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Mr. Jeffrey Crawford  
Rhode Island Department of Environmental Management  
Office of Waste Management  
235 Promenade Street  
Providence, RI 02908-5767

ENVIRONMENTAL

Subject:  
March 2013 Quarterly Monitoring Report for Springfield Street School Complex

Date:  
May 21, 2013

Dear Mr. Crawford:

Contact:  
Donna H. Pallister, PE

ARCADIS US, Inc. (ARCADIS) conducted quarterly monitoring of soil gas, indoor air, the cap, and the sub-slab ventilation system between March 20 and March 22, 2013. The monitoring was performed in accordance with the *Long-Term Operation and Maintenance Plan and Site Contingency Plan (O&M Plan)* contained in the *Remedial Action Work Plan* prepared by ATC dated April 2, 1999, revised May 3, 1999 and May 9, 1999. The *Remedial Action Work Plan (RAWP)* was approved by the Rhode Island Department of Environmental Management (RIDEM) in a letter dated June 4, 1999.

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This work is subject to the Limitations contained in Attachment A. Results of monitoring are provided in the following sections and in the attachments.

Our ref:  
WK012152.0008

## COVER MONITORING

ARCADIS conducted a visual survey of the site on March 22, 2013 for evidence of significant soil cover erosion, or for any areas where the orange snow fencing indicator barrier was visible. ARCADIS did not observe any areas where the orange indicator barrier was visible during this monitoring event. No evidence of erosion or significant settling was observed.

## SUB-SLAB VENTILATION SYSTEM

### Field Monitoring

The sub-slab ventilation system was inspected by ARCADIS during the quarterly monitoring on March 20, 2013. The two elementary school blowers and the two middle school blowers were operating normally upon arrival.

Samples of influent and effluent (before and after the carbon canisters) air were collected at each blower and screened for methane, carbon dioxide, oxygen, carbon monoxide, hydrogen sulfide, and organic vapors using a Landtec GEM2000 Plus and a MiniRae 2000. Results of screening are provided on Table 1. Methane, carbon monoxide, hydrogen sulfide, and organic vapors were not detected in any of the samples. Carbon dioxide was detected at concentrations of 0.1% at all but one location. Therefore, six of the seven of the sample concentrations were equal or greater than the RAWP Action Level of 1000 ppm (0.1%).

Air samples were also collected in Tedlar bags from influent air at each blower. The Tedlar bags were submitted to Con-test Analytical Laboratory for analysis for VOC via EPA method TO-14.

#### **Soil Gas Laboratory Results**

Sub-slab soil gas samples were collected on March 20, 2013 from the influent to each sub-slab ventilation system. The samples were collected in Tedlar bags and submitted to Con-Test Analytical Laboratories for analysis by method TO-14. Results of the analysis are summarized in Table 2, and the laboratory report is provided in Attachment C.

The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) are provided in Table 2 for comparison purposes even though they are not directly applicable to soil gas, because it does not represent exposure point concentrations. The PELs are the average concentrations that OSHA allows to be present in a workplace without any respiratory protection or exposure controls. The concentrations detected in soil gas were well below the OSHA PELs.

Results were also compared to the Connecticut Department of Environmental Protection (CTDEP) Residential Volatilization Criteria for Soil Vapor. These criteria are intended to be protective for occupants of residential dwellings. Site concentrations were well below the CTDEP criteria.

#### **INDOOR AIR MONITORING**

Indoor air monitoring was conducted on December 14, 2012 using a Landtec GEM 2000 Plus meter (methane, hydrogen sulfide, oxygen), a Mini Rae photoionization detector (organic vapors), and a Fluke 975 Airmeter (carbon dioxide, carbon monoxide). School was in session during the monitoring event.

Results of monitoring are provided in the Table 3. Carbon dioxide measurements were made with a Fluke 975 Airmeter indoor air quality meter. The Fluke 975 has a range of 0 to 5,000 ppm, with a resolution of 1 ppm.

The outside temperature on March 20, 2013 was 39.5 °F. Carbon dioxide was measured outside in the school parking lot at 523 ppm.

All readings were below the RAWP Action Levels. Methane, carbon monoxide, hydrogen sulfide, and organic vapors were not detected, and carbon dioxide was within the expected range for an occupied building.

Concentrations of carbon dioxide inside occupied buildings are expected to be higher than the concentrations in outdoor air because the building occupants expel carbon dioxide. Therefore, in indoor air, the concentration of carbon dioxide is typically used as an indicator of the effectiveness of the heating, ventilating, and air conditioning (HVAC) system in circulating outdoor air into the building. The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) have prepared ASHRAE Standard 62.1-2007 titled *Ventilation for Acceptable Indoor Air Quality*. The purpose of the Standard is to specify minimum ventilation rates and other measures to provide indoor air quality that is acceptable to human occupants and that minimize adverse health effects. A discussion regarding carbon dioxide concentrations in indoor air contained in Informative Appendix C of the Standard states: "... maintaining a steady-state CO<sub>2</sub> concentration in a space of no greater than about 700 ppm above outdoor air levels will indicate that a substantial majority of visitors entering a space will be satisfied with respect to human bioeffluents (body odor)." This is the basis for ASHRAE's recommendations for concentrations of carbon dioxide in indoor air. The average concentrations measured inside the site buildings were less than 700 ppm above the ambient outdoor concentrations.

The Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) for carbon dioxide in the workplace is 5,000 ppm. All readings were below this concentration.

The control panels for the methane monitors at both schools were inspected on February 28, 2013. The methane monitor control panels had stickers that indicated that the monitors were calibrated by Diamond Technical Services within the month prior to the inspection. Diamond Technical Services calibrates the sensors on a monthly basis.

Calibration Certificates from Diamond Calibration indicate that many of the sensors read above 0 when calibrated to the zero gas. This prevents the sensors from giving a fault alarm if the reading drops below zero due to a sudden temperature change, and still provides a conservative measure of protection because the alarm limit does not change.

## **GROUNDWATER MONITORING**

The groundwater monitoring wells were sampled by ARCADIS on March 21, 2013. Prior to sampling, the depth to water was gauged, and a volume of water equivalent to approximately three well volumes was removed from the well. Groundwater samples were collected in laboratory prepared sample jars and delivered under chain-of-custody protocol to Contest Laboratory in East Longmeadow, Massachusetts for analysis for volatile organic compounds by EPA method 8260. The laboratory report is provided as Attachment C. Results of analysis of groundwater samples are summarized in Table 4.

The only target analyte detected in any of the wells was 1,4-dichlorobenzene which was detected in a sample collected from monitoring well ATC-4 at a concentration of 1.2 µg/L. There is no GB groundwater standard for this compound. This compound has been detected during a previous sampling event in this well at a similar concentration. No other target analytes were detected in any of the groundwater samples collected on March 21, 2013.

## **SOIL GAS MONITORING**

Soil gas monitoring was conducted at 29 locations on March 20 and March 21, 2013. The sampling was conducted by placing an air sampling gripper cap on each well and attaching a piece of tubing. A volume of air equivalent to approximately 3 well volumes was removed from each well using a Sensidyne BDXII air sampling pump. Soil gas was then screened using a Landtec GEM 2000 Plus Landfill Gas Analyzer and a MiniRae Photoionization Detector (PID).

### **Soil Gas Field Monitoring Results**

Soil gas samples were screened for methane, carbon monoxide, hydrogen sulfide, carbon dioxide, oxygen, and total VOCs. Soil gas survey results are provided in Table 5. Carbon monoxide, hydrogen sulfide, and total VOCs were not detected in any samples.

Methane was detected in soil gas in MPL-6 at a concentration of 2.3 % on March 21, 2013. The Remedial Action Work Plan Action level for methane is 0.5% and this is the only well to exceed this action level. Jeffery Crawford of RI-DEM and Allen Sepe of Providence Schools were notified, per the requirements of the RAWP. MPL-6 is located on the north end of the property, adjacent to Hartford Avenue and the driveway into the Middle School parking lot. This location was historically affected by a natural gas leak in Hartford Avenue. MPL-6 was subsequently screened on March 22, March 28, and April 4. Results of these monitoring events are summarized below:

Date	Methane Concentration (%)
<b>RAWP action Level</b>	<b>0.5</b>
March 21, 2013	2.3
March 22, 2013	1.7
March 28, 2013	0.8
April 4, 2013	0.4

Based on the observed decline in methane concentration this appears to be a transient event, possibly associated with a natural gas leak.

Carbon dioxide was detected in soil gas at concentrations ranging from 0.1% to 8.8% during the March monitoring event. The carbon dioxide Remedial Action Work Plan Action Level is 0.1% and 26 readings exceeded the action level. The maximum concentration detected during the March 2013 monitoring round was 8.8%, which was lower than the maximum detected during the December 2012 round of 9.4%. This is consistent with the pattern shown during previous rounds of declining carbon dioxide concentrations in the winter, and increasing concentrations in the summer and early fall. Graphs presenting carbon dioxide, oxygen, and methane concentrations over time for selected representative wells are presented in Attachment D.

The presence of carbon dioxide in soil gas is an indicator of subsurface bacterial activity and does not represent a threat to users of the property. The highest concentration of carbon dioxide was found in well MPL-6, located on the northern end of the property near Hartford Avenue. The monitoring locations on the northern end of the property adjacent to large expanses of paved parking lot, sidewalk, and streets have typically had the highest carbon dioxide concentrations.

