



engineering and constructing a better tomorrow

February 17, 2009

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

**RE: Indoor Air Sampling Results – First Weekly Sampling Event After Vapor Mitigation System Start-Up
Former Gorham Manufacturing Facility, Retail Complex
333 Adelaide Avenue, Providence, Rhode Island
MACTEC Project No. 3650050041.12**

Dear Mr. Martella:

This letter presents the results of the first weekly air sampling event conducted by MACTEC Engineering & Consulting, Inc. (MACTEC) on February 3, 2009 after the start-up of the vapor mitigation system at the retail complex located at the Former Gorham Manufacturing Facility, 333 Adelaide Avenue, Providence, Rhode Island (the Site). The sampling was conducted consistent with the Short Term Response Action Order of Approval dated July 24, 2008 and the Addendum to the Order of Approval dated August 7, 2008. This sampling event was conducted one day after start-up of the system (February 2, 2009) and is the first of multiple scheduled weekly sampling events. The results of this sampling event are indicative of the system operating in start-up mode, and the analytical results and the system performance measurements indicate the system start-up has been effective.

Table 1 summarizes the analytical results for the thirteen samples submitted for laboratory analysis. The samples included seven indoor air samples (compared to Draft Connecticut Industrial/Commercial Indoor Target Air Concentrations (TAC)), one outdoor air reference sample, four samples collected from soil vapor extraction points, and one sample collected after the carbon treatment system (system in the large retail space).

As shown in Table 1, all indoor air concentrations, except for methylene chloride, are below the corresponding TAC for the four samples collected from the large retail space and the eastern small retail space. The methylene chloride detected in the large retail space samples appears to be associated with painting and floor tile replacement and repair activities that took place shortly before the sampling event. For the samples collected from the center and western small retail spaces, all concentrations except for trichloroethylene (TCE) are below the TACs. The TCE concentrations in those two samples are lower than previously reported and are only slightly

above the corresponding TAC. This may be due to the building ventilation systems being turned off to conserve heat prior to this sampling event. The three spaces with concentrations above the corresponding TACs (large retail, small retail west, and small retail center) are all currently unoccupied. Air monitoring will continue on a weekly basis as described in the Order of Approval and Addendum to the Order of Approval and the results will be reported to Rhode Island Department of Environmental Management

Please contact me at 781 213-5610 if I can provide additional information or answer any questions concerning this first monitoring event. Thank you.

MACTEC Engineering and Consulting, Inc.



Charles Collet
Project Manager



Michael Murphy
Sr. Principal Scientist

Enclosed: Table 1 Analytical Results – Air Monitoring Event February 3, 2009

cc: T. Dellar, City of Providence
G. Simpson, Textron, Inc.
Knight Memorial Library Repository
G. Wilson, Kimco Realty Corporation (including tenants)
J. Morgan, The Stop & Shop Supermarket Co. LLC
MACTEC Project FileP:\3650080114\4.0 Deliverables\4.8 Monthly Progress
Reports\RIDEMletterFEB17_2009.doc]

Table 1. Analytical Results - Air Monitoring Event February 3, 2009
Short Term Response Action
Former Gorham Manufacturing - Retail Complex
Adelaide Avenue
Providence, Rhode Island

