. The well screens are manufactured from the same material and consist of double rows of longitudinal slots 0.015 inch wide. The MicroWells were advanced using the H641 VibraDrill. All three wells were advanced to a depth of 33.0 feet bgs. Well screens were installed from 23.0 ft to 33.0 ft bgs (water table located between 26 and 27 feet bgs). The MicroWells installations were completed flush with grade inside road boxes. The wells were purged on November 16, 2007. Water recharge into the monitoring wells was not rapid. Collection of groundwater samples from the monitoring wells was conducted on November 19, 2007. Appendix A contains the Pine & Swallow report documenting the installation of the monitoring wells.

MACTEC collected one groundwater sample from each of the three monitoring wells (MW-222S, MW-223S and MW-224S) and also collected a duplicate sample from MW-224S. Sampling was conducted using a Waterra Double Valve sampling device. The samples were submitted, on ice and under chain of custody, to ESS Laboratory of Cranston, Rhode Island for analysis of VOCs via Method 8260.

RESULTS

Soil Vapor Survey

Table 1 presents reported soil gas concentrations of each analyte in parts per billion by volume (ppbv). In Table 1, for a given sample location (e.g., SG01), results are presented in separate columns for the three sample depths (identified as A (immediately below the slab), B (approximately 12 feet bgs, and C (approximately 21 feet bgs). Compounds with the highest soil gas concentrations include, in decreasing order, 1,1,1-TCA, 1,1-DCA, TCE, cis-1,2-DCE, and acetone. Concentrations of other chlorinated compounds and benzene, toluene, ethylbenzene, and xylenes were substantially lower than for the previously identified compounds. The soil gas sample locations are shown on Figure 1.

In general, the highest soil gas concentrations for the chlorinated solvent compounds were detected in the southwest corner of the former supermarket building (the area of SG-4, SG-5, and SG-16). The soil gas concentrations were generally higher in samples collected at depth than in the soil gas samples collected from immediately below the slab. Also, in general, compound-specific soil gas concentrations decrease from the 21-foot sample to the 12-foot sample, to the sub-slab sample. In some instances, however, the highest concentrations of some compounds were detected in the intermediate depth sample rather than in the deepest sample.

The soil gas sampling results for PCE; TCE; cis-1,2-DCE; 1,1,1-TCA; 1,1-DCA and acetone are presented in three-dimensional (3-D) on Figures 3 through 8. In these figures, as indicated in the legend, the spheres representing sample location in 3 dimensions are color-coded based on concentration and the spheres are also sized based on the log of the concentration. All of these figures are presented on a single sheet to facilitate comparisons of distributions of the various VOCs. Upon inspection of that multiple-figure sheet, it is obvious that the southwest corner of the former supermarket building is the location of the highest concentrations, and the concentrations at depth are higher than the concentrations immediately beneath the slab. The soil gas concentration distribution of each of these VOCs is discussed in detail below.

The detected soil gas concentrations of PCE are shown on Figure 3. Detected concentrations of PCE ranged from non-detect to 3,500 ppbv. The highest soil gas concentration was detected at SG-16C. The next highest detection was at SG-16B. The detected concentrations at the surrounding sampling locations were approximately one-half the highest detection.

The detected soil gas concentrations of TCE are shown on Figure 4. Detected concentrations of TCE ranged from 3.4 ppbv to 540,000 ppbv. The highest soil gas concentration was detected at SG-4B. The concentrations of TCE detected in the soil gas appear to decrease with increased distance from that sample point, with the lowest concentrations detected on the eastern side of the building.

The detected soil gas concentrations of cis-1,2-DCE are shown on Figure 5. Detected concentrations of cis-1,2-DCE ranged from non-detect to 49,000 ppbv. The two highest soil gas concentrations were detected at SG-2B and SG-2C, respectively. Soil gas concentrations of cis-1,2-DCE appear to decrease gradually towards the western side of the building. The lowest concentrations were detected on the eastern side of the building.

The detected soil gas concentrations of 1,1,1-TCA are shown on Figure 6. Detected concentrations of 1,1,1-TCA ranged from 150 ppbv to 1,600,000 ppbv. The highest soil gas concentration was detected at SG-5C. The lowest concentrations were detected on the eastern side of the building.

The detected soil gas concentrations of 1,1-DCA are shown on Figure 7. Detected concentrations of 1,1-DCA ranged from non-detect to 1,000,000 ppbv at location SG-5C. The concentrations of 1,1-DCA detected in the soil gas appear to decrease with increased distance from that sample point, with the lowest concentrations detected on the eastern side of the building.

The detected soil gas concentrations of acetone are shown on Figure 8. Detected concentrations of acetone ranged from non-detect to 24,000 ppbv at SG-16B. The lowest concentrations of acetone were detected on the eastern side of the building.

Groundwater Investigation

Table 2 presents a summary of the analytical data for the VOCs detected in at least one groundwater sample collected on November 19, 2007. The laboratory report for these groundwater samples is contained in Appendix B. Compounds detected most frequently and at higher concentrations include, in decreasing order, 1,1,1-TCA, 1,1-DCA, TCE, cis-1,2-DCE, 1,1-DCE, and acetone. The highest concentration of each of these compounds was reported for the sample collected from monitoring well MW-222S which is co-located with soil gas sampling location SG-4. These six compounds were also the six compounds detected at the highest concentrations in soil gas samples. The ordering of the compounds from highest concentration to lowest concentration is identical for soil gas and groundwater.

CONCLUSIONS

Based on the results of the soil gas and groundwater investigations, it appears that groundwater and possibly vadose zone soils in the vicinity of SG-4/MW-222, SG-16, and SG-5 contain a source of VOCs associated the observed VOC indoor air concentrations. VOC concentrations at other soil gas sample locations within the retail complex are substantially lower and are not indicative of additional sources.

PROPOSED ACTIONS

The preliminary vacuum test within the soil immediately beneath the concrete slab on November 19, 2007 concluded that additional work is required for the vapor mitigation system design. A proposed Pre-Design Investigation would include return to the Site the week of December 17, 2007 to determine additional subsurface soil characteristics by installing up to 4 soil borings through the concrete floor and installing two vertical soil vapor well points to be used in vacuum testing of the soils using a manometer. All penetrations of the concrete slab will be resealed with grout. This will be completed in a one day event and results will be submitted to RIDEM approximately 30 days following the

investigation. The report will include an evaluation of the results and recommendations for further action (including a proposed mitigation alternative).

In addition, a Scope of Work (SOW) for a source identification investigation will also be prepared and be submitted for approval. This SOW would include further assessment of groundwater conditions at the building complex as well as upgradient and downgradient of the building complex. The SOW will be designed to complement future investigation activities designed to refine the conceptual site model and to characterize the potential link between VOCs in groundwater and VOCs in sediments of Mashapaug Cove.

Feel free to contact either Michael Murphy at (781) 213-5600 or Greg Simpson of Textron at (401) 457-2635 with any questions. We are available either for a conference call or to meet with RIDEM to address any questions you may have on these results and the Work Plan.

Sincerely,
MACTEC Engineering and Consulting, Inc.

Michael Murphy
Senior Principal Scientist

David E. Heislein
Principal Engineer

Attachments: Tables
Figures
Appendix A – Limited Subsurface Investigation, Pine & Swallow Environmental
Appendix B – ESS Laboratory Report for Groundwater Samples

cc: T. Dellar, City of Providence
P. Grivers, EA Engineering, Science, and Technology
T. Regan, EA Engineering, Science, and Technology
G. Simpson, Textron, Inc.
D. McCabe, Textron, Inc.
Knight Memorial Library Repository
G. Wilson, Kimco Realty Corporation (including tenants)
J. Morgan, The Stop & Shop Supermarket Co. LLC
MACTEC Project File [P:\TEXTRON\GORHAM\Stop & Shop\SoilGas&WellsNOV2007\SoilGasMWinstallNOV2007REPORTr\SoilGasMWinstallNOV2007REPORT121307.doc]

Tables

Table 1
Soil Gas Concentrations (ppbv)
November 2007 Investigation
333 Adelaide Avenue
Providence, Rhode Island

ppbv	SG01			SG02			SG03			SG04			SG05		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Vinyl chloride	11 U	11 U	0.5 J	5.3 J	7.8 J	7.9 J	5.7 J	14	7.4 J	11 U	11 U	57	11 U	11 U	11 U
Acetone	115	950	520	7500	9600	9400	1200	2300	1300	5200	22000	22000	1600	8400	23000 D
Methyl tert butyl ether	10 U	5 J	4.4 J	39	92	83	19	56	35	10 U	10 U	59	10 U	10 U	10 U
Benzene	9.8 U	1000	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U
Toluene	10 U	93	3.5 J	10 U	10 U	10 U	10 U	29	140	10 U	10 U	440	10 U	91	10 U
Ethylbenzene	10 U	8.6 J	10 U	10 U	10 U	10 U	10 U	15	99	10 U	9.6 J	29	10 U	21	10 U
m+p-Xylene	20 U	19 J	4.2 J	20 U	20 U	20 U	20 U	22	110	20 U	20	57	20 U	62	20 U
o-Xylene	10 U	10 U	6.3 J	10 U	412	86	10 U	26	290	10 U	60	71	10 U	69	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	860	10 U	10 U	10 U
trans-1,2-Dichloroethene	60 U	60 U	60 U	240	330	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
cis-1,2-Dichloroethene	60 U	60 U	320	12000 D	49000 D	42000 D	1800	21000 D	24000 D	150	22000 D	2700	60 U	3100	27000 D
1,1-Dichloroethane	60 U	60 U	5500 D	38000 D	60000 D	56000 D	19000 D	3100 D	25000 D	9800	100000 D	16000	2900	38000 D	1000000 D
1,1,1-Trichloroethane	660 D	150	1800 D	79000 D	560000 D	590000 D	61000 D	110000 D	510000 D	150000 D	1400000 D	860000	14000 D	1240000 D	1600000 D
1,2-Dichloroethane	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Trichloroethene	58	12	184 D	2600 D	20000 D	29000 D	1300 D	1500 D	29000 D	11000 D	540000 D	290000	320	230000 D	440000 D
Tetrachloroethene	8.4	7 U	2.6 J	10	170	370	7	33	110	33	1600 D	1500	7 U	64	1200

Table 1
Soil Gas Concentrations (ppbv)
November 2007 Investigation
333 Adelaide Avenue
Providence, Rhode Island

ppbv	SG06			SG10			SG11			SG12			SG13		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Vinyl chloride	11 U	0.3 J	0.4 J	11 U	3.2	2 J	11 U	1.7 J	11 U	11 U	11 U	2.8 J	11 U	5.4 J	35
Acetone	86	1000	1400	130	960	980	250	1400	1500	12 U	12 U	3000	13	450	97
Methyl tert butyl ether	10 U	19	10 U	10 U	13	15	10 U	8 J	6.9 J	10 U	10 U	10 U	10 U	2.2 J	9 J
Benzene	9.8 U	9.8 U	9.8 U	9.8 U	190	740	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	71	350
Toluene	10 U	58	20	10 U	126	970	10 U	33	46	10 U	10 U	160	10 U	34	120
Ethylbenzene	10 U	88	21	10 U	53	780	10 U	12	30	10 U	10 U	39	10 U	6.7 J	14
m+p-Xylene	20 U	120	26	20 U	61	590	20 U	23	37	20 U	20 U	81	20 U	17 J	23
o-Xylene	10 U	600	190	10 U	300	1700	10 U	71	89	10 U	10 U	97	10 U	12	26
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
cis-1,2-Dichloroethene	52 J	160	170	60 U	67	200	60 U	130	120	57 J	51 J	160	60 U	60 U	140
1,1-Dichloroethane	850	3800	6500	60 U	60 U	60 U	500	2600	3000	1100	60 U	1800	60 U	60 U	60 U
1,1,1-Trichloroethane	14000 D	210000 D	260000 D	160 D	920 D	10200 D	35000 D	130000 D	165000 D	68000 D	230	8800 D	760 D	850 D	840 D
1,2-Dichloroethane	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Trichloroethene	320	31000 D	39000 D	3.4 J	112	250	210	3400 D	5800 D	400	21	1700 D	40	33	62
Tetrachloroethene	7 U	610	950 D	2.8 J	3.3 J	4.2 J	7 U	11	31	7 U	7 U	7 U	5.9 J	6.4 J	8.4

Table 1
Soil Gas Concentrations (ppbv)
November 2007 Investigation
333 Adelaide Avenue
Providence, Rhode Island

ppbv	SG14			SG15			SG16			SG17		
	A	B	C	A	B	C	A	B	C	A	B	C
Vinyl chloride	0.5 J	3.9 J	3.3 J	1.5 J	6.6 J	11	13	8.4 J	8.1 J	11 U	1.7 J	2.2 J
Acetone	330	11000	10000	6800	14000	15000	4000	24000	22000	820	3700	4400
Methyl tert butyl ether	10 U	36	31	10 U	44	54	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U
Toluene	6.7 J	10 U	24	10 U	4.7 J	130	10 U	24	200	5.5 J	6.8 J	4 J
Ethylbenzene	10 U	5.7 J	5.8 J	10 U	10 U	90	10 U	12	2.8 J	54	22	5.2 J
m+p-Xylene	3.2 J	16	9.3 J	20 U	20 U	98	20 U	21	6 J	250	94	21
o-Xylene	10 U	24	10 U	10 U	10 U	93	10 U	67	12	64	31	12
1,1-Dichloroethene	10 U	300	250	10 U	850	980	7950	1400	1200	10 U	51	120
trans-1,2-Dichloroethene	60 U	60 U	60 U	60 U	60 U	60 U	300	180	180	60 U	53 J	56 J
cis-1,2-Dichloroethene	52 J	3800	3300	120	23000 D	23000 D	22000 D	30000 D	30000 D	140	3500	6000
1,1-Dichloroethane	890	19000 D	36000 D	9800	22000 D	24000 D	1100 D	100000 D	120000 D	7200 D	28000 D	9700 D
1,1,1-Trichloroethane	20000 D	600000 D	820000 D	210000 D	930000 D	900000 D	160000 D	1100000 D	1400000 D	120000 D	320000 D	390000 D
1,2-Dichloroethane	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Trichloroethene	550 D	170000 D	220000 D	9100 D	230000 D	210000 D	40000 D	440000 D	52000 D	11000 D	28000 D	97000 D
Tetrachloroethene	1.2 J	730	740 D	7.5	1000 D	1000 D	100	3000 D	3500 D	11	390	600