### **SUB SLAB VENTILATION SYSTEM VACUUM MEASUREMENTS**

Annual monitoring of the monitoring of vacuum produced by the sub slab ventilation system, as required by the August 17, 2012 letter issued subsequent to the Five Year Review, was conducted during this round of monitoring. Vacuum was measured at soil gas points around the school using a digital manometer on April 10, 2013. An Area of Vacuum Influence map is provided in Figure 1. Vacuum measurements collected from points around the school building showed a consistent vacuum, indicating that the sub slab ventilation system is producing adequate vacuum.

### **ANNUAL ELUR INSPECTIONS**

After the Five Year Review of the Site was completed, RIDEM issued a letter dated August 17, 2012 which requires, among other things, that annual inspections be conducted for compliance with the Environmental Land Usage Restriction (ELUR). The Annual ELUR inspection was conducted during the November 2012 monitoring round.

### **CONCLUSIONS**

Methane was detected above the RAWP action levels on March 21, 2013 in MPL-6. The well was subsequently monitored for the following two weeks and the methane levels dropped below the action level. This detection of methane appears to be a transitory event and will be reassessed during the next monitoring round.

Hydrogen sulfide, carbon monoxide and organic vapor concentrations did not exceed RAWP action levels in any soil gas or indoor air samples. Carbon dioxide concentrations exceeded the action level at soil gas locations and sub slab system monitoring points. The detection of carbon dioxide in soil gas is typical of what has been detected during previous monitoring events and appears to be a result of naturally occurring bacterial activity in the subsurface.

If you have any questions or require any additional information, please contact the undersigned at 401-738-3887, extension 25.

Sincerely,

ARCADIS U.S., Inc.

A handwritten signature in black ink, appearing to read "Donna H. Pallister". The signature is fluid and cursive, with the first name "Donna" being the most prominent.

Donna H. Pallister, PE, LSP  
Senior Environmental Engineer

Copies:

A. Sepe, City of Providence  
Providence Public Building Authority

**Figure**

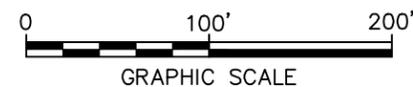
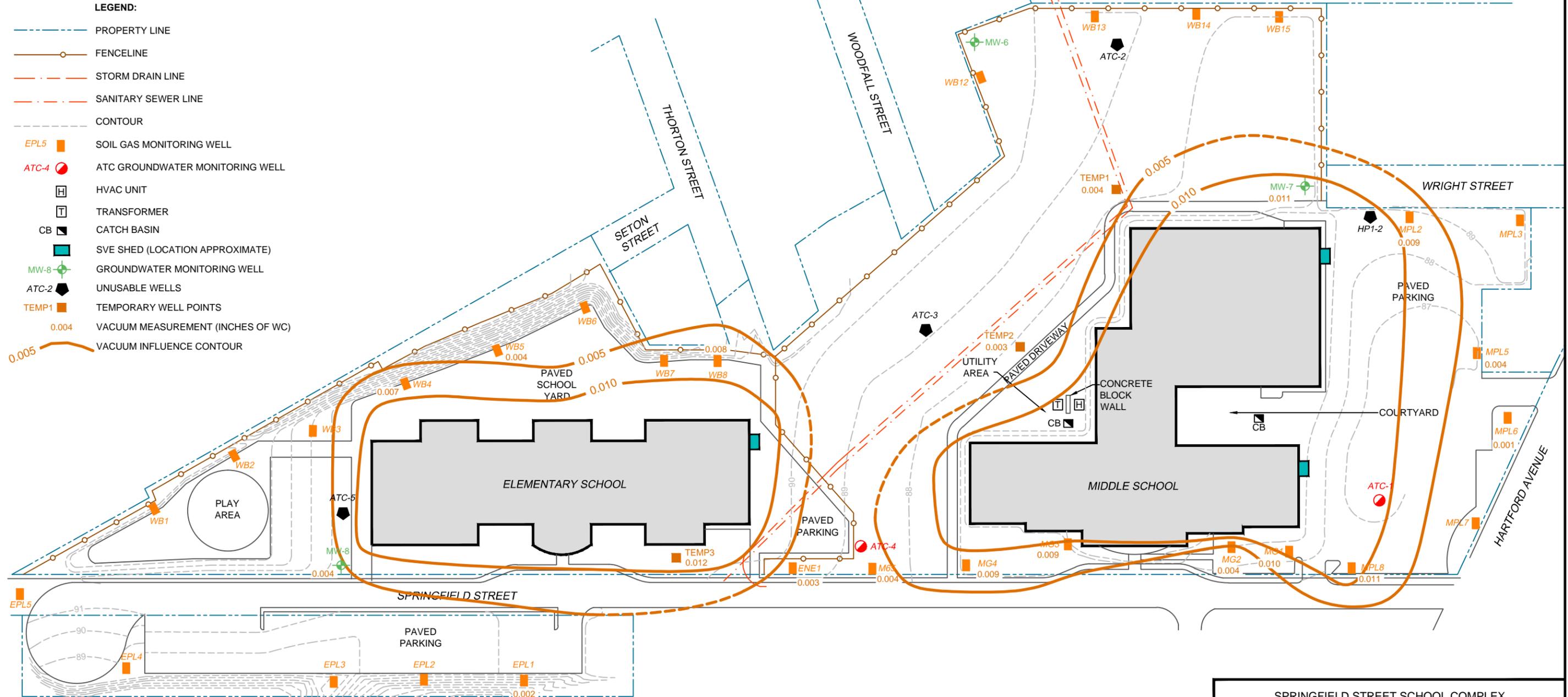
**NOTES:**

THE FOLLOWING MAP IS REFERENCED: ELEMENTARY & MIDDLE SCHOOLS, PROVIDENCE RHODE ISLAND, ISSUED FOR, CITY OF PROVIDENCE, GRADING AND SAMPLING LOCATION PLAN, PREPARED BY NORTHEAST ENGINEERS & CONSULTANTS, INC., DATED MAY 19, 1999, SCALE: 1"=50'.

THIS MAP HAS BEEN DIGITIZED FROM THE ABOVE REFERENCED MAP, AND SCALE IS APPROXIMATE. FOR USE WITH LFR REPORT ONLY.



- LEGEND:**
- PROPERTY LINE
  - FENCELINE
  - STORM DRAIN LINE
  - SANITARY SEWER LINE
  - CONTOUR
  - EPL5 SOIL GAS MONITORING WELL
  - ATC-4 ATC GROUNDWATER MONITORING WELL
  - HVAC UNIT
  - TRANSFORMER
  - CATCH BASIN
  - SVE SHED (LOCATION APPROXIMATE)
  - MW-8 GROUNDWATER MONITORING WELL
  - ATC-2 UNUSABLE WELLS
  - TEMP1 TEMPORARY WELL POINTS
  - 0.004 VACUUM MEASUREMENT (INCHES OF WC)
  - 0.005 VACUUM INFLUENCE CONTOUR



SPRINGFIELD STREET SCHOOL COMPLEX  
SPRINGFIELD STREET  
PROVIDENCE, RHODE ISLAND

**AREA OF VACUUM INFLUENCE**



FIGURE  
**1**

ARCADIS

**Tables**

**Table 1**  
**System Monitoring Notes**  
**Springfield Street School Complex**  
**Providence, Rhode Island**  
**March 20, 2013**

Monitoring Location	Methane % by volume Landtec	Carbon Dioxide % by volume	Oxygen % by volume	Carbon Monoxide PPM	Hydrogen Sulfide PPM	Organic Vapors PPM
Elementary School inlet 1	0.0	0.1	21.0	0	0	0.0
Elementary School inlet 2	0.0	0.1	20.8	0	0	0.0
Elementary School Outlet	0.0	0.1	21.2	0	0	0.0
Middle School front shed inlet	0.0	0.0	21.4	0	0	0.0
Middle School front shed after 2 <sup>nd</sup> carbon	0.0	0.1	21.7	0	0	0.0
Middle School back shed inlet	0.0	0.1	21.9	0	0	0.0
Middle School back shed after 2 <sup>nd</sup> carbon	0.0	0.1	21.9	0	0	0.0
<b>Remedial Action Work Plan Action Levels</b>	<b>0.5</b>	<b>1,000 ppm (0.1%)</b>	<b>NA</b>	<b>9 ppm</b>	<b>10 ppm</b>	<b>5 ppm</b>

**Measurements made with:** Landtec GEM2000 Plus, MiniRae 2000

**Sampling date:** March 20, 2013

**Measured by:** Donna Pallister, Andrew DaSilva

Table 2  
Soil Gas Samples Collected from System Influent  
Springfield Street School Complex