ALL CONCS UG/M3	AA-1-020309	EW-5-020309	EW-6-020309	EW-7-020309	EW-COMBINED-020309	POST CARBON-020309	CT TARGET AIR CONCENTRATION	IA-1-020309	IA-2-020309	IA-3-020309	IA-4-020309
Acetone	8.0	530.	580.	580.	1600.	1200	500	7.7	9.6	12.	10.
Benzene	0.62	13.	5.2	<3.2	14.	1.3	3.3	0.68	0.67	0.71	0.68
Benzyl Chloride	<0.26	<5.2	<5.2	<5.2	<5.2	<0.26	NA	<0.26	<0.26	<0.26	<0.26
Bromodichloromethane	<0.33	<6.6	<6.6	<6.6	<6.6	<0.33	0.46	<0.33	<0.33	<0.33	<0.33
Bromoform	<0.51	<11.	<11.	<11.	<11.	<0.51	7.3	<0.51	<0.51	<0.51	<0.51
Bromomethane	<0.19	<3.8	<3.8	<3.8	<3.8	<0.19	NA	<0.19	<0.19	<0.19	<0.19
1,3-Butadiene	<0.11	<2.2	<2.2	<2.2	<2.2	<0.11	NA	<0.11	<0.11	<0.11	<0.11
2-Butanone (MEK)	1.2	6.3	120.	8.7	37.	10.	500	3.1	4.1	4.2	4.4
Carbon Disulfide	<0.16	<3.2	<3.2	5.7	<3.2	<0.16	NA	<0.16	<0.16	<0.16	<0.16
Carbon Tetrachloride	0.44	<6.2	<6.2	<6.2	<6.2	0.38	0.54	0.41	0.41	0.45	0.43
Chlorobenzene	<0.23	<4.6	<4.6	<4.6	<4.6	<0.23	200	<0.23	<0.23	<0.23	<0.23
Chlorodibromomethane	<0.43	<8.6	<8.6	<8.6	<8.6	<0.43	NA	<0.43	<0.43	<0.43	<0.43
Chloroethane	<0.13	260.	140.	170.	3400	<0.13	500	<0.13	<0.13	<0.13	<0.13
Chloroform	<0.24	83.	42.	<4.8	27.	<0.24	0.5	<0.24	<0.24	<0.24	<0.24
Chloromethane	0.90	<2.0	<2.0	<2.0	<2.0	0.59	80	1.0	1.0	0.98	0.99
Cyclohexane	<0.17	<3.4	<3.4	<3.4	<3.4	0.93	NA	<0.17	<0.17	<0.17	<0.17
1,2-Dibromoethane	<0.38	<7.6	<7.6	<7.6	<7.6	<0.38	0.038	<0.38	<0.38	<0.38	<0.38
1,2-Dichlorobenzene	<0.30	<6.0	<6.0	<6.0	<6.0	<0.30	410	<0.30	<0.30	<0.30	<0.30
1,3-Dichlorobenzene	<0.30	<6.0	<6.0	<6.0	<6.0	2.9	410	<0.30	<0.30	<0.30	<0.30
1,4-Dichlorobenzene	<0.30	<6.0	<6.0	<6.0	<6.0	<0.30	24	<0.30	<0.30	<0.30	<0.30
Dichlorodifluoromethane	2.2	<5.0	<5.0	<5.0	<5.0	0.76	500	2.1	2.2	2.3	2.2
1,1-Dichloroethane	<0.20	11000	5200	1700.	19000	<0.20	430	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	<0.20	<4.0	<4.0	<4.0	<4.0	<0.20	0.31	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethylene	<0.20	2500.	850.	14.	7800	<0.20	20	<0.20	<0.20	<0.20	<0.20
cis-1,2-Dichloroethylene	<0.20	2900.	700.	1100.	14000	0.27	100	<0.20	0.24	<0.20	<0.20
t-1,2-Dichloroethylene	<0.20	26.	12.	150.	110.	<0.20	200	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	<0.23	<4.6	<4.6	<4.6	<4.6	<0.23	0.42	<0.23	<0.23	<0.23	<0.23
cis-1,3-Dichloropropene	<0.22	<4.4	<4.4	<4.4	<4.4	<0.22	2.9	<0.22	<0.22	<0.22	<0.22
trans-1,3-Dichloropropene	<0.22	<4.4	<4.4	<4.4	<4.4	<0.22	2.9	<0.22	<0.22	<0.22	<0.22
1,2-Dichlorotetrafluoroethane (114)	<0.35	<7.0	<7.0	<7.0	<7.0	<0.35	NA	<0.35	<0.35	<0.35	<0.35
Ethanol	5.4	320.	360.	350.	960.	740	NA	8.3	8.8	9.2	8.9
Ethyl Acetate	<0.37	<7.3	<7.3	<7.3	<7.3	<0.37	NA	<0.37	<0.37	<0.37	<0.37
Ethylbenzene	0.25	<4.4	<4.4	<4.4	9.4	10.	290	0.28	0.28	0.29	0.29
4-Ethyl Toluene	<0.25	<5.0	<5.0	<5.0	<5.0	2.1	NA	<0.25	<0.25	<0.25	<0.25
n-Heptane	0.27	<4.0	<4.0	<4.0	<4.0	1.8	NA	<0.20	<0.20	<0.20	<0.20
Hexachlorobutadiene	<1.1	<22.	<22.	<22.	<22.	<1.1	NA	<1.1	<1.1	<1.1	<1.1
Hexane	0.75	5.0	<3.6	10.	16.	3.0	NA	0.74	0.57	0.87	0.66
2-Hexanone	0.22	<4.0	<4.0	<4.0	<4.0	<0.20	NA	<0.20	<0.20	0.26	0.33
Isopropanol	1.4	190.	210.	210.	610.	450	NA	3.1	3.1	4.1	3.3
Methyl tert-Butyl Ether (MTBE)	<0.18	<3.6	<3.6	<3.6	<3.6	<0.18	190	<0.18	<0.18	<0.18	<0.18
Methylene Chloride	3.1	7.8	<7.0	9.3	12.	20.	17	33.	30.	31.	29.