ppbv = parts per billion by volume

Prepared by: KJC 11/16/07
Checked by: BJR 11/16/07

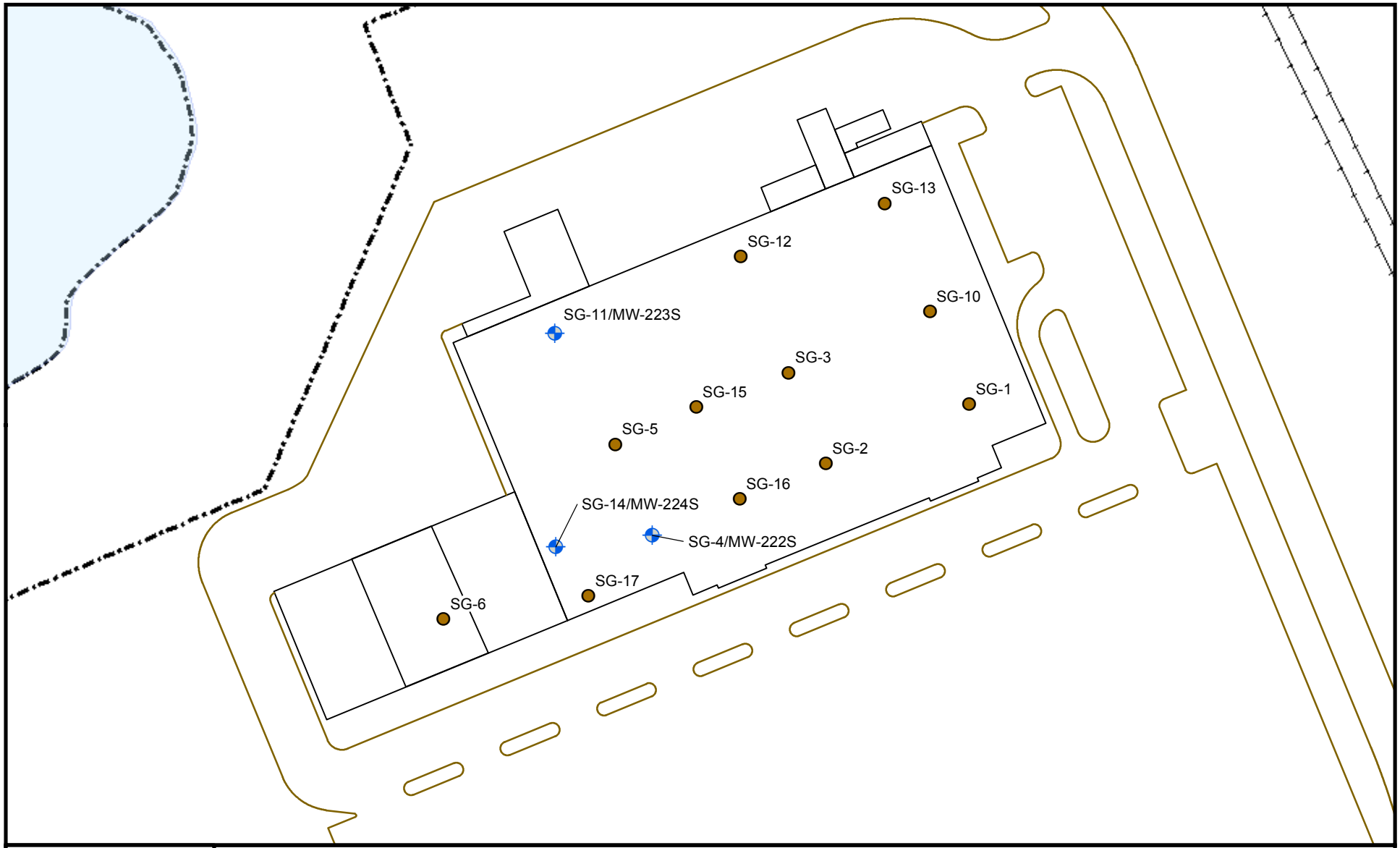
Table 2
Groundwater Concentrations (mg/L)
November 2007 Investigation
333 Adelaide Avenue
Providence, Rhode Island

Chemical Name	Frequency of Detection	Range of SQLs	Range of Detected Concentrations	MW-222S 11/19/2007	MW-223S 11/19/2007	MW-224S 11/19/2007	MW-224S-Dup 11/19/2007
Volatile Organics (mg/L)							
1,1,1-Trichloroethane	4 / 4		0.0656 - 7.42	7.42	0.0656	1.75	1.96
1,1,2-Trichloroethane	1 / 4	0.001 : 0.001	0.0043 - 0.0043	0.0043	< 0.001	< 0.001	< 0.001
1,1-Dichloroethane	4 / 4		0.0023 - 5.79	5.79	0.0023	0.19	0.19
1,1-Dichloroethene	4 / 4		0.0011 - 0.287	0.287	0.0011	0.0525	0.0618
2-Butanone	1 / 4	0.025 : 0.025	0.0631 - 0.0631	0.0631	< 0.025	< 0.025	< 0.025
Acetone	1 / 4	0.025 : 0.025	0.364 - 0.364	0.364	< 0.025	< 0.025	< 0.025
Chloroethane	3 / 4	0.002 : 0.002	0.0048 - 0.0286	0.0286	< 0.002	0.0048	0.0054
Chloroform	1 / 4	0.001 : 0.001	0.001 - 0.001	0.001	< 0.001	< 0.001	< 0.001
cis-1,2-Dichloroethene	3 / 4	0.001 : 0.001	0.0925 - 0.404	0.404	< 0.001	0.0925	0.0955
Naphthalene	3 / 4	0.001 : 0.001	0.0016 - 0.0076	0.0076	< 0.001	0.0016	0.0019
Tetrachloroethene	3 / 4	0.001 : 0.001	0.0021 - 0.0128	0.0128	< 0.001	0.0021	0.0022
Toluene	3 / 4	0.001 : 0.001	0.0017 - 0.0027	0.0027	< 0.001	0.0017	0.0017
trans-1,2-Dichloroethene	1 / 4	0.001 : 0.001	0.0043 - 0.0043	0.0043	< 0.001	< 0.001	< 0.001
Trichloroethene	4 / 4		0.0077 - 7.09	7.09	0.0077	0.883	0.878
Trichlorofluoromethane	3 / 4	0.002 : 0.002	0.0039 - 0.0106	0.0106	< 0.002	0.0039	0.0046
Vinyl chloride	1 / 4	0.001 : 0.001	0.0116 - 0.0116	0.0116	< 0.001	< 0.001	< 0.001
Xylene, M&P-	1 / 4	0.002 : 0.002	0.0026 - 0.0026	0.0026	< 0.002	< 0.002	< 0.002
Xylene, O-	1 / 4	0.001 : 0.001	0.0012 - 0.0012	0.0012	< 0.001	< 0.001	< 0.001
Xylenes, Total	1 / 4	0.003 : 0.003	0.0038 - 0.0038	0.0038	< 0.003	< 0.003	< 0.003

mg/L = milligrams per liter
SQL = Sample Quantitation Limit

Prepared by: KJC 12/11/07
Checked by: MH 12/12/07

Figures



MACTEC

N

0 40 80 Feet

Prepared by BJR | Checked by MH

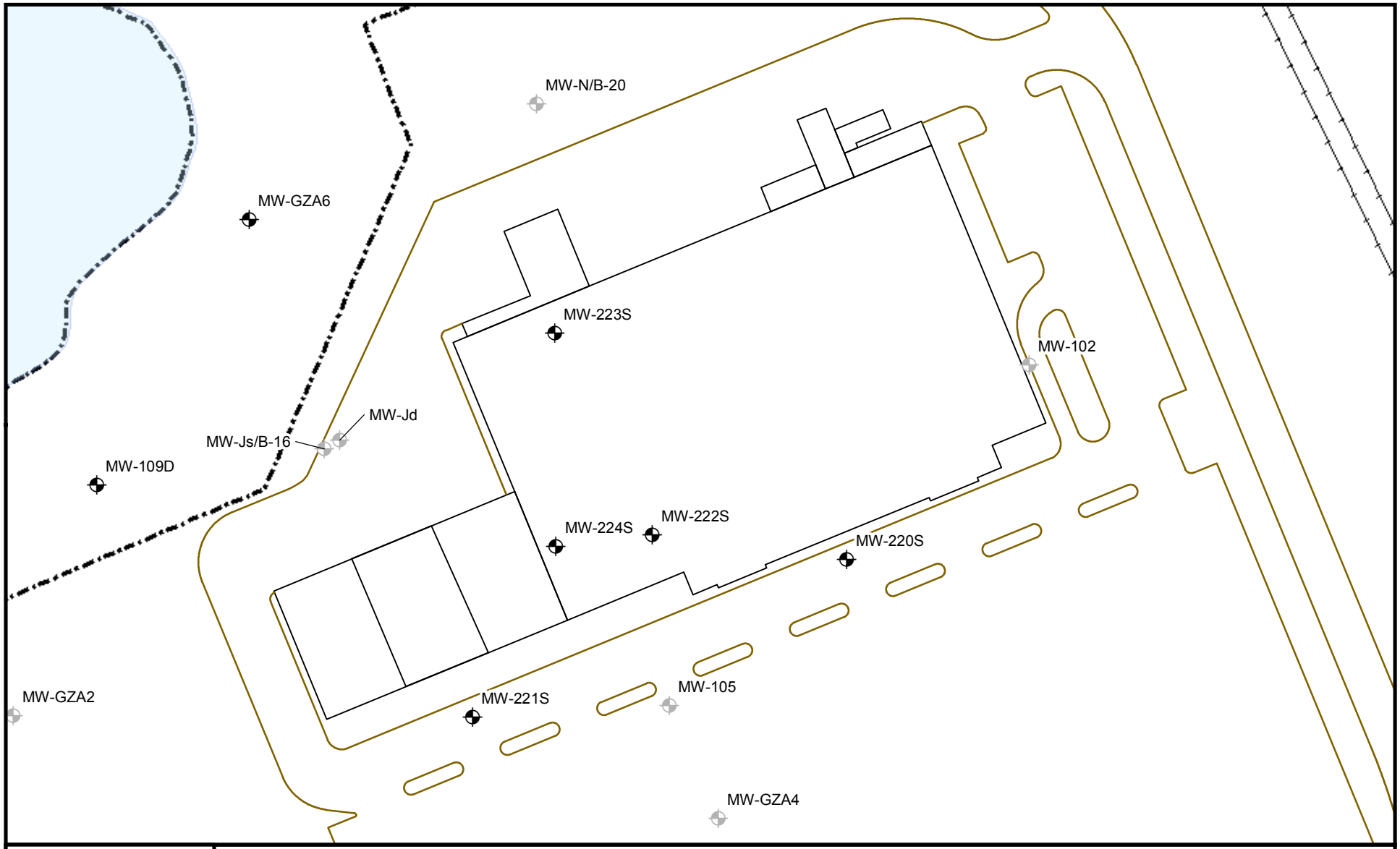
Legend

- Soil Gas Sample Location
- Soil Gas Sample Location and Monitoring Well
- Pavement Outline
- Current Building

Figure 1
Soil Gas Sampling Locations

November 2007 Investigation
333 Adelaide Avenue
Providence, Rhode Island

Document: P:\TEXTRON\GORHAM\GIS\MapDocuments\StopShopVI.mxd PDF: P:\TEXTRON\GORHAM\GIS\Figures\Vapor Intrusion\SoilGasMonitoringWellLocations.pdf 12/13/2007 3:50 PM bjroden



MACTEC

N

0 40 80 Feet

Prepared by BJR | Checked by MH

Legend

- Historical Monitoring Well
- Current Monitoring Well
- Pavement Outline
- Current Building

Figure 2
Monitoring Well Locations

November 2007 Investigation
333 Adelaide Avenue
Providence, Rhode Island

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Summary of Horizontal and Vertical Distribution Of VOCs in Soil Gas Samples

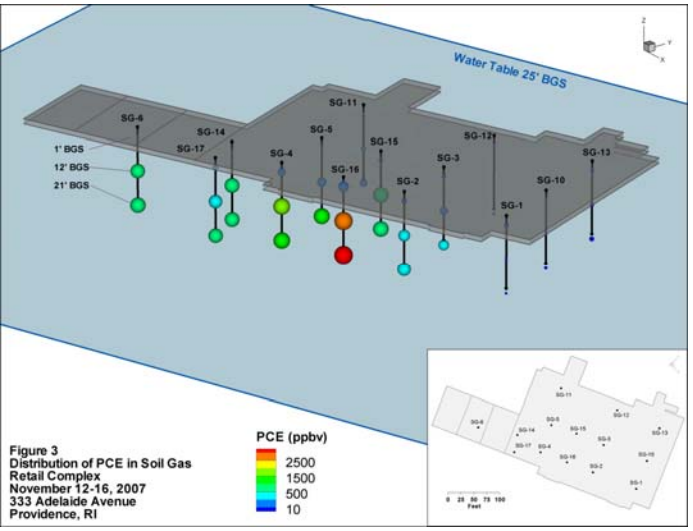


Figure 3
Distribution of PCE in Soil Gas
Retail Complex
November 12-16, 2007
333 Adelaide Avenue
Providence, RI

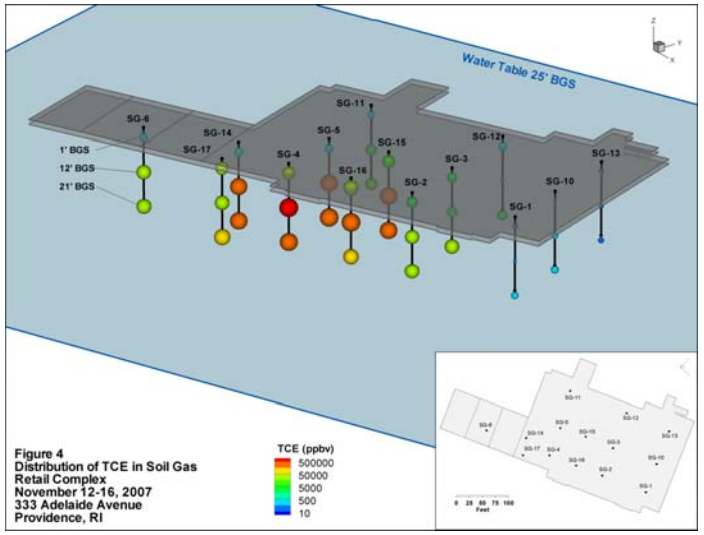


Figure 4
Distribution of TCE in Soil Gas
Retail Complex
November 12-16, 2007
333 Adelaide Avenue
Providence, RI

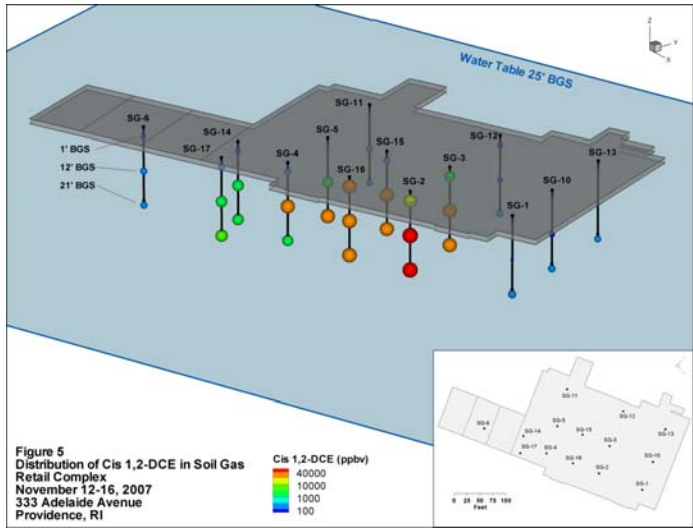


Figure 5
Distribution of Cis 1,2-DCE in Soil Gas
Retail Complex
November 12-16, 2007
333 Adelaide Avenue
Providence, RI