Parameter	Sample Date	CT DEP Proposed Residential Volatilization Criteria For Soil Vapor (ug/m3)*	OSHA PEL's (ug/m3)	Middle School Back (ug/m3)	Middle School Front (ug/m3)	Elementary School #1 (ug/m3)	Elementary School # 2 (ug/m3)
Benzene	8/23/2012	3,247	3,000	0.87	1	0.7	0.7
	1/4/2013			0.2	0.26	0.37	0.33
	3/20/2013			ND	0.44	0.57	0.54
Carbon Tetrachloride	8/23/2012	6,395	62,900	ND	ND	0.65	ND
	1/4/2013			ND	ND	ND	ND
	3/20/2013			ND	ND	ND	ND
Chloroform	8/23/2012	22,334	240,000	ND	ND	1.7	1.7
	1/4/2013			0.26	ND	0.51	0.58
	3/20/2013			ND	ND	0.60	0.6
Chloromethane	8/23/2012	NA	207,000	ND	2	ND	ND
	1/4/2013			0.18	0.23	ND	ND
	3/20/2013			ND	ND	ND	ND
1,4-Dichlorobenzene	8/23/2012	5,805,840	450,000	1.9	ND	1.9	ND
	1/4/2013			ND	ND	ND	ND
	3/20/2013			ND	ND	ND	ND
Dichlorodifluoromethane (Freon 12)	8/23/2012	NA	4,950,000	7	2.3	11	6.6
	1/4/2013			2.6	1.7	2.6	3.5
	3/20/2013			3.2	2.6	3	3
trans- 1,3- Dichloropropene	8/23/2012	4,613	5,000	ND	ND	ND	0.61
	1/4/2013			ND	ND	ND	ND
	3/20/2013			ND	ND	ND	ND
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	8/23/2012	NA	7,000,000	17	0.78	20	2
	1/4/2013			2.7	1.3	1.7	0.83
	3/20/2013			6.4	1.7	1.2	1.2
Ethylbenzene	8/23/2012	7,281,812	435,000	0.49	ND	0.49	ND
	1/4/2013			1.2	1.3	1.6	1
	3/20/2013			3.0	2.1	2.4	2
Methylene Chloride	8/23/2012	4,237,289	86,750	19	52	18	46
	1/4/2013			5.8	6.8	10	5.9
	3/20/2013			55	33	29	36
Styrene	8/23/2012	34,633	456,000	27	6.6	28	6.7
	1/4/2013			6.8	7.4	7.2	5.3
	3/20/2013			6.8	7.1	9.7	9.2
Tetrachloroethylene	8/23/2012	75,840	678,000	1.4	ND	29	3.6
	1/4/2013			2.9	3.1	8.6	3.3
	3/20/2013			8.9	5.7	5.5	7.7
Toluene	8/23/2012	2,910,779	750,000	280	150	300	140
	1/4/2013			31	41	44	25
	3/20/2013			45	32	50	48
Trichloroethylene	8/23/2012	38,237	537,000	ND	ND	4.5	0.63
	1/4/2013			1	1.3	3.7	1.3
	3/20/2013			7	3.1	2.9	3.9
Trichlorofluoromethane (Freon 11)	8/23/2012	NA	5,600,000	8.5	8	17	14
	1/4/2013			1.6	1.1	1.2	0.18
	3/20/2013			3	2.1	2	1.9
M/p-Xylene	8/23/2012	2,215,755#	435,000	1.2	0.9	1.1	ND
	1/4/2013			6	6.3	7.1	4.3
	3/20/2013			11	8.7	9.7	8.1
o-Xylene	8/23/2012	2,215,755#	435,000	0.45	ND	0.45	ND
	1/4/2013			1.3	1.40	1.40	0.88
	3/20/2013			3.5	2.8	3.2	2.70

Notes:  
Samples collected in Tedlar bags and analyzed via EPA method TO-14  
Only detected compounds are listed, see laboratory certificate for complete list of analyses  
OSHA PEL's = Occupational Safety and Health Administration Permissible Exposure Limits  
CT DEP= Connecticut Department of Environmental Protection  
ug/m3 = micrograms per cubic meter  
\* From Appendix F to Sections 22a-133k-1 through 22a-133k-3 of the Regulations of Connecticut State Agencies  
#- Represents Total Xylenes

**Table 3**  
**Indoor Air Monitoring Results**  
**Springfield Street School Complex**  
**Providence, Rhode Island**  
**March 20, 2013**

<b>Monitoring Location</b>	<b>Methane as % LEL</b>	<b>Carbon Dioxide PPM</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
<b>E.S. Front office</b>	0.0	663	21.9	0	0	0.0
<b>E.S. Elevator</b>	0.0	578	21.8	0	0	0.0
<b>E.S. Faculty Work Room</b>	0.0	778	21.6	0	0	0.0
<b>E.S. Gym</b>	0.0	683	21.5	0	0	0.0
<b>E.S. Stairway B</b>	0.0	898	21.6	0	0	0.0
<b>E.S. Stairway C</b>	0.0	687	21.4	0	0	0.0
<b>E.S. Library</b>	0.0	719	21.4	0	0	0.0
<b>E.S. Room 111 Music/Art Room</b>	0.0	665	21.3	0	0	0.0
<b>E.S. Cafeteria</b>	0.0	769	21.5	0	0	0.0
<b>E.S. Room 107</b>	0.0	660	21.3	0	0	0.0

**Table 3**  
**Indoor Air Monitoring Notes**  
**Springfield Street School Complex**  
**March 20, 2013**

<b>Monitoring Location</b>	<b>Methane as % LEL</b>	<b>Carbon Dioxide PPM</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
<b>M.S. Front Office</b>	0.0	671	21.0	0	0	0.0
<b>M.S. Elevator</b>	0.0	764	21.2	0	0	0.0
<b>M.S. Stairway near Elem. School GS-01</b>	0.0	705	21.2	0	0	0.0
<b>M.S. Near sensor #16 in hall outside cafeteria</b>	0.0	587	21.2	0	0	0.0
<b>M.S. Faculty Work Room</b>	0.0	714	20.7	0	0	0.0
<b>M.S. Sensor #15 Outside Gym</b>	0.0	666	21.2	0	0	0.0
<b>M.S. GS-03 Across from Boys Bathroom</b>	0.0	667	21.2	0	0	0.0
<b>M.S. Second Floor - Library</b>	0.0	733	21.2	0	0	0.0
<b>M.S. Cafeteria</b>	0.0	714	21.2	0	0	0.0

**Table 3**  
**Indoor Air Monitoring Notes**  
**Springfield Street School Complex**  
**March 20, 2013**

<b>Monitoring Location</b>	<b>Methane as % LEL</b>	<b>Carbon Dioxide PPM</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
<b>M.S.</b> Front Hall near sensor #4	0.0	674	21.2	0	0	0.0
<b>M.S.</b> Hallway across from elevator near sensor #9	0.0	704	21.1	0	0	0.0
<b>M.S.</b> Near sensor GS 06 hallway right end	0.0	687	21.2	0	0	0.0
<b>M.S.</b> stairway near Hartford Ave. sensor GS-7	0.0	703	21.2	0	0	0.0
<b>Remedial Action Work Plan Action Levels</b>	<b>0.05</b>	<b>1,000 ppm (0.1%)</b>	<b>NA</b>	<b>9 ppm</b>	<b>5 ppm</b>	<b>5 ppm</b>

**Notes:**

**E.S.** indicates Elementary School, **M.S.** indicates Middle School

Measurements made with: MiniRae photoionization detector, Fluke 975 Airmeter, Landtec Gem 2000 Plus

PPM = Parts per million

Outdoor conditions: carbon dioxide = 523 ppm temperature = 39.5 F

**Table 4**  
**Groundwater Monitoring Results**  
**Springfield Street School**  
**Providence, Rhode Island**

Well	Detected Compounds	Sampling Dates and Results in µg/L															
		2/28/2001	7/20/2001	*9- 12/2001	8/1/2002	8/28/2002	12/19/2002	3/18/2003	7/17/2003	11/5/2003	1/22/2004	5/21/2004	8/17/2004	12/2/2004	4/6/2005	7/27/2005	10/27&28/2005
ATC-1	Benzene	6.1	ND	18.9	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	n-butylbenzene	1.7	ND	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	sec-Butylbenzene	1.1	ND	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Ethylbenzene	4.5	ND	12.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Isopropylbenzene	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	n-Propylbenzene	ND	ND	5.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	MTBE	12.4	7.0	28.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Trichloroethylene	ND	ND	ND	ND	ND	ND	ND	1.27	ND	ND	ND	ND	ND	1.10	ND	ND
	Toluene	2.5	ND	8.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1,2,4-Trimethylbenzene	2.2	ND	8.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1,3,5-Trimethylbenzene	3.4	ND	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Xylenes	14.6	ND	37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ATC-2	Chloroform	0.9	ND	ND	1.0	ND	ND	ND	ND	ND	NS	1.1	1.0	ND	ND	ND	ND
MW-6	Chloroform																
	Installed 4/2011																
ATC-3	Toluene	ND	ND	ND	ND	NS	ND	ND	ND	ND	3.03	ND	ND	ND	ND	ND	ND
MW-7																	
	Installed 4/2011																
ATC-4	Benzene	ND	ND	2.5	0.6	ND	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	ND
	Chlorobenzene	2.6	ND	57.3	2.7	5.18	ND	ND	ND	ND	ND	ND	ND	0.60	ND	ND	ND
	1,4-dichlorobenzene	4.2	ND	9.2	3.4	3.36	ND	ND	ND	ND	ND	0.80	1.6	2.1	ND	ND	ND
	MTBE	ND	ND	ND	ND	ND	ND	ND	1.19	9.55	1.06	2.90	0.6	ND	ND	ND	ND
	1,2,4-Trimethylbenzene	ND	ND	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	tert-Amyl Methyl Ether (TAME)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Trichloroethylene																
ATC-5	MTBE	ND	ND	2.2	NS	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	ND	ND
	Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	NS	ND	ND	0.6	ND	ND	ND	ND
MW-8																	
	Installed 4/2011																
	Sampled By:	ATC	ATC	ATC	ATC	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR

\*ATC Monitoring Report for September through December 2001 did not list date samples were collected.