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Adelaide Avenue
Providence, Rhode Island

ALL CONCS UG/M3	AA-1-020309	EW-5-020309	EW-6-020309	EW-7-020309	EW-COMBINED-020309	POST-CARBON-020309	CT TARGET AIR CONCENTRATION	IA-1-020309	IA-2-020309	IA-3-020309	IA-4-020309
4-Methyl-2-Pentanone (MIBK)	<0.20	<4.0	<4.0	<4.0	<4.0	5.0	200	<0.20	<0.20	<0.20	<0.20
Propene	<0.18	<3.5	<3.5	<3.5	<3.5	<0.18	NA	<0.18	<0.18	<0.18	<0.18
Styrene	<0.21	<4.2	<4.2	<4.2	<4.2	3.4	290	<0.21	<0.21	<0.21	<0.21
1,1,2,2-Tetrachloroethane	<0.34	<6.8	<6.8	<6.8	<6.8	<0.34	0.14	<0.34	<0.34	<0.34	<0.34
Tetrachloroethylene	<0.34	210.	330.	66.	140.	0.72	5	0.57	0.64	0.56	0.58
Tetrahydrofuran	<0.15	16.	75.	41.	77.	6.8	NA	1.2	1.2	1.1	1.2
Toluene	1.5	13.	12.	14.	36.	29.	500	1.4	1.3	1.5	1.3
1,2,4-Trichlorobenzene	<0.37	<7.4	<7.4	<7.4	<7.4	<0.37	NA	<0.37	<0.37	<0.37	<0.37
1,1,1-Trichloroethane	<0.27	190000	69000	5600	190000	1.0	500	0.56	0.63	0.57	0.62
1,1,2-Trichloroethane	<0.27	<5.4	<5.4	<5.4	<5.4	<0.27	12	<0.27	<0.27	<0.27	<0.27
Trichloroethylene	<0.27	51000	12000	230.	36000	2.0	1	0.46	0.56	0.49	0.48
Trichlorofluoromethane	1.2	3500.	2300.	1800.	9900	0.71	NA	1.4	1.2	1.3	1.3
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.53	<7.6	<7.6	<7.6	<7.6	1.3	NA	0.64	0.58	0.58	0.59
1,2,4-Trimethylbenzene	0.28	<5.0	<5.0	<5.0	<5.0	<0.25	52	0.36	0.37	0.36	0.37
1,3,5-Trimethylbenzene	<0.25	<5.0	<5.0	<5.0	<5.0	2.1	52	<0.25	<0.25	<0.25	<0.25
Vinyl Acetate	<0.71	<15.	<15.	<15.	<15.	<0.71	NA	<0.71	<0.71	<0.71	<0.71
Vinyl Chloride	<0.13	<2.6	<2.6	280.	110.	<0.13	1.9	<0.13	<0.13	<0.13	<0.13
m/p-Xylene	0.72	<8.6	<8.6	<8.6	25.	27.	500	0.87	0.88	0.90	0.89
o-Xylene	0.27	<4.4	<4.4	<4.4	8.4	9.5	500	0.33	0.34	0.33	0.33

NA = not available

Bolded and shaded values are above CT target air concentration for industrial/commercial scenario

methylene chloride concentrations in four indoor air samples from LARGE retail space appear to be unrelated to subsurface conditions

IA-1 through IA-4 from large retail space

IA-5 from eastern small retail space

IA-6 from center small retail space

IA-7 from western small retail space

AA-1 is the outdoor air reference sample

EW -COMBINED is the combined sample from the vapor extraction wells EW-1 through EW-4 in the large retail space prior to treatment