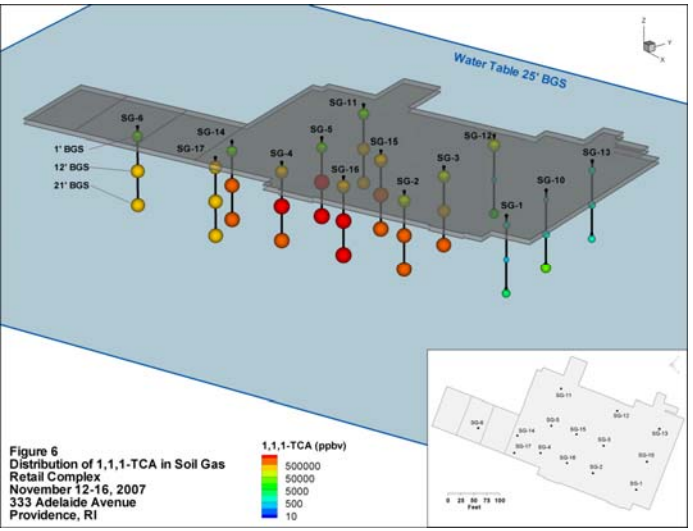


Figure 6
Distribution of 1,1,1-TCA in Soil Gas
Retail Complex
November 12-16, 2007
333 Adelaide Avenue
Providence, RI

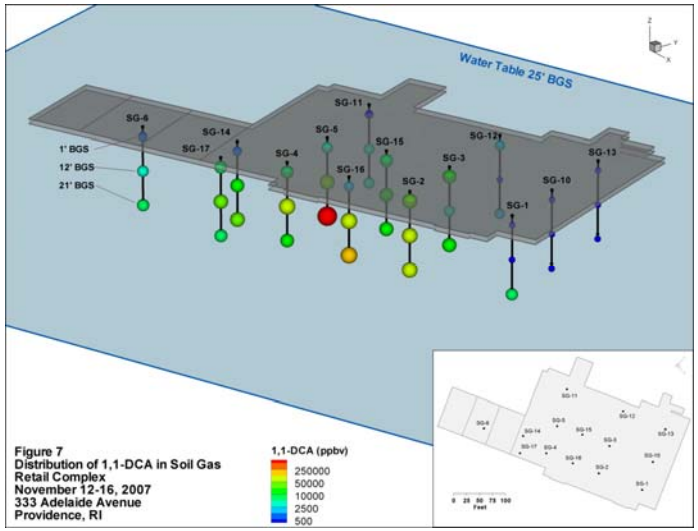


Figure 7
Distribution of 1,1-DCA in Soil Gas
Retail Complex
November 12-16, 2007
333 Adelaide Avenue
Providence, RI

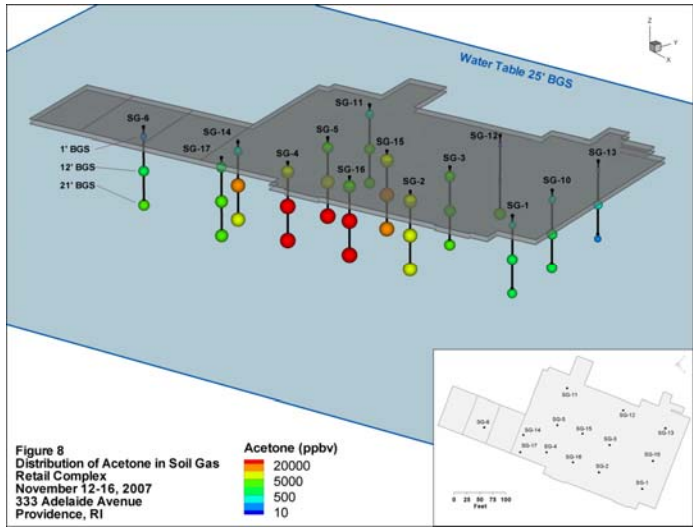


Figure 8
Distribution of Acetone in Soil Gas
Retail Complex
November 12-16, 2007
333 Adelaide Avenue
Providence, RI

Appendix A
Limited Subsurface Investigation, Pine & Swallow Environmental

Pine&Swallow
ENVIRONMENTAL

Limited Subsurface Investigation
Former Manufacturing Facility
Providence RI

Prepared for

MACTEC Engineering and Consulting, Inc.
107 Audubon Road
Wakefield, MA 01880
Attn: Phillip Muller

November 28, 2007
P&S Reference Number: 07245

Pine&Swallow ENVIRONMENTAL
867 Boston Road, Groton, MA 01450

Limited Subsurface Investigation
Former Manufacturing Facility
Providence RI

Prepared for

MACTEC Engineering and Consulting, Inc.
107 Audubon Road
Wakefield, MA 01880
Attn: Phillip Muller

Prepared by

PINE & SWALLOW ENVIRONMENTAL
Environmental Scientists, Engineers and Designers

867 Boston Road
Groton, MA 01450
978-448-9511

November 28, 2007
P&S Reference Number: 07245

Pine&Swallow
ENVIRONMENTAL

Vertical Profiling • Direct Push Drilling • Mobile Laboratory • Soil Vapor Survey • High Pressure Injection

November 28, 2007

Phillip Muller
MACTEC Engineering and Consulting, Inc.
107 Audubon Road
Wakefield, MA 01880

RE: Former Manufacturing Facility. Providence RI

Dear Phil,

In accordance with the proposal dated November 1, 2007, enclosed is our report on subsurface investigations performed at the Providence RI site. This report summarizes the equipment and procedures employed by P&S for soil gas sampling and the installation of MicroWells as well as the results of on-site gas chromatographic analyses of soil gas.

We appreciated the opportunity to work with you and thank you for engaging our services for this project. If there are any questions, please do not hesitate to call.

Sincerely yours,
Pine & Swallow Environmental

Michael Agonis
Operations Manager/Environmental Scientist

Limited Subsurface Investigation
Former Manufacturing Facility
Providence RI

I. INTRODUCTION AND PROGRAM SUMMARY

On November 12, 13, 14, 15 and 16, 2007, Pine & Swallow Environmental (P&S) conducted limited subsurface investigations of the Former Manufacturing Facility site. The purpose of P&S's effort was to assist MACTEC Engineering and Consulting, Inc. in assessing soil gasl and groundwater conditions at the site. Details of equipment and procedures for soil gas sampling and MicroWell® installation programs and the methodology and results of on-site gas chromatographic (GC) analyses of soil gas samples for selected volatile organic compounds are enclosed.

Program Summary

P&S's study included soil gas sampling at fourteen locations. Soil gas samples were collected from below the slab, twelve feet and twenty-one feet below ground surface (BGS) and were analyzed with Hewlett Packard 5890 GC for vinyl chloride, acetone, MTBE, benzene, toluene, ethylbenzene, m+p xylenes, o-xylene, 1,1-dichloroethene, trans 1,2-dichloroethene, cis 1,2-dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane, 1,2-dichloroethane, trichloroethene and tetrachloroethene in P&S's mobile laboratory.

P&S installed three MicroWells. The wells were developed, but not sampled at the time of installation as decided by MACTEC field personnel.

® MicroWell and VibraDrill are registered trademarks of Pine & Swallow Associates, Inc.

All installation and sampling locations were chosen by MACTEC Engineering and Consulting, Inc. field personnel. All analyses were performed in P&S's field laboratory for compounds determined by MACTEC Engineering and Consulting, Inc.'s program.

II. FIELD INVESTIGATION METHODS AND PROCEDURES

SOIL GAS INVESTIGATION

Soil Gas Equipment and Methods

Soil gas analysis refers to gas chromatographic (GC) analysis of the soil atmosphere (soil gas) to detect volatiles originating from contaminated soil, from a contaminant groundwater plume or from pure product floating on the groundwater surface. Soil gas analysis allows comparison of concentrations of volatile constituents over an array of test locations to indicate pertinent dimensions of a discharge or plume.

Sequential soil gas samples were obtained by drilling through the concrete slab with a 1.0" hammer drill to a depth approximately 6" into the soil below the slab. P&S personnel then placed a bung with a copper tube in the hole and sealed the joint with bentonite. The first sample was collected from immediately below the concrete slab through tubing within the hole created in the soil layer. P&S personnel then utilized the VibraDrill H641 to advance a half-inch, steam-cleaned, MicroWell with a six-inch screen through the floor slab to a selected depth below grade. All samples were collected by sealing the top of the sampling probe with a tubing adapter that connects to a monitoring panel and vacuum pump. The sampling system was then purged for approximately thirty seconds.

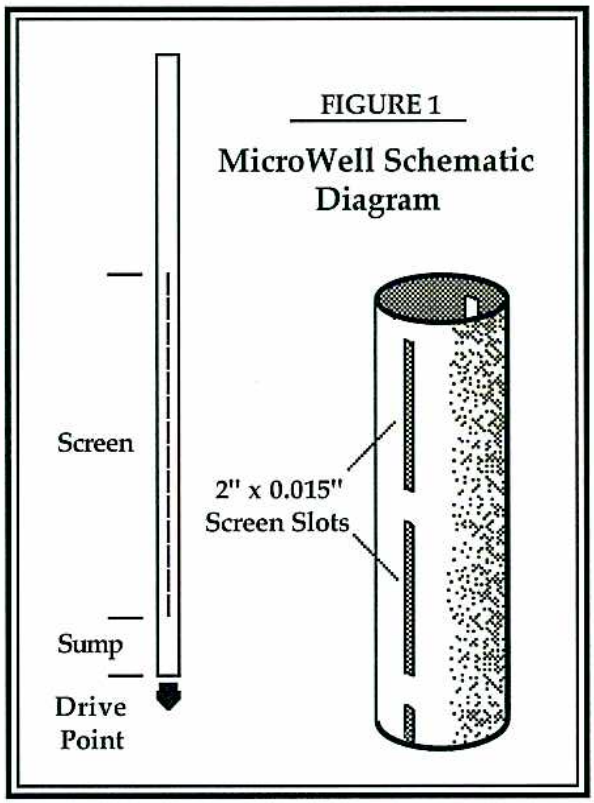
After purging, the sampling equipment was changed to the sampling mode that consists of a pair of syringe needles with tubing, one on the vacuum pump side and one on the probe side. A soil gas sample was collected in a sealed autosampler vial by inserting both needles through the septum and purging the vial with soil gas for thirty seconds. The sample was delivered immediately to the mobile laboratory. Samples were logged in by the chemist, and analyzed according to P&S's analytical SOP.

All soil gas samples were analyzed in P&S's mobile laboratory for vinyl chloride, acetone, MTBE, benzene, toluene, ethylbenzene, m+p xylenes, o-xylene, 1,1-dichloroethene, trans 1,2-dichloroethene, cis 1,2-dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane, 1,2-dichloroethane, trichloroethene and tetrachloroethene. A soil gas field log is located in the Appendix.

GROUNDWATER INVESTIGATION

MicroWell Installation Equipment and Methods

P&S's study included installation of MicroWells for groundwater sampling and water level measurements. MicroWells consist of 0.84-inch, 1.3-inch or 1.9-inch O.D. steam-cleaned steel pipe whose leading end is fitted with a drive point. Screens, manufactured from the same material, consist of a double row of longitudinal slots 0.015-inch wide on the half-inch pipe. Screens in 1.3-inch or 1.9-inch pipe consist of double rows of longitudinal slots 0.015-inch wide. In all cases, each slot is two inches long and is separated from the next slot by 1/4-inch of unslotted pipe.



MicroWells are installed by a high frequency vibratory hammer mounted on a VibraDrill® all terrain drilling machine. VibraDrills are capable of driving 12-foot sections or 21-foot sections of pipe depending upon the model; to drive deeper, additional sections of riser pipe are welded or crimped on by means of an external steel collar.

Immediately after driving is completed a water level measurement is taken with a Slope Indicator water level meter. Wells are then developed with an inertial pump to remove silt and fine sand that has entered through screen slots. Pumping continues until discharge water is free of sediment wherever possible. Samples from MicroWells for VOC analysis are obtained in lab-clean 40 mL vials with septum screw caps using new polyethylene tubing dedicated to each well and sampling interval and following P&S sampling protocols All re-usable sampling equipment is decontaminated between locations by rinsing with methanol and distilled water.

MicroWell Program

A total of three MicroWells, constructed of 1.32-inch steel pipe and with ten-foot screens, were installed inside the building by P&S's VibraDrill H641 at locations chosen by MACTEC Engineering and Consulting, Inc. field personnel. MicroWell depths were to 33.5 feet BGS. Installations were completed flush with grade inside road boxes. MicroWell completion details are noted on the table below.

MicroWell Summary

Well ID	Screened Interval	Water Level	Remarks/Finish
MW-222	23.0'-33.0'	26.32'	Road Box
MW-223	23.0'-33.0'	27.0'	Road Box
MW-224	23.0'-33.0'	26.38'	Road Box

Wells were developed but not sampled at the time of installation as decided by MACTEC Engineering and Consulting, Inc. field personnel.

ON-SITE CHEMICAL ANALYSIS

P&S utilizes Hewlett Packard 5890 gas chromatographs and a Tekmar 7000/7050 Static Headspace and Autosampler to analyze soil, water and soil gas matrices for a variety of organic environmental contaminants. Gas chromatography (GC) technology physically separates the components of a contaminated matrix and the contaminants are then identified using compound-specific detectors. P&S's GC instrumentation currently employs three different detection modes. The electron capture detector (ECD) is primarily used to identify electromagnetic molecules such as chlorinated, brominated and fluorinated compounds. The photoionization detector (PID) is effective in the determination of aromatic and/or aliphatic contaminants such as benzene, toluene, ethylbenzene and xylenes (BTEX). The flame ionization detector (FID) identifies hydrocarbon-containing molecules such as polynuclear aromatic hydrocarbons and petroleum fuel constituents. Analysis is conducted in accordance with P&S's Standard Operating Procedures (SOPs).

For water and soil headspace sample matrices which are analyzed to determine BTEX/MTBE and chlorinated contaminants, field samples undergo preparation steps prior to analysis. For water samples (collected in 40 mL VOA vials), an aliquot of the water sample is removed from the closed sampling vial and transferred to a 22 ml autosampler vial in the lab. PID/ECD detector modes are utilized for compound identification. For soil matrices, an aliquot of soil of approximately 4 to 6 grams is collected in the field and immediately transferred to a 22 mL sampling vial containing organic-free, distilled reagent water with headspace in the vial.

The following are typical autosampler analytical conditions. Auto Sampler: Tekmar 7000/7050 Static Headspace and Autosampler:

Equilibrate:	60°C for 4 min
Vortex Mix:	1.0 min
Stabilize:	2.0 min
Pressurize:	14 psi for 0.3 min
Equilibration:	0.3 min.

An appropriate analytical capillary column is selected for the suite of analytes under study. Once the sample is prepared for analysis and introduced into the GCs heated inlet injection port, it is transported in its gaseous form to the analytical column. As a sample slug migrates through this column, its various components interact with the column film to become temporarily adsorbed and subsequently desorbed. Each compound in the test sample transits the column at a different rate which is temperature controlled and enhanced, hence creating a unique retention time. Each compound also elicits a unique response from the detectors. These responses are translated within the data collection system in the form of peaks which are assigned height and area values relative to analyses of analytical standards. This data is subsequently evaluated to determine concentration of the target analyte within the sample matrix.