ND is not detected above method detection limit

NS is not sampled

NA= No applicable standard published

MTBE is Methyl tert-Butyl Ether

µg/L = micrograms per liter

**Table 4**  
**Groundwater Monitoring Results**  
**Springfield Street School**  
**Providence, Rhode Island**

Well	Detected Compounds	Sampling Dates and Results in ug/L																
		2/2/2006	4/27/2006	8/31/2006	11/15/2006	3/27/2007	5/21/2007	8/20/2007	11/13/2007	2/12/2008	5/21/2008	8/26/2008	11/18/2008	2/17/2009	5/7/2009	8/25/2009	11/18/2009	3/1/2010
ATC-1	Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	n-butylbenzene	ND	ND	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	tert-Butylbenzene	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	MTBE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND
	Trichloroethylene	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1,1,2-Trichloroethane	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ATC-2	Chloroform	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	Chloroform																	
	Installed 4/2011																	
ATC-3	Toluene	3.0	ND	4.5	13.1	ND	2.3	1.3	ND	ND	NS	NS	NS	NS	NS	NS	NS	NS
MW-7																		
	Installed 4/2011																	
ATC-4	Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Chlorobenzene	ND	ND	ND	ND	ND	ND	1.80	1.90	ND	ND	1.2	ND	ND	ND	1	ND	ND
	1,4-dichlorobenzene	ND	ND	1.2	1.1	ND	1.2	2.1	2.1	ND	ND	2.1	1.4	ND	1.7	1.5	ND	ND
	MTBE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	tert-Amyl Methyl Ether (TAME)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Trichloroethylene													ND	ND	ND	ND	ND
ATC-5	MTBE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-8																		
	Installed 4/2011																	
	Sampled By:	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	LFR	ARCADIS

\*ATC Monitoring Report for Septemb  
 ND is not detected above method det  
 NS is not sampled  
 NA= No applicable standard publishe  
 MTBE is Methyl tert-Butyl Ether  
 ug/L = micrograms per liter

**Table 4**  
**Groundwater Monitoring Results**  
**Springfield Street School**  
**Providence, Rhode Island**

Well	Detected Compounds	Sampling Dates and Results in ug/L												RIDEM GB Groundwater Objective
		5/20/2010	8/25/2010	11/19/2010	2/24/2011	6/16/2011	10/3/2011	12/6/2011	3/15/2012	5/29/2012	8/21/2012	12/19/2012	3/21/2013	
ATC-1	Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140
	n-butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1600
	Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	n-Propylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	MTBE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5000
	Trichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	540
	Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1700
	1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
ATC-2	Chloroform	NS	NS	NS	NS	Closed 4/2011	NA							
MW-6	Chloroform					ND	2.0	ND	ND	ND	2.2	ND	ND	NA
	Installed 4/2011													
ATC-3	Toluene	NS	NS	NS	NS	Closed 4/2011	1700							
MW-7						ND	NA							
	Installed 4/2011													
ATC-4	Benzene	ND	ND	ND	NS	NS	ND	140						
	Chlorobenzene	ND	ND	ND	NS	NS	ND	70						
	1,4-dichlorobenzene	ND	ND	1.5	NS	NS	ND	ND	ND	1.9	ND	2.1	1.2	NA
	MTBE	ND	ND	ND	NS	NS	ND	5000						
	1,2,4-Trimethylbenzene	ND	ND	ND	NS	NS	ND	NA						
	tert-Amyl Methyl Ether (TAME)	ND	0.5	ND	NS	NS	ND	NA						
	Trichloroethylene	ND	ND	ND	NS	NS	1.1	1.3	ND	ND	ND	ND	ND	540
ATC-5	MTBE	ND	NS	NS	NS	Closed 4/2011	5000							
	Chloroform	ND	NS	NS	NS	Closed 4/2011	NA							
MW-8						ND	NA							
	Installed 4/2011													
	Sampled By:	ARCADIS	ARCADIS	ARCADIS	ARCADIS	ARCADIS	ARCADIS	ARCADIS	ARCADIS	ARCADIS	ARCADIS	ARCADIS	ARCADIS	NA

\*ATC Monitoring Report for Septemb  
 ND is not detected above method det  
 NS is not sampled  
 NA= No applicable standard publishe  
 MTBE is Methyl tert-Butyl Ether  
 ug/L = micrograms per liter

**Table 5**  
**Soil Gas Survey Field Notes**  
**Springfield Street School Complex**  
**Providence, Rhode Island**  
**March 21, 2013**

<b>Monitoring Well</b>	<b>Methane % by volume</b>	<b>Carbon Dioxide % by volume</b>	<b>Oxygen % by volume</b>	<b>Carbon Monoxide PPM</b>	<b>Hydrogen Sulfide PPM</b>	<b>Organic Vapors PPM</b>
WB-1	0.0	1.2	20.2	0	0	0.0
WB-2	0.0	0.2	21.1	0	0	0.0
WB-3	0.0	0.0	21.6	0	0	0.0
WB-4	0.0	0.0	21.7	0	0	0.0
WB-5	0.0	0.1	21.6	0	0	0.0
WB-6	0.0	0.1	21.6	0	0	0.0
WB-7 R	0.0	0.2	21.8	0	0	0.0
WB-8	0.0	0.4	21.5	0	0	0.0
WB-12	0.0	0.8	20.8	0	0	0.0
WB-13	0.0	0.0	21.4	0	0	0.0
WB-14	0.0	0.4	20.9	0	0	0.0
WB-15	0.0	0.1	21.5	0	0	0.0
EPL-1	0.0	0.2	20.5	0	0	0.0
EPL-2	0.0	0.1	20.8	0	0	0.0
EPL-3	0.0	0.5	20.7	0	0	0.0
EPL-4	0.0	1.3	18.9	0	0	0.0
EPL-5	0.0	1.6	19.4	0	0	0.0
ENE-1	0.0	1.8	18.9	0	0	0.0

**Table 5**  
**Soil Gas Survey Field Notes**  
**Springfield Street School Complex**  
**Providence, Rhode Island**  
**March 21, 2013**

Monitoring Well	Methane % by volume	Carbon Dioxide % by volume	Oxygen % by volume	Carbon Monoxide PPM	Hydrogen Sulfide PPM	Organic Vapors PPM
MG1	0.0	4.1	16.3	0	0	0.0
MG2	0.0	2.5	19.7	0	0	0.0
MG3	0.0	0.1	20.8	0	0	0.0
MG4	0.0	0.8	20.1	0	0	0.0
MG5	0.0	0.8	20.4	0	0	0.0
MPL2	0.0	2.1	18.6	0	0	0.0
MPL3	0.0	2.4	18.1	0	0	0.0
MPL5	0.0	4.7	15.8	0	0	0.0
MPL6	2.3	8.8	0.8	0	0	0.0
MPL7	0.0	8.6	2.3	0	0	0.0
MPL8	0.0	2.0	19.8	0	0	0.0
<b>Remedial Action Work Plan Action Levels</b>	<b>0.5%</b>	<b>0.1% (1,000 PPM)</b>	<b>NA</b>	<b>9 PPM</b>	<b>10 PPM</b>	<b>5 PPM</b>

**Sampled by: Andrew DaSilva**

**Weather Conditions:** Sunny/Overcast , 40 degrees F

**Sampling Equipment:** Landtec GEM 2000 Plus, MiniRae 2000 PID

**Appendix A**  
**Limitations & Service Constraints**

## **LIMITATIONS AND SERVICE CONSTRAINTS**

### **GENERAL REPORTS/DOCUMENT**

The opinions and recommendations presented in this report are based upon the scope of services, information obtained through the performance of the services, and the schedule as agreed upon by ARCADIS and the party for whom this report was originally prepared. This report is an instrument of professional service and was prepared in accordance with the generally accepted standards and level of skill and care under similar conditions and circumstances established by the environmental consulting industry. No representation, warranty, or guarantee, express or implied, is intended or given. To the extent that ARCADIS relied upon any information prepared by other parties not under contract to ARCADIS, ARCADIS makes no representation as to the accuracy or completeness of such information. This report is expressly for the sole and exclusive use of the party for whom this report was originally prepared for a particular purpose. Only the party for whom this report was originally prepared and/or other specifically named parties have the right to make use of and rely upon this report. Reuse of this report or any portion thereof for other than its intended purpose, or if modified, or if used by third parties, shall be at the user's sole risk.

Results of any investigations or testing and any findings presented in this report apply solely to conditions existing at the time when ARCADIS' investigative work was performed. It must be recognized that any such investigative or testing activities are inherently limited and do not represent a conclusive or complete characterization. Conditions in other parts of the project site may vary from those at the locations where data were collected. ARCADIS's ability to interpret investigation results is related to the availability of the data and the extent of the investigation activities. As such, 100% confidence in environmental investigation conclusions cannot reasonably be achieved.

ARCADIS, therefore, does not provide any guarantees, certifications, or warranties regarding any conclusions regarding environmental contamination of any such property. Furthermore, nothing contained in this document shall relieve any other party of its responsibility to abide by contract documents and applicable laws, codes, regulations, or standards.