POST-CARBON is from the treated air stream from the large retail space

EW-5 is from the western perimeter of the large retail space

EW-6 is from the center small retail space

EW-7 is from the western small retail space

Prepared by:	mjm
Checked By:	kjc

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Adelaide Avenue
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ALL CONCS UG/M3	IA-5- 020309	IA-6- 020309	IA-7- 020309
Acetone	11.	14.	12.
Benzene	0.60	0.60	0.75
Benzyl Chloride	<0.26	<0.26	<0.26
Bromodichloromethane	<0.33	<0.33	<0.33
Bromoform	<0.51	<0.51	<0.51
Bromomethane	<0.19	<0.19	<0.19
1,3-Butadiene	<0.11	<0.11	<0.11
2-Butanone (MEK)	2.4	10.	6.5
Carbon Disulfide	<0.16	<0.16	<0.16
Carbon Tetrachloride	0.44	0.42	0.44
Chlorobenzene	<0.23	<0.23	<0.23
Chlorodibromomethane	<0.43	<0.43	<0.43
Chloroethane	<0.13	<0.13	<0.13
Chloroform	<0.24	<0.24	<0.24
Chloromethane	1.0	0.90	0.98
Cyclohexane	<0.17	<0.17	<0.17
1,2-Dibromoethane	<0.38	<0.38	<0.38
1,2-Dichlorobenzene	<0.30	<0.30	<0.30
1,3-Dichlorobenzene	<0.30	<0.30	<0.30
1,4-Dichlorobenzene	<0.30	<0.30	<0.30
Dichlorodifluoromethane	2.2	2.1	2.2
1,1-Dichloroethane	<0.20	<0.20	<0.20
1,2-Dichloroethane	<0.20	<0.20	<0.20
1,1-Dichloroethylene	<0.20	<0.20	<0.20
cis-1,2-Dichloroethylene	<0.20	<0.20	<0.20
t-1,2-Dichloroethylene	<0.20	<0.20	<0.20
1,2-Dichloropropane	<0.23	<0.23	<0.23
cis-1,3-Dichloropropene	<0.22	<0.22	<0.22
trans-1,3-Dichloropropene	<0.22	<0.22	<0.22
1,2-Dichlorotetrafluoroethane (114)	<0.35	<0.35	<0.35
Ethanol	12.	23.	16.
Ethyl Acetate	<0.37	<0.37	<0.37
Ethylbenzene	0.25	0.25	0.29
4-Ethyl Toluene	<0.25	<0.25	<0.25
n-Heptane	<0.20	<0.20	<0.20
Hexachlorobutadiene	<1.1	<1.1	<1.1
Hexane	0.54	0.78	0.87
2-Hexanone	0.48	0.42	0.29
Isopropanol	3.5	6.6	6.2
Methyl tert-Butyl Ether (MTBE)	<0.18	<0.18	<0.18
Methylene Chloride	3.6	5.2	5.7

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ALL CONCS UG/M3	IA-5-020309	IA-6-020309	IA-7-020309
4-Methyl-2-Pentanone (MIBK)	<0.20	<0.20	<0.20
Propene	<0.18	<0.18	<0.18
Styrene	<0.21	<0.21	<0.21
1,1,2,2-Tetrachloroethane	<0.34	<0.34	<0.34
Tetrachloroethylene	<0.34	<0.34	<0.34
Tetrahydrofuran	<0.15	2.8	2.1
Toluene	1.1	1.3	1.6
1,2,4-Trichlorobenzene	<0.37	<0.37	<0.37
1,1,1-Trichloroethane	0.92	3.9	2.4
1,1,2-Trichloroethane	<0.27	<0.27	<0.27
Trichloroethylene	0.39	1.7	1.1
Trichlorofluoromethane	1.3	1.3	1.4
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.54	0.51	0.57
1,2,4-Trimethylbenzene	0.32	0.32	0.34
1,3,5-Trimethylbenzene	<0.25	<0.25	<0.25
Vinyl Acetate	<0.71	<0.71	<0.71
Vinyl Chloride	<0.13	<0.13	<0.13
m/p-Xylene	0.74	0.72	0.82
o-Xylene	0.27	0.26	0.31