The following are typical GC analytical conditions. GC: Hewlett Packard 5890A. Column: Restek RTX-502.2, 30-m, 0.53-µm ID, 2.0/mm film thickness fused silica capillary column.

Carrier Gas:	Helium
Flow Rate:	10-13 ml/min
Initial Column Temperature:	40°C
Initial Column Holding Time:	2 min
Ramp Rate:	10°C/min
Final Temperature:	130°C

Final Hold Time:	1 min
Approximate GC Cool Down Time:	10 min

NOTE: The typical run time under these conditions is 20 minutes.

Identification and quantification of target analytes detected in the sample are achieved by retention time comparisons to reference standards formulated with analytical grade compounds of known concentrations. In this way, unknowns detected during sample analyses can be identified and concentrations calculated.

For all analyses, blank samples from syringes, sampling equipment and reagents are analyzed periodically to ensure sample and method integrity. Daily check standards are run to verify instrument stability, calibration, sensitivity and performance. Duplicate analyses and replicate sample injections are routinely conducted to support method accuracy and analytical precision.

Soil Gas Program

Fourteen locations chosen by MACTEC Engineering and Consulting, Inc. field personnel were sampled for soil gas at depths ranging from below the slab to twenty-one feet BGS using P&S's H641 VibraDrill. Soil gas samples were analyzed for vinyl chloride, acetone, MTBE, benzene, toluene, ethylbenzene, m+p xylenes, o-xylene, 1,1-dichloroethene, trans 1,2-dichloroethene, cis 1,2-dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane, 1,2-dichloroethane, trichloroethene and tetrachloroetheneat the direction of MACTEC Engineering and Consulting, Inc. field personnel on a Hewlett Packard 5890 GC in P&S's field laboratory. Results of soil gas analysis performed at the Former Manufacturing Facility are tabulated in the Appendix.

This report is submitted subject to the limitations stated in the Appendix.

APPENDIX

Limitations and Conditions

P&S Standard Abbreviations

Soil Gas Field Log

Analytical Results

LIMITATIONS AND CONDITIONS

1. The observations described in this report were made under the conditions stated. The conclusions presented in the report were based solely upon the services described and not on scientific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by Client. The report has been prepared in accordance with generally accepted hydrogeological and hydrochemical practices. No other warranty, express or implied, is made.

2. Negative findings for the presence of volatile organic compounds using soil atmosphere analysis are not positive or absolute proof that disposal or discharge of chemicals has not occurred in the past at the sampled locations or anywhere else on the site. Negative findings are not positive or absolute proof that migration, seepage or any other movement of chemicals is not occurring at the sampled locations or elsewhere on the site.

3. Chemical conditions reported herein reflect conditions at the locations tested within the limitations of the methods used. Such conditions can vary rapidly from area to area. No warranty is expressed or implied that chemical conditions other than those reported do not exist within the site.

4. At those locations where volatile organic compounds were reported, chemicals other than those reported may be present. Chemical analyses have been performed for specific parameters during this assessment. However, additional chemical constituents not searched for during the current study may be present in soil and/or groundwater at the site.

5. Water level readings have been made in the wells at the times and under the conditions stated on the MicroWell logs. However, fluctuations in the level of groundwater may occur due to variation in rainfall and other factors different from those prevailing at the time measurements were made.

6. This report has been prepared for MACTEC Engineering and Consulting, Inc. solely for use in an environmental evaluation of property at Former Manufacturing Facility, Providence RI.

P&S STANDARD ABBREVIATIONS

Abbreviations which may have been used in this report and in the MicroWell logs.

mg/Kg	milligrams per kilogram
mg/L	milligrams per liter
ppb	parts per billion
ppm	parts per million
µg/g	micrograms per gram
µg/Kg	micrograms per kilogram
µg/L	micrograms per liter
"	inches (in)
'	feet (ft)
cm	centimeters
m	meters
mL	milliliters
yd	yards
BGS	below ground surface
D-NAPL	dense non-aqueous phase liquid
GC	gas chromatograph
L-NAPL	light non-aqueous phase liquid
OVM	organic vapor meter
Pipe ID	internal diameter of pipe
Pipe OD	external diameter of pipe
Sample ID	sample identification number
TOC	top of casing
Well ID	well identification number
WL	water level

Soil Gas Field Log

SOIL GAS FIELD LOG

Project: Providence RI			Date: 11/12/07 – 11/14/07	
Project #: 07246			Weather: Inside Building	
Client Name: MACTEC			Field Personnel: Mike C/Greg	
Sample ID	**Location**	**Sampling Method**	**Sampling Depth**	**Comments**
SG-13A	SG-13	tubing through slab	Below slab	11-12-07
SG-13B		Soil Gas Well	11.5'-12.0'	
SG-13C		Soil Gas Well	20.5-21.0'	
SG-10A	SG-10	tubing through slab	Below slab	
SG-10B		Soil Gas Well	11.5'-12.0'	
SG-10C		Soil Gas Well	20.5-21.0'	
SG-1A	SG-1	tubing through slab	Below slab	11-13-07
SG-1B		Soil Gas Well	11.5'-12.0'	
SG-1C		Soil Gas Well	20.5-21.0'	
SG-2A	SG-2	tubing through slab	Below slab	
SG-2B		Soil Gas Well	11.5'-12.0'	
SG-2C		Soil Gas Well	20.5-21.0'	
SG-3A	SG-3	tubing through slab	Below slab	
SG-3B		Soil Gas Well	11.5'-12.0'	
SG-3C		Soil Gas Well	20.5-21.0'	
SG-12A	SG-12	tubing through slab	Below slab	
SG-12B		Soil Gas Well	11.5'-12.0'	
SG-12C		Soil Gas Well	20.5-21.0'	
SG-11A	SG-11	tubing through slab	Below slab	11-14-07
SG-11B		Soil Gas Well	11.5'-12.0'	
SG-11C		Soil Gas Well	20.5-21.0'	
SG-5A	SG-5	tubing through slab	Below slab	
SG-5B		Soil Gas Well	11.5'-12.0'	
SG-5C		Soil Gas Well	20.5-21.0'	

SOIL GAS FIELD LOG

Project: Providence RI			Date: 11/12/07 – 11/14/07	
Project #: 07246			Weather: Inside Building	
Client Name: MACTEC			Field Personnel: Mike C/Greg	
Sample ID	**Location**	**Sampling Method**	**Sampling Depth**	**Comments**
SG-4A	SG-4	tubing through slab	Below slab	11-14-07
SG-4B		Soil Gas Well	11.5'-12.0'	
SG-4C		Soil Gas Well	20.5-21.0'	
SG-6A	SG-6	tubing through slab	Below slab	
SG-6B		Soil Gas Well	11.5'-12.0'	
SG-6C		Soil Gas Well	20.5-21.0'	
SG-14A	SG-14	tubing through slab	Below slab	11-15-07
SG-14B		Soil Gas Well	11.5'-12.0'	
SG-14C		Soil Gas Well	20.5-21.0'	
SG-15A	SG-15	tubing through slab	Below slab	
SG-15A2		Soil Gas Well	4.5'-5.0'	
SG-15B		Soil Gas Well	11.5'-12.0'	
SG-15C		Soil Gas Well	20.5-21.0'	
SG-16A	SG-16	tubing through slab	Below slab	
SG-16A2		Soil Gas Well	4.5'-5.0'	
SG-16B		Soil Gas Well	11.5'-12.0'	
SG-16C		Soil Gas Well	20.5-21.0'	
SG-17A	SG-17	tubing through slab	Below slab	
SG-17A2		Soil Gas Well	4.5'-5.0'	
SG-17B		Soil Gas Well	11.5'-12.0'	
SG-17C		Soil Gas Well	20.5-21.0'	

Analytical Results

Mobile Laboratory Services
SoilGas Analysis
Stop and Shop
Providence, RI
PPBV

Sample ID	Vinyl Chloride	Acetone	Mtbe	Benzene	Toluene	Ethylbenzene	m+p-Xylenes	o- Xylene	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	1,1-Dichloroethane	1,1,1-Trichloroethane	1,2- Dichloroethane	Trichloroethene	Tetrachloroethene
EB	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SG13A	BDL	13	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	OFF	BDL	40	5.9J
SG13A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	760D	NA	NA	NA
SG13B	5.4	450	2.2J	71	34	6.7J	17J	12	BDL	BDL	BDL	BDL	OFF	BDL	33	6.4J
SG13B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	850D	NA	NA	NA
SG13C	35	97	9J	350	120	14	23	26	BDL	BDL	140	BDL	OFF	BDL	62	8.4
SG13C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	840D	NA	NA	NA
SG10A	BDL	130	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	OFF	BDL	3.4J	2.8J
SG10A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	160D	NA	NA	NA
SG10B	3.2	960	13	190	126	53	61	300	BDL	BDL	67	BDL	OFF	BDL	OFF	3.3
SG10B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	J	NA	NA	NA
SG10B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	920D	NA	J	NA
SG10B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	920D	NA	112	NA
SG10C	2.0J	980	15	740	970	780	590	1700	BDL	BDL	200	BDL	OFF	BDL	OFF	4.2
SG10C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10,200D	NA	250	NA
11/13/2007																
SG1A	BDL	115	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	OFF	BDL	58	8.4
SG1A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	660D	NA	NA	NA
SG1B	BDL	950	5J	1000	93	8.6J	19J	BDL	BDL	BDL	BDL	BDL	150	BDL	12	BDL
SG1C	0.5J	520	4.4J	BDL	3.5J	BDL	4.2J	6.3J	BDL	BDL	320	OFF	OFF	BDL	OFF	2.6J
SG1C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5500D	1800D	NA	184D	NA
SG2A	5.3	7500	39	BDL	BDL	BDL	BDL	BDL	BDL	240	OFF	OFF	OFF	BDL	OFF	10
SG2A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12000D	38000D	79000D	NA	2600D	NA
SG2B	7.8	9600	92	BDL	BDL	BDL	BDL	412	BDL	330	OFF	OFF	OFF	BDL	OFF	170
SG2B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	49000D	60000D	560000D	NA	20000D	NA
SG2C	7.9	9400	83	BDL	BDL	BDL	BDL	86	BDL	BDL	OFF	OFF	OFF	BDL	OFF	370
SG2C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	42000D	56000D	590000D	NA	29000D	NA
SG3A	5.7	1200	19	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1800	OFF	OFF	BDL	OFF	7.0

1
OFF= over detection limit off scale
J= Present but elow detection limit
NA= Not analyzed

Mobile Laboratory Services
SoilGas Analysis
Stop and Shop
Providence, RI
PPBV

Sample ID	Vinyl Chloride	Acetone	Mtbe	Benzene	Toluene	Ethylbenzene	m+p-Xylenes	o- Xylene	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	1,1-Dichloroethane	1,1,1-Trichloroethane	1,2- Dichloroethane	Trichloroethene	Tetrachloroethene
Detection Llimits	11	12	10	9.8	10	10	20	10	10	60	60	60	10	60	8.6	7
SG3A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19000D	61000D	NA	1300D	NA
SG3B	14	2300	56	BDL	29	15	22	26	BDL	BDL	OFF	OFF	OFF	BDL	OFF	33
SG3B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21000D	3100D	110000D	NA	1500D	NA
SG3C	7.4	1300	35	BDL	140	99	110	290	BDL	BDL	OFF	OFF	OFF	BDL	OFF	110
SG3C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	24000D	25000D	510000D	NA	29000D	NA
SG12A	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	57	1100	OFF	BDL	400	BDL
SG12A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	68000D	NA	NA	NA
SG12B	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	51J	BDL	230	BDL	21	BDL
SG12C	2.8J	3000	BDL	BDL	160	39	81	97	BDL	BDL	160	1800	OFF	BDL	OFF	BDL
SG12C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1700D	NA
SG12C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8800D	NA	NA	NA
11/14/2007																
SG11A	BDL	250	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	500	OFF	BDL	210	BDL
SG11A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35000D	NA	NA	NA
SG11B	1.7J	1400	8	BDL	33	12	23	71	BDL	BDL	130	2600	OFF	BDL	OFF	11
SG11B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	130000D	NA	3400D	NA
SG11C	BDL	1500	6.9	BDL	46	30	37	89	BDL	BDL	120	3000	OFF	BDL	OFF	31
SG11C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	165000D	NA	5800D	NA
SG5A	BDL	1600	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2900	OFF	BDL	320	BDL
SG5A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14000D	NA	NA	NA
SG5B	BDL	8400	BDL	BDL	91	21	62	69	BDL	BDL	3100	OFF	OFF	BDL	OFF	64
SG5B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	38000D	1240000D	NA	230000D	NA
SG5C	BDL	OFF	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	OFF	OFF	OFF	BDL	OFF	1200
SG5C	NA	23000D	NA	NA	NA	NA	NA	NA	NA	NA	27000D	1000000D	1600000D	NA	440000D	NA
SG5C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SG4A	BDL	5200	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	150	9800	OFF	BDL	OFF	33
SG4A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	150000D	NA	11000D	NA

2
OFF= over detection limit off scale
J= Present but elow detection limit
NA= Not analyzed

Mobile Laboratory Services
SoilGas Analysis
Stop and Shop
Providence, RI
PPBV

Sample ID	Vinyl Chloride	Acetone	Mtbe	Benzene	Toluene	Ethylbenzene	m+p-Xylenes	o- Xylene	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	1,1-Dichloroethane	1,1,1-Trichloroethane	1,2- Dichloroethane	Trichloroethene	Tetrachloroethene
SG4B	BDL	22000	BDL	BDL	BDL	9.6J	20	60	BDL	BDL	OFF	OFF	OFF	BDL	OFF	OFF
Detection Limits	11	12	10	9.8	10	10	20	10	10	60	60	60	10	60	8.6	7
SG4B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22000D	100000D	1400000D	NA	540000D	NA
SG4B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1600D
SG4C	57	22000	59	BDL	440	29	57	71	860	BDL	2700	OFF	OFF	OFF	OFF	1100
SG4C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16000D	860000D	BDL	290000D	1500D
SG6A	BDL	86	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	52J	850	OFF	BDL	320	BDL
SG6A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14000D	NA	250D	NA
SG6B	0.3J	1000	19	BDL	58	88	120	600	BDL	BDL	160	3800	OFF	BDL	OFF	610
SG6B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	210000D	NA	31000D	600D
SG6C	0.4J	1400	BDL	BDL	20	21	26	190	BDL	BDL	170	6500	OFF	BDL	OFF	870
SG6C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	260000D	BDL	39000D	950D
SG14AS	0.4J	210	BDL	BDL	4.5J	BDL	BDL	BDL	BDL	BDL	BDL	660	OFF	BDL	260	0.6J
SG14AS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14000D	NA	250D	NA
SG14A	0.5J	330	BDL	BDL	6.7J	BDL	3.2J	BDL	BDL	BDL	52J	890	OFF	BDL	490	1.2J
SG14A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20000D	NA	550D	NA
11/15/2007																
SG14B	3.9J	11000	36	BDL	BDL	5.7J	16	24	300	BDL	3800	OFF	OFF	BDL	OFF	730
SG14B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19000D	600000D	NA	170000D	NA
SG14C	3.3J	10000	31	BDL	24	5.8J	9.3J	BDL	250	BDL	3300	OFF	OFF	BDL	OFF	700
SG14C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	36000D	820000D	NA	220000D	740D
SG15A	1.5J	6800	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	120	OFF	OFF	BDL	OFF	7.5
SG15A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9800	210000D	NA	9100D	NA
SG15A2	BDL	110	BDL	BDL	2.5J	BDL	BDL	BDL	15	BDL	BDL	270	OFF	BDL	97	0.1J
SG15A2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3000	NA	NA	NA
SG15B	6.6J	14000	44	BDL	4.7J	BDL	BDL	BDL	850	BDL	OFF	OFF	OFF	BDL	OFF	930
SG15B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23000D	22000D	930000D	NA	230000D	1000D
SG15C	11	15000	54	BDL	130	90	98	93	980	BDL	OFF	OFF	OFF	BDL	OFF	980