**Appendix B**  
**Laboratory Results**

March 28, 2013

Donna Pallister  
Arcadis US, Inc. - Warwick, RI  
300 Metro Center Blvd., Suite 250  
Warwick, RI 02886

Project Location: Springfield St., Providence  
Client Job Number:  
Project Number: WK012152.0008  
Laboratory Work Order Number: 13C0669

Enclosed are results of analyses for samples received by the laboratory on March 21, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Lisa A. Worthington  
Project Manager

Arcadis US, Inc. - Warwick, RI  
300 Metro Center Blvd., Suite 250  
Warwick, RI 02886  
ATTN: Donna Pallister

REPORT DATE: 3/28/2013

PURCHASE ORDER NUMBER: 5131

PROJECT NUMBER: WK012152.0008

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 13C0669

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

PROJECT LOCATION: Springfield St., Providence

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MS Front	13C0669-01	Sub Slab		EPA TO-14A	
MS Back	13C0669-02	Sub Slab		EPA TO-14A	
ES Blower #1	13C0669-03	Sub Slab		EPA TO-14A	
ES Blower #2	13C0669-04	Sub Slab		EPA TO-14A	

**CASE NARRATIVE SUMMARY**

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

**EPA TO-14A**

**Qualifications:**

---

Holding times and stability of samples taken in tedlar bags have not been determined

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

13C0669-01[MS Front], 13C0669-02[MS Back], 13C0669-03[ES Blower #1], 13C0669-04[ES Blower #2]

---

Elevated method reporting limit due to insufficient sample volume

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

13C0669-02[MS Back]

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The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Daren J. Damboragian  
Laboratory Manager

**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 3/21/2013  
**Field Sample #: MS Front**  
**Sample ID: 13C0669-01**  
 Sample Matrix: Sub Slab  
 Sampled: 3/20/2013 09:55

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13C0669**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Benzene	0.14	0.10		0.44	0.32	2	3/23/13 14:19	WSD	
Bromomethane	ND	0.10		ND	0.39	2	3/23/13 14:19	WSD	
Carbon Tetrachloride	ND	0.10		ND	0.63	2	3/23/13 14:19	WSD	
Chlorobenzene	ND	0.10		ND	0.46	2	3/23/13 14:19	WSD	
Chloroethane	ND	0.10		ND	0.26	2	3/23/13 14:19	WSD	
Chloroform	ND	0.10		ND	0.49	2	3/23/13 14:19	WSD	
Chloromethane	ND	0.40		ND	0.83	2	3/23/13 14:19	WSD	
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	3/23/13 14:19	WSD	
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	3/23/13 14:19	WSD	
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	3/23/13 14:19	WSD	
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	3/23/13 14:19	WSD	
Dichlorodifluoromethane (Freon 12)	0.53	0.10		2.6	0.49	2	3/23/13 14:19	WSD	
1,1-Dichloroethane	ND	0.10		ND	0.40	2	3/23/13 14:19	WSD	
1,2-Dichloroethane	ND	0.10		ND	0.40	2	3/23/13 14:19	WSD	
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	3/23/13 14:19	WSD	
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/23/13 14:19	WSD	
1,2-Dichloropropane	ND	0.10		ND	0.46	2	3/23/13 14:19	WSD	
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/23/13 14:19	WSD	
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/23/13 14:19	WSD	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	0.25	0.10		1.7	0.70	2	3/23/13 14:19	WSD	
Ethylbenzene	0.48	0.10		2.1	0.43	2	3/23/13 14:19	WSD	
Hexachlorobutadiene	ND	0.10		ND	1.1	2	3/23/13 14:19	WSD	
Methylene Chloride	9.4	1.0		33	3.5	2	3/23/13 14:19	WSD	
Styrene	1.7	0.10		7.1	0.43	2	3/23/13 14:19	WSD	
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	3/23/13 14:19	WSD	
Tetrachloroethylene	0.83	0.10		5.7	0.68	2	3/23/13 14:19	WSD	
Toluene	8.4	0.10		32	0.38	2	3/23/13 14:19	WSD	
1,2,4-Trichlorobenzene	ND	0.20		ND	1.5	2	3/23/13 14:19	WSD	
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	3/23/13 14:19	WSD	
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	3/23/13 14:19	WSD	
Trichloroethylene	0.58	0.10		3.1	0.54	2	3/23/13 14:19	WSD	
Trichlorofluoromethane (Freon 11)	0.37	0.10		2.1	0.56	2	3/23/13 14:19	WSD	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.10		ND	0.77	2	3/23/13 14:19	WSD	
1,2,4-Trimethylbenzene	ND	0.10		ND	0.49	2	3/23/13 14:19	WSD	
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	3/23/13 14:19	WSD	
Vinyl Chloride	ND	0.10		ND	0.26	2	3/23/13 14:19	WSD	
m&p-Xylene	2.0	0.20		8.7	0.87	2	3/23/13 14:19	WSD	

**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 3/21/2013  
**Field Sample #: MS Front**  
**Sample ID: 13C0669-01**  
 Sample Matrix: Sub Slab  
 Sampled: 3/20/2013 09:55

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13C0669**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
o-Xylene	0.65	0.10		2.8	0.43	2	3/23/13	14:19	WSD

Surrogates	% Recovery		% REC Limits		Date/Time
4-Bromofluorobenzene (1)	88.8		70-130		3/23/13 14:19

**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 3/21/2013  
**Field Sample #: MS Back**  
**Sample ID: 13C0669-02**  
 Sample Matrix: Sub Slab  
 Sampled: 3/20/2013 10:10

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13C0669**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09, DL-02

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Benzene	ND	0.50		ND	1.6	10	3/23/13	9:42	WSD
Bromomethane	ND	0.50		ND	1.9	10	3/23/13	9:42	WSD
Carbon Tetrachloride	ND	0.50		ND	3.1	10	3/23/13	9:42	WSD
Chlorobenzene	ND	0.50		ND	2.3	10	3/23/13	9:42	WSD
Chloroethane	ND	0.50		ND	1.3	10	3/23/13	9:42	WSD
Chloroform	ND	0.50		ND	2.4	10	3/23/13	9:42	WSD
Chloromethane	ND	2.0		ND	4.1	10	3/23/13	9:42	WSD
1,2-Dibromoethane (EDB)	ND	0.50		ND	3.8	10	3/23/13	9:42	WSD
1,2-Dichlorobenzene	ND	0.50		ND	3.0	10	3/23/13	9:42	WSD
1,3-Dichlorobenzene	ND	0.50		ND	3.0	10	3/23/13	9:42	WSD
1,4-Dichlorobenzene	ND	0.50		ND	3.0	10	3/23/13	9:42	WSD
Dichlorodifluoromethane (Freon 12)	0.64	0.50		3.2	2.5	10	3/23/13	9:42	WSD
1,1-Dichloroethane	ND	0.50		ND	2.0	10	3/23/13	9:42	WSD
1,2-Dichloroethane	ND	0.50		ND	2.0	10	3/23/13	9:42	WSD
1,1-Dichloroethylene	ND	0.50		ND	2.0	10	3/23/13	9:42	WSD
cis-1,2-Dichloroethylene	ND	0.50		ND	2.0	10	3/23/13	9:42	WSD
1,2-Dichloropropane	ND	0.50		ND	2.3	10	3/23/13	9:42	WSD
cis-1,3-Dichloropropene	ND	0.50		ND	2.3	10	3/23/13	9:42	WSD
trans-1,3-Dichloropropene	ND	0.50		ND	2.3	10	3/23/13	9:42	WSD
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	0.92	0.50		6.4	3.5	10	3/23/13	9:42	WSD
Ethylbenzene	0.69	0.50		3.0	2.2	10	3/23/13	9:42	WSD
Hexachlorobutadiene	ND	0.50		ND	5.3	10	3/23/13	9:42	WSD
Methylene Chloride	16	5.0		55	17	10	3/23/13	9:42	WSD
Styrene	1.6	0.50		6.8	2.1	10	3/23/13	9:42	WSD
1,1,2,2-Tetrachloroethane	ND	0.50		ND	3.4	10	3/23/13	9:42	WSD
Tetrachloroethylene	1.3	0.50		8.9	3.4	10	3/23/13	9:42	WSD
Toluene	12	0.50		45	1.9	10	3/23/13	9:42	WSD
1,2,4-Trichlorobenzene	ND	1.0		ND	7.4	10	3/23/13	9:42	WSD
1,1,1-Trichloroethane	ND	0.50		ND	2.7	10	3/23/13	9:42	WSD
1,1,2-Trichloroethane	ND	0.50		ND	2.7	10	3/23/13	9:42	WSD
Trichloroethylene	1.3	0.50		7.0	2.7	10	3/23/13	9:42	WSD
Trichlorofluoromethane (Freon 11)	0.54	0.50		3.0	2.8	10	3/23/13	9:42	WSD
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50		ND	3.8	10	3/23/13	9:42	WSD
1,2,4-Trimethylbenzene	ND	0.50		ND	2.5	10	3/23/13	9:42	WSD
1,3,5-Trimethylbenzene	ND	0.50		ND	2.5	10	3/23/13	9:42	WSD
Vinyl Chloride	ND	0.50		ND	1.3	10	3/23/13	9:42	WSD
m&p-Xylene	2.5	1.0		11	4.3	10	3/23/13	9:42	WSD

**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 3/21/2013  
**Field Sample #: MS Back**  
**Sample ID: 13C0669-02**  
 Sample Matrix: Sub Slab  
 Sampled: 3/20/2013 10:10

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13C0669**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09, DL-02

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
o-Xylene	0.80	0.50		3.5	2.2	10	3/23/13	9:42	WSD

Surrogates	% Recovery		% REC Limits		Date/Time	
4-Bromofluorobenzene (1)	87.7		70-130		3/23/13 9:42	

**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 3/21/2013  
**Field Sample #: ES Blower #1**  
**Sample ID: 13C0669-03**  
 Sample Matrix: Sub Slab  
 Sampled: 3/20/2013 11:16

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13C0669**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Benzene	0.18	0.10		0.57	0.32	2	3/23/13 15:00	WSD	
Bromomethane	ND	0.10		ND	0.39	2	3/23/13 15:00	WSD	
Carbon Tetrachloride	ND	0.10		ND	0.63	2	3/23/13 15:00	WSD	
Chlorobenzene	ND	0.10		ND	0.46	2	3/23/13 15:00	WSD	
Chloroethane	ND	0.10		ND	0.26	2	3/23/13 15:00	WSD	
Chloroform	0.12	0.10		0.60	0.49	2	3/23/13 15:00	WSD	
Chloromethane	ND	0.40		ND	0.83	2	3/23/13 15:00	WSD	
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	3/23/13 15:00	WSD	
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	3/23/13 15:00	WSD	
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	3/23/13 15:00	WSD	
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	3/23/13 15:00	WSD	
Dichlorodifluoromethane (Freon 12)	0.61	0.10		3.0	0.49	2	3/23/13 15:00	WSD	
1,1-Dichloroethane	ND	0.10		ND	0.40	2	3/23/13 15:00	WSD	
1,2-Dichloroethane	ND	0.10		ND	0.40	2	3/23/13 15:00	WSD	
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	3/23/13 15:00	WSD	
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/23/13 15:00	WSD	
1,2-Dichloropropane	ND	0.10		ND	0.46	2	3/23/13 15:00	WSD	
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/23/13 15:00	WSD	
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/23/13 15:00	WSD	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	0.17	0.10		1.2	0.70	2	3/23/13 15:00	WSD	
Ethylbenzene	0.54	0.10		2.4	0.43	2	3/23/13 15:00	WSD	
Hexachlorobutadiene	ND	0.10		ND	1.1	2	3/23/13 15:00	WSD	
Methylene Chloride	8.3	1.0		29	3.5	2	3/23/13 15:00	WSD	
Styrene	2.3	0.10		9.7	0.43	2	3/23/13 15:00	WSD	
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	3/23/13 15:00	WSD	
Tetrachloroethylene	0.81	0.10		5.5	0.68	2	3/23/13 15:00	WSD	
Toluene	13	0.10		50	0.38	2	3/23/13 15:00	WSD	
1,2,4-Trichlorobenzene	ND	0.20		ND	1.5	2	3/23/13 15:00	WSD	
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	3/23/13 15:00	WSD	
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	3/23/13 15:00	WSD	
Trichloroethylene	0.54	0.10		2.9	0.54	2	3/23/13 15:00	WSD	
Trichlorofluoromethane (Freon 11)	0.36	0.10		2.0	0.56	2	3/23/13 15:00	WSD	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.10		ND	0.77	2	3/23/13 15:00	WSD	
1,2,4-Trimethylbenzene	ND	0.10		ND	0.49	2	3/23/13 15:00	WSD	
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	3/23/13 15:00	WSD	
Vinyl Chloride	ND	0.10		ND	0.26	2	3/23/13 15:00	WSD	
m&p-Xylene	2.2	0.20		9.7	0.87	2	3/23/13 15:00	WSD	

**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 3/21/2013  
**Field Sample #: ES Blower #1**  
**Sample ID: 13C0669-03**  
 Sample Matrix: Sub Slab  
 Sampled: 3/20/2013 11:16

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13C0669**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
o-Xylene	0.74	0.10		3.2	0.43	2	3/23/13	15:00	WSD

Surrogates	% Recovery		% REC Limits		Date/Time	
4-Bromofluorobenzene (1)	88.2		70-130		3/23/13 15:00	

**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 3/21/2013  
**Field Sample #: ES Blower #2**  
**Sample ID: 13C0669-04**  
 Sample Matrix: Sub Slab  
 Sampled: 3/20/2013 11:15

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13C0669**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Benzene	0.17	0.10		0.54	0.32	2	3/23/13 15:39	WSD	
Bromomethane	ND	0.10		ND	0.39	2	3/23/13 15:39	WSD	
Carbon Tetrachloride	ND	0.10		ND	0.63	2	3/23/13 15:39	WSD	
Chlorobenzene	ND	0.10		ND	0.46	2	3/23/13 15:39	WSD	
Chloroethane	ND	0.10		ND	0.26	2	3/23/13 15:39	WSD	
Chloroform	0.12	0.10		0.60	0.49	2	3/23/13 15:39	WSD	
Chloromethane	ND	0.40		ND	0.83	2	3/23/13 15:39	WSD	
1,2-Dibromoethane (EDB)	ND	0.10		ND	0.77	2	3/23/13 15:39	WSD	
1,2-Dichlorobenzene	ND	0.10		ND	0.60	2	3/23/13 15:39	WSD	
1,3-Dichlorobenzene	ND	0.10		ND	0.60	2	3/23/13 15:39	WSD	
1,4-Dichlorobenzene	ND	0.10		ND	0.60	2	3/23/13 15:39	WSD	
Dichlorodifluoromethane (Freon 12)	0.61	0.10		3.0	0.49	2	3/23/13 15:39	WSD	
1,1-Dichloroethane	ND	0.10		ND	0.40	2	3/23/13 15:39	WSD	
1,2-Dichloroethane	ND	0.10		ND	0.40	2	3/23/13 15:39	WSD	
1,1-Dichloroethylene	ND	0.10		ND	0.40	2	3/23/13 15:39	WSD	
cis-1,2-Dichloroethylene	ND	0.10		ND	0.40	2	3/23/13 15:39	WSD	
1,2-Dichloropropane	ND	0.10		ND	0.46	2	3/23/13 15:39	WSD	
cis-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/23/13 15:39	WSD	
trans-1,3-Dichloropropene	ND	0.10		ND	0.45	2	3/23/13 15:39	WSD	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	0.18	0.10		1.2	0.70	2	3/23/13 15:39	WSD	
Ethylbenzene	0.46	0.10		2.0	0.43	2	3/23/13 15:39	WSD	
Hexachlorobutadiene	ND	0.10		ND	1.1	2	3/23/13 15:39	WSD	
Methylene Chloride	10	1.0		36	3.5	2	3/23/13 15:39	WSD	
Styrene	2.2	0.10		9.2	0.43	2	3/23/13 15:39	WSD	
1,1,2,2-Tetrachloroethane	ND	0.10		ND	0.69	2	3/23/13 15:39	WSD	
Tetrachloroethylene	1.1	0.10		7.7	0.68	2	3/23/13 15:39	WSD	
Toluene	13	0.10		48	0.38	2	3/23/13 15:39	WSD	
1,2,4-Trichlorobenzene	ND	0.20		ND	1.5	2	3/23/13 15:39	WSD	
1,1,1-Trichloroethane	ND	0.10		ND	0.55	2	3/23/13 15:39	WSD	
1,1,2-Trichloroethane	ND	0.10		ND	0.55	2	3/23/13 15:39	WSD	
Trichloroethylene	0.73	0.10		3.9	0.54	2	3/23/13 15:39	WSD	
Trichlorofluoromethane (Freon 11)	0.33	0.10		1.9	0.56	2	3/23/13 15:39	WSD	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.10		ND	0.77	2	3/23/13 15:39	WSD	
1,2,4-Trimethylbenzene	ND	0.10		ND	0.49	2	3/23/13 15:39	WSD	
1,3,5-Trimethylbenzene	ND	0.10		ND	0.49	2	3/23/13 15:39	WSD	
Vinyl Chloride	ND	0.10		ND	0.26	2	3/23/13 15:39	WSD	
m&p-Xylene	1.9	0.20		8.1	0.87	2	3/23/13 15:39	WSD	

**ANALYTICAL RESULTS**

Project Location: Springfield St., Providence  
 Date Received: 3/21/2013  
**Field Sample #: ES Blower #2**  
**Sample ID: 13C0669-04**  
 Sample Matrix: Sub Slab  
 Sampled: 3/20/2013 11:15

Sample Description/Location:  
 Sub Description/Location:  
 Canister ID:  
 Canister Size:  
 Flow Controller ID:  
 Sample Type:

**Work Order: 13C0669**  
 Initial Vacuum(in Hg):  
 Final Vacuum(in Hg):  
 Receipt Vacuum(in Hg):  
 Flow Controller Type:  
 Flow Controller Calibration  
 RPD Pre and Post-Sampling:

**EPA TO-14A**

Sample Flags: A-09

Analyte	ppbv		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
o-Xylene	0.63	0.10		2.7	0.43	2	3/23/13	15:39	WSD

Surrogates	% Recovery		% REC Limits		Date/Time	
4-Bromofluorobenzene (1)	88.4		70-130		3/23/13	15:39

**Sample Extraction Data**

Prep Method: TO-15 Prep-EPA TO-14A

Lab Number [Field ID]	Batch	Pressure Dilution	Pre Dilution	Pre-Dil Initial mL	Pre-Dil Final mL	Default Injection mL	Actual Injection mL	Date
13C0669-01 [MS Front]	B069830	1	1	N/A	1000	400	200	03/22/13
13C0669-02 [MS Back]	B069830	1	1	N/A	1000	400	40	03/22/13
13C0669-03 [ES Blower #1]	B069830	1	1	N/A	1000	400	200	03/22/13
13C0669-04 [ES Blower #2]	B069830	1	1	N/A	1000	400	200	03/22/13