3
OFF= over detection limit off scale
J= Present but elow detection limit
NA= Not analyzed

Mobile Laboratory Services
SoilGas Analysis
Stop and Shop
Providence, RI
PPBV

Sample ID	Vinyl Chloride	Acetone	Mtbe	Benzene	Toluene	Ethylbenzene	m+p-Xylenes	o- Xylene	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	1,1-Dichloroethane	1,1,1-Trichloroethane	1,2- Dichloroethane	Trichloroethene	Tetrachloroethene
SG15C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23000D	24000D	900000D	NA	210000D	1000D
SG16A	13	4000	BDL	BDL	BDL	BDL	BDL	BDL	7950	300	OFF	OFF	OFF	BDL	OFF	100
Detection Limits	11	12	10	9.8	10	10	20	10	10	60	60	60	10	60	8.6	7
SG16A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22000D	1100D	160000D	NA	40000D	NA
SG16A2	12	6100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	88	7480	OFF	OFF	BDL	OFF	380
SG16A2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21000D	16000D	410000D	NA	190000D	NA
SG16B	8.4J	24000	BDL	BDL	24	12	21	67	1400	180	OFF	OFF	OFF	BDL	OFF	OFF
SG16B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30000D	100000D	1100000D	BDL	440000D	3000D
SG16C	8.1J	22000	BDL	BDL	200	2.8J	6.0J	12	1200	180	OFF	OFF	OFF	BDL	OFF	OFF
SG16C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30000D	120000D	1400000D	NA	52000D	3500D
SG17A	BDL	820	BDL	BDL	5.5J	54	250	64	BDL	BDL	140	OFF	OFF	BDL	OFF	11
SG17A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7200D	120000D	NA	11000D	NA
SG17A2	BDL	1200	BDL	BDL	BDL	16	68	20	BDL	BDL	300	OFF	OFF	BDL	OFF	59
SG17A2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7800D	170000D	NA	23000D	NA
SG17B	1.7J	3700	BDL	BDL	6.8J	22	94	31	51	53J	3500	OFF	OFF	BDL	OFF	390
SG17B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28000D	320000D	NA	28000D	NA
SG17C	2.2J	4400	BDL	BDL	4.0J	5.2J	21	12	120	56J	6000	OFF	OFF	BDL	OFF	600
SG17C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9700D	390000D	NA	97000D	NA
Detection Limits	11	12	10	9.8	10	10	20	10	10	60	60	60	10	60	8.6	7

4
OFF= over detection limit off scale
J= Present but elow detection limit
NA= Not analyzed

Appendix B
ESS Laboratory Report for Groundwater Samples

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

PROJECT NARRATIVE

David Heislein
MACTEC Engineering & Consulting, Inc.
107 Audubon Road
Wakefield, MA 01880

RE: Providence Gorham Site
ESS Laboratory Work Order Number: 0711288

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

Laurel Stoddard
Laboratory Director

Date: November 28, 2007

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

ESS Laboratory certifies that the test results meet the requirements of NELAC, except where noted within this project narrative.

Sample Receipt
The following sample(s) were received on November 19, 2007 for the analyses specified on the enclosed Chain of Custody Record.

Laboratory ID	Matrix	Client SampleID
0711288-01	Ground Water	MW-222S
0711288-02	Ground Water	MW-223S
0711288-03	Ground Water	MW-224S
0711288-04	Ground Water	MW-224S-Dup

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0711288

PROJECT NARRATIVE

8260B Volatile Organic Compounds

0711288-01	**pH > 2**
BK72007-BSD1	**Blank Spike recovery is below lower control limit.** Vinyl Acetate
BK72007-BSD1	**Relative percent difference for duplicate is outside of criteria.** 1,2-Dibromo-3-Chloropropane
BK72111-BS1	**Blank Spike recovery is above upper control limit.** Acetone
BK72111-BSD1	**Relative percent difference for duplicate is outside of criteria.** Acetone
BQK0189-CCV1	**Continuing Calibration recovery is above upper control limit.** 1,4-Dioxane - Screen

No other observations noted.

End of Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: MW-222S
Date Sampled: 11/19/07 10:44
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0711288
ESS Laboratory Sample ID: 0711288-01
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results	Units	MRL	RI - GA Limit	DF	Analyzed
1,1,1,2-Tetrachloroethane	ND	mg/L	0.0010		1	11/20/07
1,1,1-Trichloroethane	**7.42**	mg/L	0.100	0.2	100	11/26/07
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0005		1	11/20/07
1,1,2-Trichloroethane	**0.0043**	mg/L	0.0010	0.005	1	11/20/07
1,1-Dichloroethane	**5.79**	mg/L	0.100		100	11/26/07
1,1-Dichloroethene	**0.287**	mg/L	0.100	0.007	100	11/26/07
1,1-Dichloropropene	ND	mg/L	0.0020		1	11/20/07
1,2,3-Trichlorobenzene	ND	mg/L	0.0010		1	11/20/07
1,2,3-Trichloropropane	ND	mg/L	0.0010		1	11/20/07
1,2,4-Trichlorobenzene	ND	mg/L	0.0010	0.07	1	11/20/07
1,2,4-Trimethylbenzene	ND	mg/L	0.0010		1	11/20/07
1,2-Dibromo-3-Chloropropane	ND	mg/L	0.0050	0.0002	1	11/20/07
1,2-Dibromoethane	ND	mg/L	0.0010	0.00005	1	11/20/07
1,2-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	11/20/07
1,2-Dichloroethane	ND	mg/L	0.0010	0.005	1	11/20/07
1,2-Dichloropropane	ND	mg/L	0.0010	0.005	1	11/20/07
1,3,5-Trimethylbenzene	ND	mg/L	0.0010		1	11/20/07
1,3-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	11/20/07
1,3-Dichloropropane	ND	mg/L	0.0010		1	11/20/07
1,4-Dichlorobenzene	ND	mg/L	0.0010	0.075	1	11/20/07
1,4-Dioxane - Screen	ND	mg/L	0.500		1	11/20/07
1-Chlorohexane	ND	mg/L	0.0010		1	11/20/07
2,2-Dichloropropane	ND	mg/L	0.0010		1	11/20/07
2-Butanone	**0.0631**	mg/L	0.0250		1	11/20/07
2-Chlorotoluene	ND	mg/L	0.0010		1	11/20/07
2-Hexanone	ND	mg/L	0.0100		1	11/20/07
4-Chlorotoluene	ND	mg/L	0.0010		1	11/20/07
4-Isopropyltoluene	ND	mg/L	0.0010		1	11/20/07
4-Methyl-2-Pentanone	ND	mg/L	0.0250		1	11/20/07
Acetone	**0.364**	mg/L	0.0250		1	11/20/07
Benzene	ND	mg/L	0.0010	0.005	1	11/20/07
Bromobenzene	ND	mg/L	0.0020		1	11/20/07
Bromochloromethane	ND	mg/L	0.0010		1	11/20/07
Bromodichloromethane	ND	mg/L	0.0010		1	11/20/07
Bromoform	ND	mg/L	0.0010		1	11/20/07

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: MW-222S
Date Sampled: 11/19/07 10:44
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0711288
ESS Laboratory Sample ID: 0711288-01
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Bromomethane	ND	mg/L	0.0020		1	11/20/07
Carbon Disulfide	ND	mg/L	0.0010		1	11/20/07
Carbon Tetrachloride	ND	mg/L	0.0010	0.005	1	11/20/07
Chlorobenzene	ND	mg/L	0.0010	0.1	1	11/20/07
Chloroethane	**0.0286**	mg/L	0.0020		1	11/20/07
Chloroform	**0.0010**	mg/L	0.0010		1	11/20/07
Chloromethane	ND	mg/L	0.0020		1	11/20/07
cis-1,2-Dichloroethene	**0.404**	mg/L	0.100	0.07	100	11/26/07
cis-1,3-Dichloropropene	ND	mg/L	0.0005		1	11/20/07
Dibromochloromethane	ND	mg/L	0.0010		1	11/20/07
Dibromomethane	ND	mg/L	0.0010		1	11/20/07
Dichlorodifluoromethane	ND	mg/L	0.0020		1	11/20/07
Diethyl Ether	ND	mg/L	0.0010		1	11/20/07
Di-isopropyl ether	ND	mg/L	0.0010		1	11/20/07
Ethyl tertiary-butyl ether	ND	mg/L	0.0010		1	11/20/07
Ethylbenzene	ND	mg/L	0.0010	0.7	1	11/20/07
Hexachlorobutadiene	ND	mg/L	0.0006		1	11/20/07
Isopropylbenzene	ND	mg/L	0.0010		1	11/20/07
Methyl tert-Butyl Ether	ND	mg/L	0.0010	0.04	1	11/20/07
Methylene Chloride	ND	mg/L	0.0050	0.005	1	11/20/07
Naphthalene	**0.0076**	mg/L	0.0010	0.02	1	11/20/07
n-Butylbenzene	ND	mg/L	0.0010		1	11/20/07
n-Propylbenzene	ND	mg/L	0.0010		1	11/20/07
sec-Butylbenzene	ND	mg/L	0.0010		1	11/20/07
Styrene	ND	mg/L	0.0010	0.1	1	11/20/07
tert-Butylbenzene	ND	mg/L	0.0010		1	11/20/07
Tertiary-amyl methyl ether	ND	mg/L	0.0010		1	11/20/07
Tetrachloroethene	**0.0128**	mg/L	0.0010	0.005	1	11/20/07
Tetrahydrofuran	ND	mg/L	0.0050		1	11/20/07
Toluene	**0.0027**	mg/L	0.0010	1	1	11/20/07
trans-1,2-Dichloroethene	**0.0043**	mg/L	0.0010	0.1	1	11/20/07
trans-1,3-Dichloropropene	ND	mg/L	0.0005		1	11/20/07
Trichloroethene	**7.09**	mg/L	0.100	0.005	100	11/26/07
Trichlorofluoromethane	**0.0106**	mg/L	0.0020		1	11/20/07
Vinyl Acetate	ND	mg/L	0.0050		1	11/20/07
Vinyl Chloride	**0.0116**	mg/L	0.0010	0.002	1	11/20/07

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: MW-222S
Date Sampled: 11/19/07 10:44
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0711288
ESS Laboratory Sample ID: 0711288-01
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Xylene O	**0.0012**	mg/L	0.0010	10	1	11/20/07
Xylene P,M	**0.0026**	mg/L	0.0020	10	1	11/20/07
Xylenes (Total)	**0.0038**	mg/L	0.0030	10	1	11/20/07
Trihalomethanes (Total)	ND	mg/L	0.0040	0.1		11/20/07

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*99 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*101 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: MW-223S
Date Sampled: 11/19/07 11:20
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0711288
ESS Laboratory Sample ID: 0711288-02
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results	Units	MRL	RI - GA Limit	DF	Analyzed
1,1,1,2-Tetrachloroethane	ND	mg/L	0.0010		1	11/21/07
1,1,1-Trichloroethane	**0.0656**	mg/L	0.0010	0.2	1	11/21/07
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0005		1	11/21/07
1,1,2-Trichloroethane	ND	mg/L	0.0010	0.005	1	11/21/07
1,1-Dichloroethane	**0.0023**	mg/L	0.0010		1	11/21/07
1,1-Dichloroethene	**0.0011**	mg/L	0.0010	0.007	1	11/21/07
1,1-Dichloropropene	ND	mg/L	0.0020		1	11/21/07
1,2,3-Trichlorobenzene	ND	mg/L	0.0010		1	11/21/07
1,2,3-Trichloropropane	ND	mg/L	0.0010		1	11/21/07
1,2,4-Trichlorobenzene	ND	mg/L	0.0010	0.07	1	11/21/07
1,2,4-Trimethylbenzene	ND	mg/L	0.0010		1	11/21/07
1,2-Dibromo-3-Chloropropane	ND	mg/L	0.0050	0.0002	1	11/21/07
1,2-Dibromoethane	ND	mg/L	0.0010	0.00005	1	11/21/07
1,2-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	11/21/07
1,2-Dichloroethane	ND	mg/L	0.0010	0.005	1	11/21/07
1,2-Dichloropropane	ND	mg/L	0.0010	0.005	1	11/21/07
1,3,5-Trimethylbenzene	ND	mg/L	0.0010		1	11/21/07
1,3-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	11/21/07
1,3-Dichloropropane	ND	mg/L	0.0010		1	11/21/07
1,4-Dichlorobenzene	ND	mg/L	0.0010	0.075	1	11/21/07
1,4-Dioxane - Screen	ND	mg/L	0.500		1	11/21/07
1-Chlorohexane	ND	mg/L	0.0010		1	11/21/07
2,2-Dichloropropane	ND	mg/L	0.0010		1	11/21/07
2-Butanone	ND	mg/L	0.0250		1	11/21/07
2-Chlorotoluene	ND	mg/L	0.0010		1	11/21/07
2-Hexanone	ND	mg/L	0.0100		1	11/21/07
4-Chlorotoluene	ND	mg/L	0.0010		1	11/21/07
4-Isopropyltoluene	ND	mg/L	0.0010		1	11/21/07
4-Methyl-2-Pentanone	ND	mg/L	0.0250		1	11/21/07
Acetone	ND	mg/L	0.0250		1	11/21/07
Benzene	ND	mg/L	0.0010	0.005	1	11/21/07
Bromobenzene	ND	mg/L	0.0020		1	11/21/07
Bromochloromethane	ND	mg/L	0.0010		1	11/21/07
Bromodichloromethane	ND	mg/L	0.0010		1	11/21/07
Bromoform	ND	mg/L	0.0010		1	11/21/07