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	%REC	Limits	RPD	Limit	
<b>Batch B069830 - TO-15 Prep</b>											
<b>Blank (B069830-BLK1)</b>						Prepared & Analyzed: 03/22/13					
Benzene	ND	0.025									
Bromomethane	ND	0.025									
Carbon Tetrachloride	ND	0.025									
Chlorobenzene	ND	0.025									
Chloroethane	ND	0.025									
Chloroform	ND	0.025									
Chloromethane	ND	0.10									
1,2-Dibromoethane (EDB)	ND	0.025									
1,2-Dichlorobenzene	ND	0.025									
1,3-Dichlorobenzene	ND	0.025									
1,4-Dichlorobenzene	ND	0.025									
Dichlorodifluoromethane (Freon 12)	ND	0.025									
1,1-Dichloroethane	ND	0.025									
1,2-Dichloroethane	ND	0.025									
1,1-Dichloroethylene	ND	0.025									
cis-1,2-Dichloroethylene	ND	0.025									
1,2-Dichloropropane	ND	0.025									
cis-1,3-Dichloropropene	ND	0.025									
trans-1,3-Dichloropropene	ND	0.025									
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	ND	0.025									
Ethylbenzene	ND	0.025									
Hexachlorobutadiene	ND	0.025									
Methylene Chloride	ND	0.25									
Styrene	ND	0.025									
1,1,1,2-Tetrachloroethane	ND	0.025									
Tetrachloroethylene	ND	0.025									
Toluene	ND	0.025									
1,2,4-Trichlorobenzene	ND	0.050									
1,1,1-Trichloroethane	ND	0.025									
1,1,2-Trichloroethane	ND	0.025									
Trichloroethylene	ND	0.025									
Trichlorofluoromethane (Freon 11)	ND	0.025									
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.025									
1,2,4-Trimethylbenzene	ND	0.025									
1,3,5-Trimethylbenzene	ND	0.025									
Vinyl Chloride	ND	0.025									
m&p-Xylene	ND	0.050									
o-Xylene	ND	0.025									
Surrogate: 4-Bromofluorobenzene (1)	7.55				8.00		94.3	70-130			

QUALITY CONTROL

Air Toxics by EPA Compendium Methods - Quality Control

Analyte	ppbv		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	ppbv	Result	Limits	RPD	Limit		
<b>Batch B069830 - TO-15 Prep</b>											
<b>LCS (B069830-BS1)</b>					Prepared & Analyzed: 03/22/13						
Benzene	4.71				5.00		94.2	70-130			
Bromomethane	3.72				5.00		74.4	70-130			
Carbon Tetrachloride	4.64				5.00		92.7	70-130			
Chlorobenzene	4.81				5.00		96.2	70-130			
Chloroethane	3.97				5.00		79.4	70-130			
Chloroform	3.95				5.00		78.9	70-130			
Chloromethane	4.24				5.00		84.9	70-130			
1,2-Dibromoethane (EDB)	5.40				5.00		108	70-130			
1,2-Dichlorobenzene	4.67				5.00		93.3	70-130			
1,3-Dichlorobenzene	4.74				5.00		94.8	70-130			
1,4-Dichlorobenzene	4.76				5.00		95.2	70-130			
Dichlorodifluoromethane (Freon 12)	3.99				5.00		79.9	70-130			
1,1-Dichloroethane	4.08				5.00		81.6	70-130			
1,2-Dichloroethane	4.14				5.00		82.7	70-130			
1,1-Dichloroethylene	3.90				5.00		78.0	70-130			
cis-1,2-Dichloroethylene	4.38				5.00		87.7	70-130			
1,2-Dichloropropane	5.02				5.00		100	70-130			
cis-1,3-Dichloropropene	5.22				5.00		104	70-130			
trans-1,3-Dichloropropene	5.40				5.00		108	70-130			
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	4.39				5.00		87.9	70-130			
Ethylbenzene	5.61				5.00		112	70-130			
Hexachlorobutadiene	3.96				5.00		79.1	70-130			
Methylene Chloride	4.14				5.00		82.7	70-130			
Styrene	5.50				5.00		110	70-130			
1,1,2,2-Tetrachloroethane	4.71				5.00		94.2	70-130			
Tetrachloroethylene	4.79				5.00		95.8	70-130			
Toluene	5.42				5.00		108	70-130			
1,2,4-Trichlorobenzene	4.56				5.00		91.1	70-130			
1,1,1-Trichloroethane	4.47				5.00		89.3	70-130			
1,1,2-Trichloroethane	5.24				5.00		105	70-130			
Trichloroethylene	4.82				5.00		96.3	70-130			
Trichlorofluoromethane (Freon 11)	3.76				5.00		75.2	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	3.98				5.00		79.7	70-130			
1,2,4-Trimethylbenzene	5.28				5.00		106	70-130			
1,3,5-Trimethylbenzene	5.16				5.00		103	70-130			
Vinyl Chloride	3.90				5.00		78.1	70-130			
m&p-Xylene	11.2				10.0		112	70-130			
o-Xylene	5.56				5.00		111	70-130			
Surrogate: 4-Bromofluorobenzene (1)	7.28				8.00		91.0	70-130			

**FLAG/QUALIFIER SUMMARY**

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
A-09	Holding times and stability of samples taken in tedlar bags have not been determined
DL-02	Elevated method reporting limit due to insufficient sample volume

**CERTIFICATIONS**

**Certified Analyses included in this Report**

Analyte	Certifications
<i>EPA TO-14A in Air</i>	
Benzene	AIHA,FL,NY
Bromomethane	AIHA,FL,NY
Carbon Tetrachloride	AIHA,FL,NY
Chlorobenzene	AIHA,FL,NY
Chloroethane	AIHA,FL,NY
Chloroform	AIHA,FL,NY
Chloromethane	AIHA,FL,NY
1,2-Dibromoethane (EDB)	NY
1,2-Dichlorobenzene	AIHA,FL,NY
1,3-Dichlorobenzene	AIHA,FL,NY
1,4-Dichlorobenzene	AIHA,FL,NY
Dichlorodifluoromethane (Freon 12)	AIHA,FL,NY
1,1-Dichloroethane	AIHA,FL,NY
1,2-Dichloroethane	AIHA,FL,NY
1,1-Dichloroethylene	AIHA,FL,NY
cis-1,2-Dichloroethylene	AIHA,FL,NY
1,2-Dichloropropane	AIHA,FL,NY
cis-1,3-Dichloropropene	AIHA,FL,NY
trans-1,3-Dichloropropene	NY
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	AIHA,FL,NY
Ethylbenzene	AIHA,FL,NY
Hexachlorobutadiene	AIHA,FL,NY
Methylene Chloride	AIHA,FL,NY
Styrene	AIHA,FL,NY
1,1,2,2-Tetrachloroethane	AIHA,FL,NY
Tetrachloroethylene	AIHA,FL,NY
Toluene	AIHA,FL,NY
1,2,4-Trichlorobenzene	AIHA,FL,NY
1,1,1-Trichloroethane	AIHA,FL,NY
1,1,2-Trichloroethane	AIHA,FL,NY
Trichloroethylene	AIHA,FL,NY
Trichlorofluoromethane (Freon 11)	AIHA,FL,NY
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NY
1,2,4-Trimethylbenzene	AIHA,FL,NY
1,3,5-Trimethylbenzene	AIHA,FL,NY
Vinyl Chloride	AIHA,FL,NY
m&p-Xylene	AIHA,FL,NY
o-Xylene	AIHA,FL,NY

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2013
CT	Connecticut Department of Public Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2013
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2013
FL	Florida Department of Health	E871027 NELAP	06/30/2013
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2013
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2013
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2012



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

**AIR SAMPLE CHAIN OF CUSTODY RECORD**

39 SPRUCE ST  
 EAST LONGMEADOW, MA 01028

Company Name: ARCADIS  
 Address: 300 Metro Center Blvd.  
Warwick, RI 02886

Telephone: (401) 738-3887 x 25  
 Project # WK012152.0008  
 Client PO # \_\_\_\_\_

13C0669

Attention: Dana Pallister

Project Location: Springfield St. Providence  
 Sampled By: Andrew Dasilva

Proposal Provided? (For Billing purposes)  yes  no

proposal date

**DATA DELIVERY (check one):**  
 FAX  EMAIL  WEBSITE CLIENT  
 Fax #: \_\_\_\_\_  
 Email: donna.pallister@arcadis-us.com  
 Format:  EXCEL  PDF  GIS KEY  OTHER \_\_\_\_\_

Field ID	Sample Description	Media	Lab #	Date Sampled		Total Minutes Sampled	Flow Rate M <sup>3</sup> /Min. or L/Min.	Volume Liters or M <sup>3</sup>	Matrix Code*	"Hg	Analysis Requested	Please fill out completely, sign, date and retain the yellow copy for your records. Summa canisters at flow controllers must be returned within 14 days of receipt or rental will apply. Summa canisters will be retained for a minimum of 14 days after sampling date prior to cleaning.
				Start Time	Stop Time							
	MS Front	TB	01	3/20/13	955				SS			
	MS Back	TB	02	3/20/13	1010				SS			
	ES Blower #1	TB	03	3/20/13	1116				SS			
	ES Blower #2	TB	04	3/20/13	1115				SS			

Laboratory Comments:

CLIENT COMMENTS:

Relinquished by: (signature) \_\_\_\_\_ Date/Time: 3/20/13 16:40  
 Received by: (signature) \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: (signature) \_\_\_\_\_ Date/Time: 3/21/13 15:05  
 Received by: (signature) \_\_\_\_\_ Date/Time: 3/21/13 9:30