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: MW-223S
Date Sampled: 11/19/07 11:20
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0711288
ESS Laboratory Sample ID: 0711288-02
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Bromomethane	ND	mg/L	0.0020		1	11/21/07
Carbon Disulfide	ND	mg/L	0.0010		1	11/21/07
Carbon Tetrachloride	ND	mg/L	0.0010	0.005	1	11/21/07
Chlorobenzene	ND	mg/L	0.0010	0.1	1	11/21/07
Chloroethane	ND	mg/L	0.0020		1	11/21/07
Chloroform	ND	mg/L	0.0010		1	11/21/07
Chloromethane	ND	mg/L	0.0020		1	11/21/07
cis-1,2-Dichloroethene	ND	mg/L	0.0010	0.07	1	11/21/07
cis-1,3-Dichloropropene	ND	mg/L	0.0005		1	11/21/07
Dibromochloromethane	ND	mg/L	0.0010		1	11/21/07
Dibromomethane	ND	mg/L	0.0010		1	11/21/07
Dichlorodifluoromethane	ND	mg/L	0.0020		1	11/21/07
Diethyl Ether	ND	mg/L	0.0010		1	11/21/07
Di-isopropyl ether	ND	mg/L	0.0010		1	11/21/07
Ethyl tertiary-butyl ether	ND	mg/L	0.0010		1	11/21/07
Ethylbenzene	ND	mg/L	0.0010	0.7	1	11/21/07
Hexachlorobutadiene	ND	mg/L	0.0006		1	11/21/07
Isopropylbenzene	ND	mg/L	0.0010		1	11/21/07
Methyl tert-Butyl Ether	ND	mg/L	0.0010	0.04	1	11/21/07
Methylene Chloride	ND	mg/L	0.0050	0.005	1	11/21/07
Naphthalene	ND	mg/L	0.0010	0.02	1	11/21/07
n-Butylbenzene	ND	mg/L	0.0010		1	11/21/07
n-Propylbenzene	ND	mg/L	0.0010		1	11/21/07
sec-Butylbenzene	ND	mg/L	0.0010		1	11/21/07
Styrene	ND	mg/L	0.0010	0.1	1	11/21/07
tert-Butylbenzene	ND	mg/L	0.0010		1	11/21/07
Tertiary-amyl methyl ether	ND	mg/L	0.0010		1	11/21/07
Tetrachloroethene	ND	mg/L	0.0010	0.005	1	11/21/07
Tetrahydrofuran	ND	mg/L	0.0050		1	11/21/07
Toluene	ND	mg/L	0.0010	1	1	11/21/07
trans-1,2-Dichloroethene	ND	mg/L	0.0010	0.1	1	11/21/07
trans-1,3-Dichloropropene	ND	mg/L	0.0005		1	11/21/07
Trichloroethene	**0.0077**	mg/L	0.0010	0.005	1	11/21/07
Trichlorofluoromethane	ND	mg/L	0.0020		1	11/21/07
Vinyl Acetate	ND	mg/L	0.0050		1	11/21/07
Vinyl Chloride	ND	mg/L	0.0010	0.002	1	11/21/07

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: MW-223S
Date Sampled: 11/19/07 11:20
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0711288
ESS Laboratory Sample ID: 0711288-02
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Xylene O	ND	mg/L	0.0010	10	1	11/21/07
Xylene P,M	ND	mg/L	0.0020	10	1	11/21/07
Xylenes (Total)	ND	mg/L	0.0030	10	1	11/21/07
Trihalomethanes (Total)	ND	mg/L	0.0040	0.1		11/21/07

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*100 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*102 %*		*70-130*
Surrogate: Toluene-d8	*100 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: MW-224S
Date Sampled: 11/19/07 11:50
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0711288
ESS Laboratory Sample ID: 0711288-03
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results	Units	MRL	RI - GA Limit	DF	Analyzed
1,1,1,2-Tetrachloroethane	ND	mg/L	0.0010		1	11/20/07
1,1,1-Trichloroethane	**1.75**	mg/L	0.0500	0.2	50	11/21/07
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0005		1	11/20/07
1,1,2-Trichloroethane	ND	mg/L	0.0010	0.005	1	11/20/07
1,1-Dichloroethane	**0.190**	mg/L	0.0500		50	11/21/07
1,1-Dichloroethene	**0.0525**	mg/L	0.0010	0.007	1	11/20/07
1,1-Dichloropropene	ND	mg/L	0.0020		1	11/20/07
1,2,3-Trichlorobenzene	ND	mg/L	0.0010		1	11/20/07
1,2,3-Trichloropropane	ND	mg/L	0.0010		1	11/20/07
1,2,4-Trichlorobenzene	ND	mg/L	0.0010	0.07	1	11/20/07
1,2,4-Trimethylbenzene	ND	mg/L	0.0010		1	11/20/07
1,2-Dibromo-3-Chloropropane	ND	mg/L	0.0050	0.0002	1	11/20/07
1,2-Dibromoethane	ND	mg/L	0.0010	0.00005	1	11/20/07
1,2-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	11/20/07
1,2-Dichloroethane	ND	mg/L	0.0010	0.005	1	11/20/07
1,2-Dichloropropane	ND	mg/L	0.0010	0.005	1	11/20/07
1,3,5-Trimethylbenzene	ND	mg/L	0.0010		1	11/20/07
1,3-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	11/20/07
1,3-Dichloropropane	ND	mg/L	0.0010		1	11/20/07
1,4-Dichlorobenzene	ND	mg/L	0.0010	0.075	1	11/20/07
1,4-Dioxane - Screen	ND	mg/L	0.500		1	11/20/07
1-Chlorohexane	ND	mg/L	0.0010		1	11/20/07
2,2-Dichloropropane	ND	mg/L	0.0010		1	11/20/07
2-Butanone	ND	mg/L	0.0250		1	11/20/07
2-Chlorotoluene	ND	mg/L	0.0010		1	11/20/07
2-Hexanone	ND	mg/L	0.0100		1	11/20/07
4-Chlorotoluene	ND	mg/L	0.0010		1	11/20/07
4-Isopropyltoluene	ND	mg/L	0.0010		1	11/20/07
4-Methyl-2-Pentanone	ND	mg/L	0.0250		1	11/20/07
Acetone	ND	mg/L	0.0250		1	11/20/07
Benzene	ND	mg/L	0.0010	0.005	1	11/20/07
Bromobenzene	ND	mg/L	0.0020		1	11/20/07
Bromochloromethane	ND	mg/L	0.0010		1	11/20/07
Bromodichloromethane	ND	mg/L	0.0010		1	11/20/07
Bromoform	ND	mg/L	0.0010		1	11/20/07

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: MW-224S
Date Sampled: 11/19/07 11:50
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0711288
ESS Laboratory Sample ID: 0711288-03
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Bromomethane	ND	mg/L	0.0020		1	11/20/07
Carbon Disulfide	ND	mg/L	0.0010		1	11/20/07
Carbon Tetrachloride	ND	mg/L	0.0010	0.005	1	11/20/07
Chlorobenzene	ND	mg/L	0.0010	0.1	1	11/20/07
Chloroethane	**0.0048**	mg/L	0.0020		1	11/20/07
Chloroform	ND	mg/L	0.0010		1	11/20/07
Chloromethane	ND	mg/L	0.0020		1	11/20/07
cis-1,2-Dichloroethene	**0.0925**	mg/L	0.0500	0.07	50	11/21/07
cis-1,3-Dichloropropene	ND	mg/L	0.0005		1	11/20/07
Dibromochloromethane	ND	mg/L	0.0010		1	11/20/07
Dibromomethane	ND	mg/L	0.0010		1	11/20/07
Dichlorodifluoromethane	ND	mg/L	0.0020		1	11/20/07
Diethyl Ether	ND	mg/L	0.0010		1	11/20/07
Di-isopropyl ether	ND	mg/L	0.0010		1	11/20/07
Ethyl tertiary-butyl ether	ND	mg/L	0.0010		1	11/20/07
Ethylbenzene	ND	mg/L	0.0010	0.7	1	11/20/07
Hexachlorobutadiene	ND	mg/L	0.0006		1	11/20/07
Isopropylbenzene	ND	mg/L	0.0010		1	11/20/07
Methyl tert-Butyl Ether	ND	mg/L	0.0010	0.04	1	11/20/07
Methylene Chloride	ND	mg/L	0.0050	0.005	1	11/20/07
Naphthalene	**0.0016**	mg/L	0.0010	0.02	1	11/20/07
n-Butylbenzene	ND	mg/L	0.0010		1	11/20/07
n-Propylbenzene	ND	mg/L	0.0010		1	11/20/07
sec-Butylbenzene	ND	mg/L	0.0010		1	11/20/07
Styrene	ND	mg/L	0.0010	0.1	1	11/20/07
tert-Butylbenzene	ND	mg/L	0.0010		1	11/20/07
Tertiary-amyl methyl ether	ND	mg/L	0.0010		1	11/20/07
Tetrachloroethene	**0.0021**	mg/L	0.0010	0.005	1	11/20/07
Tetrahydrofuran	ND	mg/L	0.0050		1	11/20/07
Toluene	**0.0017**	mg/L	0.0010	1	1	11/20/07
trans-1,2-Dichloroethene	ND	mg/L	0.0010	0.1	1	11/20/07
trans-1,3-Dichloropropene	ND	mg/L	0.0005		1	11/20/07
Trichloroethene	**0.883**	mg/L	0.0500	0.005	50	11/21/07
Trichlorofluoromethane	**0.0039**	mg/L	0.0020		1	11/20/07
Vinyl Acetate	ND	mg/L	0.0050		1	11/20/07
Vinyl Chloride	ND	mg/L	0.0010	0.002	1	11/20/07

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: MW-224S
Date Sampled: 11/19/07 11:50
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0711288
ESS Laboratory Sample ID: 0711288-03
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Xylene O	ND	mg/L	0.0010	10	1	11/20/07
Xylene P,M	ND	mg/L	0.0020	10	1	11/20/07
Xylenes (Total)	ND	mg/L	0.0030	10	1	11/20/07
Trihalomethanes (Total)	ND	mg/L	0.0040	0.1		11/20/07

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*96 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*99 %*		*70-130*
Surrogate: Dibromofluoromethane	*102 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: MW-224S-Dup
Date Sampled: 11/19/07 11:50
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0711288
ESS Laboratory Sample ID: 0711288-04
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results	Units	MRL	RI - GA Limit	DF	Analyzed
1,1,1,2-Tetrachloroethane	ND	mg/L	0.0010		1	11/20/07
1,1,1-Trichloroethane	**1.96**	mg/L	0.0500	0.2	50	11/21/07
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0005		1	11/20/07
1,1,2-Trichloroethane	ND	mg/L	0.0010	0.005	1	11/20/07
1,1-Dichloroethane	**0.190**	mg/L	0.0500		50	11/21/07
1,1-Dichloroethene	**0.0618**	mg/L	0.0010	0.007	1	11/20/07
1,1-Dichloropropene	ND	mg/L	0.0020		1	11/20/07
1,2,3-Trichlorobenzene	ND	mg/L	0.0010		1	11/20/07
1,2,3-Trichloropropane	ND	mg/L	0.0010		1	11/20/07
1,2,4-Trichlorobenzene	ND	mg/L	0.0010	0.07	1	11/20/07
1,2,4-Trimethylbenzene	ND	mg/L	0.0010		1	11/20/07
1,2-Dibromo-3-Chloropropane	ND	mg/L	0.0050	0.0002	1	11/20/07
1,2-Dibromoethane	ND	mg/L	0.0010	0.00005	1	11/20/07
1,2-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	11/20/07
1,2-Dichloroethane	ND	mg/L	0.0010	0.005	1	11/20/07
1,2-Dichloropropane	ND	mg/L	0.0010	0.005	1	11/20/07
1,3,5-Trimethylbenzene	ND	mg/L	0.0010		1	11/20/07
1,3-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	11/20/07
1,3-Dichloropropane	ND	mg/L	0.0010		1	11/20/07
1,4-Dichlorobenzene	ND	mg/L	0.0010	0.075	1	11/20/07
1,4-Dioxane - Screen	ND	mg/L	0.500		1	11/20/07
1-Chlorohexane	ND	mg/L	0.0010		1	11/20/07
2,2-Dichloropropane	ND	mg/L	0.0010		1	11/20/07
2-Butanone	ND	mg/L	0.0250		1	11/20/07
2-Chlorotoluene	ND	mg/L	0.0010		1	11/20/07
2-Hexanone	ND	mg/L	0.0100		1	11/20/07
4-Chlorotoluene	ND	mg/L	0.0010		1	11/20/07
4-Isopropyltoluene	ND	mg/L	0.0010		1	11/20/07
4-Methyl-2-Pentanone	ND	mg/L	0.0250		1	11/20/07
Acetone	ND	mg/L	0.0250		1	11/20/07
Benzene	ND	mg/L	0.0010	0.005	1	11/20/07
Bromobenzene	ND	mg/L	0.0020		1	11/20/07
Bromochloromethane	ND	mg/L	0.0010		1	11/20/07
Bromodichloromethane	ND	mg/L	0.0010		1	11/20/07
Bromoform	ND	mg/L	0.0010		1	11/20/07

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: MW-224S-Dup
Date Sampled: 11/19/07 11:50
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0711288
ESS Laboratory Sample ID: 0711288-04
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Bromomethane	ND	mg/L	0.0020		1	11/20/07
Carbon Disulfide	ND	mg/L	0.0010		1	11/21/07
Carbon Tetrachloride	ND	mg/L	0.0010	0.005	1	11/20/07
Chlorobenzene	ND	mg/L	0.0010	0.1	1	11/20/07
Chloroethane	**0.0054**	mg/L	0.0020		1	11/20/07
Chloroform	ND	mg/L	0.0010		1	11/20/07
Chloromethane	ND	mg/L	0.0020		1	11/20/07
cis-1,2-Dichloroethene	**0.0955**	mg/L	0.0500	0.07	50	11/21/07
cis-1,3-Dichloropropene	ND	mg/L	0.0005		1	11/20/07
Dibromochloromethane	ND	mg/L	0.0010		1	11/20/07
Dibromomethane	ND	mg/L	0.0010		1	11/20/07
Dichlorodifluoromethane	ND	mg/L	0.0020		1	11/20/07
Diethyl Ether	ND	mg/L	0.0010		1	11/20/07
Di-isopropyl ether	ND	mg/L	0.0010		1	11/20/07
Ethyl tertiary-butyl ether	ND	mg/L	0.0010		1	11/20/07
Ethylbenzene	ND	mg/L	0.0010	0.7	1	11/20/07
Hexachlorobutadiene	ND	mg/L	0.0006		1	11/20/07
Isopropylbenzene	ND	mg/L	0.0010		1	11/20/07
Methyl tert-Butyl Ether	ND	mg/L	0.0010	0.04	1	11/20/07
Methylene Chloride	ND	mg/L	0.0050	0.005	1	11/20/07
Naphthalene	**0.0019**	mg/L	0.0010	0.02	1	11/20/07
n-Butylbenzene	ND	mg/L	0.0010		1	11/20/07
n-Propylbenzene	ND	mg/L	0.0010		1	11/20/07
sec-Butylbenzene	ND	mg/L	0.0010		1	11/20/07
Styrene	ND	mg/L	0.0010	0.1	1	11/20/07
tert-Butylbenzene	ND	mg/L	0.0010		1	11/20/07
Tertiary-amyl methyl ether	ND	mg/L	0.0010		1	11/20/07
Tetrachloroethene	**0.0022**	mg/L	0.0010	0.005	1	11/20/07
Tetrahydrofuran	ND	mg/L	0.0050		1	11/20/07
Toluene	**0.0017**	mg/L	0.0010	1	1	11/20/07
trans-1,2-Dichloroethene	ND	mg/L	0.0010	0.1	1	11/20/07
trans-1,3-Dichloropropene	ND	mg/L	0.0005		1	11/20/07
Trichloroethene	**0.878**	mg/L	0.0500	0.005	50	11/21/07
Trichlorofluoromethane	**0.0046**	mg/L	0.0020		1	11/20/07
Vinyl Acetate	ND	mg/L	0.0050		1	11/20/07
Vinyl Chloride	ND	mg/L	0.0010	0.002	1	11/20/07

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site
Client Sample ID: MW-224S-Dup
Date Sampled: 11/19/07 11:50
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0711288
ESS Laboratory Sample ID: 0711288-04
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Xylene O	ND	mg/L	0.0010	10	1	11/20/07
Xylene P,M	ND	mg/L	0.0020	10	1	11/20/07
Xylenes (Total)	ND	mg/L	0.0030	10	1	11/20/07
Trihalomethanes (Total)	ND	mg/L	0.0040	0.1		11/20/07

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*98 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*101 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0711288

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BK72007 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0250	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0250	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0010	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0005	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0711288

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BK72007 - 5030B										
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0050	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0005	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0020	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*25.0*		ug/L	*25.00*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.8*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*25.8*		ug/L	*25.00*		*103*	*70-130*			
Surrogate: Toluene-d8	*25.0*		ug/L	*25.00*		*100*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	9.37		ug/L	10.00		94	70-130			
1,1,1-Trichloroethane	10.1		ug/L	10.00		101	70-130			
1,1,2,2-Tetrachloroethane	9.59		ug/L	10.00		96	70-130			
1,1,2-Trichloroethane	9.84		ug/L	10.00		98	70-130			
1,1-Dichloroethane	10.2		ug/L	10.00		102	70-130			
1,1-Dichloroethene	10.1		ug/L	10.00		101	70-130			
1,1-Dichloropropene	9.77		ug/L	10.00		98	70-130			
1,2,3-Trichlorobenzene	9.22		ug/L	10.00		92	70-130			
1,2,3-Trichloropropane	9.54		ug/L	10.00		95	70-130			
1,2,4-Trichlorobenzene	9.46		ug/L	10.00		95	70-130			
1,2,4-Trimethylbenzene	9.98		ug/L	10.00		100	70-130			
1,2-Dibromo-3-Chloropropane	8.37		ug/L	10.00		84	70-130			
1,2-Dibromoethane	9.93		ug/L	10.00		99	70-130			

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0711288

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BK72007 - 5030B										
1,2-Dichlorobenzene	10.0		ug/L	10.00		100	70-130			
1,2-Dichloroethane	10.0		ug/L	10.00		100	70-130			
1,2-Dichloropropane	9.52		ug/L	10.00		95	70-130			
1,3,5-Trimethylbenzene	8.69		ug/L	10.00		87	70-130			
1,3-Dichlorobenzene	10.0		ug/L	10.00		100	70-130			
1,3-Dichloropropane	9.64		ug/L	10.00		96	70-130			
1,4-Dichlorobenzene	9.66		ug/L	10.00		97	70-130			
1,4-Dioxane - Screen	373		ug/L	200.0		186	0-332			
1-Chlorohexane	10.0		ug/L	10.00		100	70-130			
2,2-Dichloropropane	10.0		ug/L	10.00		100	70-130			
2-Butanone	57.2		ug/L	50.00		114	70-130			
2-Chlorotoluene	9.97		ug/L	10.00		100	70-130			
2-Hexanone	56.1		ug/L	50.00		112	70-130			
4-Chlorotoluene	10.0		ug/L	10.00		100	70-130			
4-Isopropyltoluene	10.1		ug/L	10.00		101	70-130			
4-Methyl-2-Pentanone	49.5		ug/L	50.00		99	70-130			
Acetone	58.4		ug/L	50.00		117	70-130			
Benzene	9.99		ug/L	10.00		100	70-130			
Bromobenzene	9.74		ug/L	10.00		97	70-130			
Bromochloromethane	9.91		ug/L	10.00		99	70-130			
Bromodichloromethane	9.88		ug/L	10.00		99	70-130			
Bromoform	9.45		ug/L	10.00		94	70-130			
Bromomethane	10.8		ug/L	10.00		108	70-130			
Carbon Disulfide	10.9		ug/L	10.00		109	70-130			
Carbon Tetrachloride	10.2		ug/L	10.00		102	70-130			
Chlorobenzene	9.63		ug/L	10.00		96	70-130			
Chloroethane	9.75		ug/L	10.00		98	70-130			
Chloroform	10.3		ug/L	10.00		103	70-130			
Chloromethane	10.6		ug/L	10.00		106	70-130			
cis-1,2-Dichloroethene	10.0		ug/L	10.00		100	70-130			
cis-1,3-Dichloropropene	9.64		ug/L	10.00		96	70-130			
Dibromochloromethane	9.12		ug/L	10.00		91	70-130			
Dibromomethane	9.78		ug/L	10.00		98	70-130			
Dichlorodifluoromethane	11.8		ug/L	10.00		118	70-130			
Diethyl Ether	10.9		ug/L	10.00		109	70-130			
Di-isopropyl ether	9.75		ug/L	10.00		98	70-130			
Ethyl tertiary-butyl ether	9.81		ug/L	10.00		98	70-130			
Ethylbenzene	9.87		ug/L	10.00		99	70-130			
Hexachlorobutadiene	10.7		ug/L	10.00		107	70-130			
Isopropylbenzene	8.69		ug/L	10.00		87	70-130			
Methyl tert-Butyl Ether	9.85		ug/L	10.00		98	70-130			
Methylene Chloride	10.2		ug/L	10.00		102	70-130			
Naphthalene	9.49		ug/L	10.00		95	70-130			
n-Butylbenzene	10.2		ug/L	10.00		102	70-130			
n-Propylbenzene	10.2		ug/L	10.00		102	70-130			
sec-Butylbenzene	9.91		ug/L	10.00		99	70-130			

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0711288

Quality Control Data

8260B Volatile Organic Compounds

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch BK72007 - 5030B										
Styrene	9.75		ug/L	10.00		98	70-130			
tert-Butylbenzene	10.2		ug/L	10.00		102	70-130			
Tertiary-amyl methyl ether	9.93		ug/L	10.00		99	70-130			
Tetrachloroethene	8.13		ug/L	10.00		81	70-130			
Tetrahydrofuran	10.1		ug/L	10.00		101	70-130			
Toluene	9.76		ug/L	10.00		98	70-130			
trans-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130			
trans-1,3-Dichloropropene	8.85		ug/L	10.00		88	70-130			
Trichloroethene	10.0		ug/L	10.00		100	70-130			
Trichlorofluoromethane	8.87		ug/L	10.00		89	70-130			
Vinyl Acetate	7.50		ug/L	10.00		75	70-130			
Vinyl Chloride	10.1		ug/L	10.00		101	70-130			
Xylene O	9.61		ug/L	10.00		96	70-130			
Xylene P,M	19.3		ug/L	20.00		96	70-130			
Surrogate: 1,2-Dichloroethane-d4	*25.2*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.1*		ug/L	*25.00*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*26.5*		ug/L	*25.00*		*106*	*70-130*			
Surrogate: Toluene-d8	*25.9*		ug/L	*25.00*		*104*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	9.21		ug/L	10.00		92	70-130	2	20	
1,1,1-Trichloroethane	9.92		ug/L	10.00		99	70-130	2	20	
1,1,2,2-Tetrachloroethane	9.42		ug/L	10.00		94	70-130	2	20	
1,1,2-Trichloroethane	9.88		ug/L	10.00		99	70-130	0.4	20	
1,1-Dichloroethane	9.84		ug/L	10.00		98	70-130	3	20	
1,1-Dichloroethene	9.91		ug/L	10.00		99	70-130	2	20	
1,1-Dichloropropene	9.66		ug/L	10.00		97	70-130	1	20	
1,2,3-Trichlorobenzene	10.2		ug/L	10.00		102	70-130	10	20	
1,2,3-Trichloropropane	9.77		ug/L	10.00		98	70-130	2	20	
1,2,4-Trichlorobenzene	10.4		ug/L	10.00		104	70-130	9	20	
1,2,4-Trimethylbenzene	9.96		ug/L	10.00		100	70-130	0.2	20	
1,2-Dibromo-3-Chloropropane	10.7		ug/L	10.00		107	70-130	25	20	D+
1,2-Dibromoethane	9.56		ug/L	10.00		96	70-130	4	20	
1,2-Dichlorobenzene	9.76		ug/L	10.00		98	70-130	3	20	
1,2-Dichloroethane	9.62		ug/L	10.00		96	70-130	4	20	
1,2-Dichloropropane	9.53		ug/L	10.00		95	70-130	0.1	20	
1,3,5-Trimethylbenzene	8.60		ug/L	10.00		86	70-130	1	20	
1,3-Dichlorobenzene	9.98		ug/L	10.00		100	70-130	0.6	20	
1,3-Dichloropropane	9.46		ug/L	10.00		95	70-130	2	20	
1,4-Dichlorobenzene	9.58		ug/L	10.00		96	70-130	0.8	20	
1,4-Dioxane - Screen	486		ug/L	200.0		243	0-332	26	200	
1-Chlorohexane	9.96		ug/L	10.00		100	70-130	0.8	20	
2,2-Dichloropropane	9.62		ug/L	10.00		96	70-130	4	20	
2-Butanone	55.3		ug/L	50.00		111	70-130	3	20	
2-Chlorotoluene	10.0		ug/L	10.00		100	70-130	0.3	20	
2-Hexanone	57.4		ug/L	50.00		115	70-130	2	20	
4-Chlorotoluene	9.83		ug/L	10.00		98	70-130	2	20	

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0711288

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BK72007 - 5030B										
4-Isopropyltoluene	9.91		ug/L	10.00		99	70-130	2	20	
4-Methyl-2-Pentanone	49.2		ug/L	50.00		98	70-130	0.5	20	
Acetone	62.3		ug/L	50.00		125	70-130	7	20	
Benzene	9.63		ug/L	10.00		96	70-130	4	20	
Bromobenzene	9.54		ug/L	10.00		95	70-130	2	20	
Bromochloromethane	9.76		ug/L	10.00		98	70-130	2	20	
Bromodichloromethane	9.87		ug/L	10.00		99	70-130	0.1	20	
Bromoform	9.66		ug/L	10.00		97	70-130	2	20	
Bromomethane	11.2		ug/L	10.00		112	70-130	4	20	
Carbon Disulfide	10.8		ug/L	10.00		108	70-130	1	20	
Carbon Tetrachloride	10.0		ug/L	10.00		100	70-130	1	20	
Chlorobenzene	9.42		ug/L	10.00		94	70-130	2	20	
Chloroethane	10.4		ug/L	10.00		104	70-130	7	20	
Chloroform	10.2		ug/L	10.00		102	70-130	1	20	
Chloromethane	11.3		ug/L	10.00		113	70-130	7	20	
cis-1,2-Dichloroethene	9.92		ug/L	10.00		99	70-130	1	20	
cis-1,3-Dichloropropene	9.67		ug/L	10.00		97	70-130	0.3	20	
Dibromochloromethane	9.00		ug/L	10.00		90	70-130	1	20	
Dibromomethane	9.80		ug/L	10.00		98	70-130	0.2	20	
Dichlorodifluoromethane	12.5		ug/L	10.00		125	70-130	6	20	
Diethyl Ether	11.5		ug/L	10.00		115	70-130	5	20	
Di-isopropyl ether	9.52		ug/L	10.00		95	70-130	2	20	
Ethyl tertiary-butyl ether	9.55		ug/L	10.00		96	70-130	3	20	
Ethylbenzene	9.67		ug/L	10.00		97	70-130	2	20	
Hexachlorobutadiene	11.3		ug/L	10.00		113	70-130	5	20	
Isopropylbenzene	8.60		ug/L	10.00		86	70-130	1	20	
Methyl tert-Butyl Ether	9.83		ug/L	10.00		98	70-130	0.2	20	
Methylene Chloride	9.82		ug/L	10.00		98	70-130	4	20	
Naphthalene	10.6		ug/L	10.00		106	70-130	11	20	
n-Butylbenzene	10.2		ug/L	10.00		102	70-130	0	20	
n-Propylbenzene	10.1		ug/L	10.00		101	70-130	1	20	
sec-Butylbenzene	10.1		ug/L	10.00		101	70-130	2	20	
Styrene	9.16		ug/L	10.00		92	70-130	6	20	
tert-Butylbenzene	10.2		ug/L	10.00		102	70-130	0.1	20	
Tertiary-amyl methyl ether	9.75		ug/L	10.00		98	70-130	2	20	
Tetrachloroethene	9.29		ug/L	10.00		93	70-130	13	20	
Tetrahydrofuran	9.50		ug/L	10.00		95	70-130	6	20	
Toluene	9.75		ug/L	10.00		98	70-130	0.1	20	
trans-1,2-Dichloroethene	9.83		ug/L	10.00		98	70-130	3	20	
trans-1,3-Dichloropropene	8.53		ug/L	10.00		85	70-130	4	20	
Trichloroethene	9.93		ug/L	10.00		99	70-130	0.9	20	
Trichlorofluoromethane	8.76		ug/L	10.00		88	70-130	1	20	
Vinyl Acetate	6.76		ug/L	10.00		68	70-130	10	20	B-
Vinyl Chloride	10.5		ug/L	10.00		105	70-130	3	20	
Xylene O	9.29		ug/L	10.00		93	70-130	3	20	
Xylene P,M	19.1		ug/L	20.00		95	70-130	1	20	

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0711288

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BK72007 - 5030B										
Surrogate: 1,2-Dichloroethane-d4	*25.3*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.6*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*26.1*		ug/L	*25.00*		*104*	*70-130*			
Surrogate: Toluene-d8	*26.2*		ug/L	*25.00*		*105*	*70-130*			
Batch BK72111 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0250	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0250	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0010	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0711288

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BK72111 - 5030B										
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0005	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0050	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0005	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0020	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*24.2*		ug/L	*25.00*		*97*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.0*		ug/L	*25.00*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*24.9*		ug/L	*25.00*		*100*	*70-130*			
Surrogate: Toluene-d8	*25.5*		ug/L	*25.00*		*102*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	9.25		ug/L	10.00		92	70-130			
1,1,1-Trichloroethane	9.73		ug/L	10.00		97	70-130			
1,1,2,2-Tetrachloroethane	9.45		ug/L	10.00		94	70-130			
1,1,2-Trichloroethane	9.74		ug/L	10.00		97	70-130			
1,1-Dichloroethane	9.95		ug/L	10.00		100	70-130			
1,1-Dichloroethene	9.71		ug/L	10.00		97	70-130			
1,1-Dichloropropene	9.77		ug/L	10.00		98	70-130			

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0711288

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BK72111 - 5030B										
1,2,3-Trichlorobenzene	9.27		ug/L	10.00		93	70-130			
1,2,3-Trichloropropane	9.85		ug/L	10.00		98	70-130			
1,2,4-Trichlorobenzene	9.74		ug/L	10.00		97	70-130			
1,2,4-Trimethylbenzene	9.69		ug/L	10.00		97	70-130			
1,2-Dibromo-3-Chloropropane	9.99		ug/L	10.00		100	70-130			
1,2-Dibromoethane	9.20		ug/L	10.00		92	70-130			
1,2-Dichlorobenzene	9.91		ug/L	10.00		99	70-130			
1,2-Dichloroethane	9.83		ug/L	10.00		98	70-130			
1,2-Dichloropropane	9.60		ug/L	10.00		96	70-130			
1,3,5-Trimethylbenzene	8.69		ug/L	10.00		87	70-130			
1,3-Dichlorobenzene	9.71		ug/L	10.00		97	70-130			
1,3-Dichloropropane	9.62		ug/L	10.00		96	70-130			
1,4-Dichlorobenzene	9.68		ug/L	10.00		97	70-130			
1,4-Dioxane - Screen	300		ug/L	200.0		150	0-332			
1-Chlorohexane	9.75		ug/L	10.00		98	70-130			
2,2-Dichloropropane	9.83		ug/L	10.00		98	70-130			
2-Butanone	53.5		ug/L	50.00		107	70-130			
2-Chlorotoluene	10.1		ug/L	10.00		101	70-130			
2-Hexanone	56.9		ug/L	50.00		114	70-130			
4-Chlorotoluene	9.92		ug/L	10.00		99	70-130			
4-Isopropyltoluene	9.94		ug/L	10.00		99	70-130			
4-Methyl-2-Pentanone	50.6		ug/L	50.00		101	70-130			
Acetone	89.8		ug/L	50.00		180	70-130			B+
Benzene	9.75		ug/L	10.00		98	70-130			
Bromobenzene	9.84		ug/L	10.00		98	70-130			
Bromochloromethane	9.46		ug/L	10.00		95	70-130			
Bromodichloromethane	9.86		ug/L	10.00		99	70-130			
Bromoform	9.65		ug/L	10.00		96	70-130			
Bromomethane	10.4		ug/L	10.00		104	70-130			
Carbon Disulfide	10.4		ug/L	10.00		104	70-130			
Carbon Tetrachloride	9.69		ug/L	10.00		97	70-130			
Chlorobenzene	9.50		ug/L	10.00		95	70-130			
Chloroethane	10.2		ug/L	10.00		102	70-130			
Chloroform	10.1		ug/L	10.00		101	70-130			
Chloromethane	11.6		ug/L	10.00		116	70-130			
cis-1,2-Dichloroethene	10.0		ug/L	10.00		100	70-130			
cis-1,3-Dichloropropene	9.53		ug/L	10.00		95	70-130			
Dibromochloromethane	9.18		ug/L	10.00		92	70-130			
Dibromomethane	9.55		ug/L	10.00		96	70-130			
Dichlorodifluoromethane	12.1		ug/L	10.00		121	70-130			
Diethyl Ether	11.4		ug/L	10.00		114	70-130			
Di-isopropyl ether	9.75		ug/L	10.00		98	70-130			
Ethyl tertiary-butyl ether	9.59		ug/L	10.00		96	70-130			
Ethylbenzene	9.93		ug/L	10.00		99	70-130			
Hexachlorobutadiene	10.6		ug/L	10.00		106	70-130			
Isopropylbenzene	8.69		ug/L	10.00		87	70-130			

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0711288

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BK72111 - 5030B										
Methyl tert-Butyl Ether	9.66		ug/L	10.00		97	70-130			
Methylene Chloride	9.81		ug/L	10.00		98	70-130			
Naphthalene	9.81		ug/L	10.00		98	70-130			
n-Butylbenzene	10.4		ug/L	10.00		104	70-130			
n-Propylbenzene	10.0		ug/L	10.00		100	70-130			
sec-Butylbenzene	9.86		ug/L	10.00		99	70-130			
Styrene	9.25		ug/L	10.00		92	70-130			
tert-Butylbenzene	9.99		ug/L	10.00		100	70-130			
Tertiary-amyl methyl ether	9.64		ug/L	10.00		96	70-130			
Tetrachloroethene	8.68		ug/L	10.00		87	70-130			
Tetrahydrofuran	8.81		ug/L	10.00		88	70-130			
Toluene	9.63		ug/L	10.00		96	70-130			
trans-1,2-Dichloroethene	9.89		ug/L	10.00		99	70-130			
trans-1,3-Dichloropropene	8.62		ug/L	10.00		86	70-130			
Trichloroethene	10.1		ug/L	10.00		101	70-130			
Trichlorofluoromethane	8.61		ug/L	10.00		86	70-130			
Vinyl Acetate	7.68		ug/L	10.00		77	70-130			
Vinyl Chloride	10.2		ug/L	10.00		102	70-130			
Xylene O	9.82		ug/L	10.00		98	70-130			
Xylene P,M	19.3		ug/L	20.00		97	70-130			
Surrogate: 1,2-Dichloroethane-d4	*25.6*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.0*		ug/L	*25.00*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*26.5*		ug/L	*25.00*		*106*	*70-130*			
Surrogate: Toluene-d8	*25.9*		ug/L	*25.00*		*104*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	9.19		ug/L	10.00		92	70-130	0.7	20	
1,1,1-Trichloroethane	9.56		ug/L	10.00		96	70-130	2	20	
1,1,2,2-Tetrachloroethane	9.83		ug/L	10.00		98	70-130	4	20	
1,1,2-Trichloroethane	9.33		ug/L	10.00		93	70-130	4	20	
1,1-Dichloroethane	9.67		ug/L	10.00		97	70-130	3	20	
1,1-Dichloroethene	9.59		ug/L	10.00		96	70-130	1	20	
1,1-Dichloropropene	9.86		ug/L	10.00		99	70-130	0.9	20	
1,2,3-Trichlorobenzene	10.9		ug/L	10.00		109	70-130	16	20	
1,2,3-Trichloropropane	9.73		ug/L	10.00		97	70-130	1	20	
1,2,4-Trichlorobenzene	10.0		ug/L	10.00		100	70-130	3	20	
1,2,4-Trimethylbenzene	9.76		ug/L	10.00		98	70-130	0.7	20	
1,2-Dibromo-3-Chloropropane	11.0		ug/L	10.00		110	70-130	10	20	
1,2-Dibromoethane	9.94		ug/L	10.00		99	70-130	8	20	
1,2-Dichlorobenzene	9.67		ug/L	10.00		97	70-130	2	20	
1,2-Dichloroethane	9.60		ug/L	10.00		96	70-130	2	20	
1,2-Dichloropropane	9.33		ug/L	10.00		93	70-130	3	20	
1,3,5-Trimethylbenzene	8.49		ug/L	10.00		85	70-130	2	20	
1,3-Dichlorobenzene	9.67		ug/L	10.00		97	70-130	0.4	20	
1,3-Dichloropropane	9.60		ug/L	10.00		96	70-130	0.2	20	
1,4-Dichlorobenzene	9.30		ug/L	10.00		93	70-130	4	20	
1,4-Dioxane - Screen	505		ug/L	200.0		252	0-332	51	200	

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0711288

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BK72111 - 5030B										
1-Chlorohexane	9.89		ug/L	10.00		99	70-130	1	20	
2,2-Dichloropropane	9.63		ug/L	10.00		96	70-130	2	20	
2-Butanone	53.9		ug/L	50.00		108	70-130	0.8	20	
2-Chlorotoluene	9.83		ug/L	10.00		98	70-130	3	20	
2-Hexanone	62.0		ug/L	50.00		124	70-130	9	20	
4-Chlorotoluene	9.69		ug/L	10.00		97	70-130	2	20	
4-Isopropyltoluene	9.90		ug/L	10.00		99	70-130	0.4	20	
4-Methyl-2-Pentanone	52.4		ug/L	50.00		105	70-130	3	20	
Acetone	59.5		ug/L	50.00		119	70-130	41	20	D+
Benzene	9.66		ug/L	10.00		97	70-130	0.9	20	
Bromobenzene	9.54		ug/L	10.00		95	70-130	3	20	
Bromochloromethane	9.52		ug/L	10.00		95	70-130	0.6	20	
Bromodichloromethane	9.71		ug/L	10.00		97	70-130	2	20	
Bromoform	9.91		ug/L	10.00		99	70-130	3	20	
Bromomethane	10.0		ug/L	10.00		100	70-130	3	20	
Carbon Disulfide	10.3		ug/L	10.00		103	70-130	1	20	
Carbon Tetrachloride	9.82		ug/L	10.00		98	70-130	1	20	
Chlorobenzene	9.29		ug/L	10.00		93	70-130	2	20	
Chloroethane	10.2		ug/L	10.00		102	70-130	0.5	20	
Chloroform	10.2		ug/L	10.00		102	70-130	0.5	20	
Chloromethane	11.4		ug/L	10.00		114	70-130	2	20	
cis-1,2-Dichloroethene	9.53		ug/L	10.00		95	70-130	5	20	
cis-1,3-Dichloropropene	9.53		ug/L	10.00		95	70-130	0	20	
Dibromochloromethane	9.13		ug/L	10.00		91	70-130	0.5	20	
Dibromomethane	9.68		ug/L	10.00		97	70-130	1	20	
Dichlorodifluoromethane	11.5		ug/L	10.00		115	70-130	5	20	
Diethyl Ether	10.7		ug/L	10.00		107	70-130	6	20	
Di-isopropyl ether	9.64		ug/L	10.00		96	70-130	1	20	
Ethyl tertiary-butyl ether	9.52		ug/L	10.00		95	70-130	0.7	20	
Ethylbenzene	9.88		ug/L	10.00		99	70-130	0.5	20	
Hexachlorobutadiene	11.3		ug/L	10.00		113	70-130	6	20	
Isopropylbenzene	8.49		ug/L	10.00		85	70-130	2	20	
Methyl tert-Butyl Ether	9.37		ug/L	10.00		94	70-130	3	20	
Methylene Chloride	9.75		ug/L	10.00		98	70-130	0.6	20	
Naphthalene	10.7		ug/L	10.00		107	70-130	9	20	
n-Butylbenzene	10.4		ug/L	10.00		104	70-130	0.3	20	
n-Propylbenzene	9.88		ug/L	10.00		99	70-130	2	20	
sec-Butylbenzene	9.86		ug/L	10.00		99	70-130	0	20	
Styrene	9.44		ug/L	10.00		94	70-130	2	20	
tert-Butylbenzene	9.84		ug/L	10.00		98	70-130	2	20	
Tertiary-amyl methyl ether	9.77		ug/L	10.00		98	70-130	1	20	
Tetrachloroethene	8.79		ug/L	10.00		88	70-130	1	20	
Tetrahydrofuran	9.93		ug/L	10.00		99	70-130	12	20	
Toluene	9.63		ug/L	10.00		96	70-130	0	20	
trans-1,2-Dichloroethene	9.69		ug/L	10.00		97	70-130	2	20	
trans-1,3-Dichloropropene	8.80		ug/L	10.00		88	70-130	2	20	

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0711288

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BK72111 - 5030B										
Trichloroethene	9.84		ug/L	10.00		98	70-130	3	20	
Trichlorofluoromethane	8.50		ug/L	10.00		85	70-130	1	20	
Vinyl Acetate	7.33		ug/L	10.00		73	70-130	5	20	
Vinyl Chloride	10.2		ug/L	10.00		102	70-130	0.4	20	
Xylene O	9.34		ug/L	10.00		93	70-130	5	20	
Xylene P,M	19.5		ug/L	20.00		97	70-130	0.8	20	
Surrogate: 1,2-Dichloroethane-d4	*24.9*		ug/L	*25.00*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.3*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*25.8*		ug/L	*25.00*		*103*	*70-130*			
Surrogate: Toluene-d8	*25.8*		ug/L	*25.00*		*103*	*70-130*			

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site ESS Laboratory Work Order: 0711288

Notes and Definitions

U	Analyte included in the analysis, but not detected
PH+	pH > 2
D+	Relative percent difference for duplicate is outside of criteria.
D	Diluted.
C+	Continuing Calibration recovery is above upper control limit.
B+	Blank Spike recovery is above upper control limit.
B-	Blank Spike recovery is below lower control limit.
ND	Analyte NOT DETECTED above the detection limit
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.

CERTIFICATE OF ANALYSIS

Client Name: MACTEC Engineering & Consulting, Inc.
Client Project ID: Providence Gorham Site

ESS Laboratory Work Order: 0711288

ESS LABORATORY CERTIFICATIONS

U.S. Army Corps of Engineers
Soil and Water

Navy Installation Restoration QA Program
Soil and Water

Rhode Island: A-179

Connecticut: PH-0750

Maine: RI002

Massachusetts: M-RI002

New Hampshire (NELAP accredited): 242405
Potable Water
Non Potable Water

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

United States Department of Agriculture
Soil Permit: S-54210

New Jersey (NELAP accredited): RI002
Potable Water
Non Potable Water
Soil and Hazardous Waste

Maryland: 301
Potable Water

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Page 1 of 1

Turn Time: X Standard Other ____
If faster than 5 days, prior approval by laboratory is required # ____

State where samples were collected from:
MA (RI) CT NH NJ NY ME Other ____

Is this project for any of the following:
MA-MCP Navy USACE Other ____

Reporting Limits

ESS LAB PROJECT ID: 0711288

Electronic Deliverable: X Yes ___ No
Format: Excel__ Access__ PDF__ Other EQuIS EZ

Co. Name	Project #	Project Name (20 Char. or less)
MACTEC	3650050041 .13	Gorham

Contact Person	Address
Dave Heislein	107 Audubon Rd.

City	State	Zip	PO#
Wakefield	MA	01880	

Telephone #	Fax #	Email Address
781 245-6606		dheislein@mactec.com

ESS LAB Sample#	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	Circle and/or Write Required Analysis
1 (PM)	~~11~~ 11.19.07	1044		X	GW	MW-222S	2	3	V	X
2	11.19.07	1120		X	GW	MW-223S	2	3	V	X
3	11.19.07	1150		X	GW	MW-224S	2	3	V	X
4	11.19.07	1150		X	GW	MW-224S - DUP	2	3	V	X

Circle and/or Write Required Analysis: 524.2 / 624 / (8260) 8021 MTBE/BTEX / VPH w/targets / 8015 GRO / 8100 TPH / EPH w/PAHs / 8081 Pesticides / 8015 DRO / EPH 4 Diesel / 608 Pesticides / 8082 PCB / 8270 SVOA / 625 / RCRA5 / PP13 / RCRA8 / TAL23 / TCLP-RCRA8 / NBC7 / MCP-METALS (13) / MCP-METALS (13) w/Hg / 608 PCB

Container Type: P-Poly G-Glass S-Sterile V-VOA | Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present: X Yes ___ No
Seals Intact: ___ Yes ___ No NA: ___
Cooler Temp: 4.3

Internal Use Only
[ ] Pickup
[ ] Technicians ____

Preservation Code: 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ____

Sampled by: Phil Muller

Comments:

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Phil Muller	11.19.07 1721	J Davis	11/19/07 1721				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 B