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

**Special Requirements**  
 Regulations: Rhode Island  
 Data Enhancement/RCP?  Y  N  
 Enhanced Data Package  Y  N  
 (Surcharge Applies)  
 Required Detection Limits: \_\_\_\_\_  
 Other: \_\_\_\_\_

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

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

**ANALYSIS REQUESTED**  
 I n i t i a l s  
 F i n a l i s t  
 L a b o r a t o r y  
 P r e p a r e d  
 S e e s e r i e s  
 S u m m a  
 C a n i s t e r  
 I D

**Flow Controller ID**

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



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

**AIR Only Receipt Checklist**

CLIENT NAME: ARCADIS RECEIVED BY: VIA DATE: 3/21

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

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

Containers received at Con-Test		
	# of Containers	Types (Size, Duration)
Summa Cans	4	
Tedlar Bags		
Tubes		
Regulators		
Restrictors		
Tubing		
Other		

Unused Summas:

Unused Regulators:

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

Laboratory Comments:

March 29, 2013

Donna Pallister  
Arcadis US, Inc. - Warwick, RI  
300 Metro Center Blvd., Suite 250  
Warwick, RI 02886

Project Location: Springfield St., Providence  
Client Job Number:  
Project Number: WK012152.0008  
Laboratory Work Order Number: 13C0734

Enclosed are results of analyses for samples received by the laboratory on March 22, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Lisa A. Worthington  
Project Manager



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

Arcadis US, Inc. - Warwick, RI  
300 Metro Center Blvd., Suite 250  
Warwick, RI 02886  
ATTN: Donna Pallister

REPORT DATE: 3/29/2013

PURCHASE ORDER NUMBER: 5131

PROJECT NUMBER: WK012152.0008

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 13C0734

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

PROJECT LOCATION: Springfield St., Providence

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-7	13C0734-01	Ground Water		SW-846 8260C	
MW-6	13C0734-02	Ground Water		SW-846 8260C	
ATC-4	13C0734-03	Ground Water		SW-846 8260C	
MW-8	13C0734-04	Ground Water		SW-846 8260C	
ATC-1	13C0734-05	Ground Water		SW-846 8260C	
Trip Blank	13C0734-06	Ground Water		SW-846 8260C	

**CASE NARRATIVE SUMMARY**

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

## SW-846 8260C

**Qualifications:**

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Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

**Analyte & Samples(s) Qualified:****1,2,3-Trichlorobenzene**

13C0734-01[MW-7], 13C0734-02[MW-6], 13C0734-03[ATC-4], 13C0734-04[MW-8], 13C0734-05[ATC-1], 13C0734-06[Trip Blank], B069785-BLK1, B069785-BS1, B069785-BSD1

---

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

**Analyte & Samples(s) Qualified:****1,2-Dibromo-3-chloropropane (DBCP), Diisopropyl Ether (DIPE)**

B069785-BS1

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Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.

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

B069785-BSD1

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Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

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

13C0734-01[MW-7], 13C0734-02[MW-6], 13C0734-03[ATC-4], 13C0734-04[MW-8], 13C0734-05[ATC-1], 13C0734-06[Trip Blank], B069785-BLK1, B069785-BS1, B069785-BSD1

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Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

**Analyte & Samples(s) Qualified:****1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,2-Dibromo-3-chloropropane (DBCP), 1,4-Dioxane, 2,2-Dichloropropane, Naphthalene, tert-Butyl Alcohol (TBA)**

13C0734-01[MW-7], 13C0734-02[MW-6], 13C0734-03[ATC-4], 13C0734-04[MW-8], 13C0734-05[ATC-1], 13C0734-06[Trip Blank], B069785-BLK1, B069785-BS1, B069785-BSD1

---

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

**Analyte & Samples(s) Qualified:****1,4-Dioxane, tert-Butyl Alcohol (TBA)**

13C0734-01[MW-7], 13C0734-02[MW-6], 13C0734-03[ATC-4], 13C0734-04[MW-8], 13C0734-05[ATC-1], 13C0734-06[Trip Blank], B069785-BLK1, B069785-BS1, B069785-BSD1

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Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

**Analyte & Samples(s) Qualified:****Bromomethane, Methylene Chloride**

B069785-BS1, B069785-BSD1

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The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "M. Erickson", is written on a light gray rectangular background.

Michael A. Erickson  
Laboratory Director

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13C0734

Date Received: 3/22/2013

Field Sample #: MW-7

Sampled: 3/21/2013 12:00

Sample ID: 13C0734-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Benzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-05, V-16	SW-846 8260C	3/26/13	3/27/13 9:38	MFF
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Carbon Disulfide	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
2,2-Dichloropropane	ND	1.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
cis-1,3-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13C0734

Date Received: 3/22/2013

Field Sample #: MW-7

Sampled: 3/21/2013 12:00

Sample ID: 13C0734-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,4-Dioxane	ND	50	µg/L	1	V-05, V-16	SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Hexachlorobutadiene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Methylene Chloride	ND	5.0	µg/L	1	R-05	SW-846 8260C	3/26/13	3/27/13 9:38	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Naphthalene	ND	2.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 9:38	MFF
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Styrene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Toluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	L-04, V-05	SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,3,5-Trichlorobenzene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:38	MFF

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	97.2	70-130	3/27/13 9:38
Toluene-d8	92.0	70-130	3/27/13 9:38
4-Bromofluorobenzene	91.9	70-130	3/27/13 9:38

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13C0734

Date Received: 3/22/2013

Field Sample #: MW-6

Sampled: 3/21/2013 13:00

Sample ID: 13C0734-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Benzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-05, V-16	SW-846 8260C	3/26/13	3/27/13 10:09	MFF
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Carbon Disulfide	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
2,2-Dichloropropane	ND	1.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
cis-1,3-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13C0734

Date Received: 3/22/2013

Field Sample #: MW-6

Sampled: 3/21/2013 13:00

Sample ID: 13C0734-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,4-Dioxane	ND	50	µg/L	1	V-05, V-16	SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Hexachlorobutadiene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Methylene Chloride	ND	5.0	µg/L	1	R-05	SW-846 8260C	3/26/13	3/27/13 10:09	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Naphthalene	ND	2.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 10:09	MFF
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Styrene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Toluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	L-04, V-05	SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,3,5-Trichlorobenzene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:09	MFF

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	94.9	70-130	3/27/13 10:09
Toluene-d8	93.7	70-130	3/27/13 10:09
4-Bromofluorobenzene	90.8	70-130	3/27/13 10:09

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13C0734

Date Received: 3/22/2013

Field Sample #: ATC-4

Sampled: 3/21/2013 14:00

Sample ID: 13C0734-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Benzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-05, V-16	SW-846 8260C	3/26/13	3/27/13 10:40	MFF
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Carbon Disulfide	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,4-Dichlorobenzene	1.2	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
2,2-Dichloropropane	ND	1.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
cis-1,3-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13C0734

Date Received: 3/22/2013

Field Sample #: ATC-4

Sampled: 3/21/2013 14:00

Sample ID: 13C0734-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,4-Dioxane	ND	50	µg/L	1	V-05, V-16	SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Hexachlorobutadiene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Methylene Chloride	ND	5.0	µg/L	1	R-05	SW-846 8260C	3/26/13	3/27/13 10:40	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Naphthalene	ND	2.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 10:40	MFF
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Styrene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Toluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	L-04, V-05	SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,3,5-Trichlorobenzene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 10:40	MFF

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	97.3	70-130	3/27/13 10:40
Toluene-d8	93.0	70-130	3/27/13 10:40
4-Bromofluorobenzene	90.7	70-130	3/27/13 10:40

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13C0734

Date Received: 3/22/2013

Field Sample #: MW-8

Sampled: 3/21/2013 14:45

Sample ID: 13C0734-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Benzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-05, V-16	SW-846 8260C	3/26/13	3/27/13 11:11	MFF
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Carbon Disulfide	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
2,2-Dichloropropane	ND	1.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
cis-1,3-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13C0734

Date Received: 3/22/2013

Field Sample #: MW-8

Sampled: 3/21/2013 14:45

Sample ID: 13C0734-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,4-Dioxane	ND	50	µg/L	1	V-05, V-16	SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Hexachlorobutadiene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Methylene Chloride	ND	5.0	µg/L	1	R-05	SW-846 8260C	3/26/13	3/27/13 11:11	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Naphthalene	ND	2.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 11:11	MFF
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Styrene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Toluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	L-04, V-05	SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,3,5-Trichlorobenzene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:11	MFF

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	97.8	70-130	3/27/13 11:11
Toluene-d8	93.9	70-130	3/27/13 11:11
4-Bromofluorobenzene	91.5	70-130	3/27/13 11:11

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13C0734

Date Received: 3/22/2013

Field Sample #: ATC-1

Sampled: 3/21/2013 16:30

Sample ID: 13C0734-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Benzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-05, V-16	SW-846 8260C	3/26/13	3/27/13 11:42	MFF
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Carbon Disulfide	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
2,2-Dichloropropane	ND	1.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
cis-1,3-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13C0734

Date Received: 3/22/2013

Field Sample #: ATC-1

Sampled: 3/21/2013 16:30

Sample ID: 13C0734-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,4-Dioxane	ND	50	µg/L	1	V-05, V-16	SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Hexachlorobutadiene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Methylene Chloride	ND	5.0	µg/L	1	R-05	SW-846 8260C	3/26/13	3/27/13 11:42	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Naphthalene	ND	2.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 11:42	MFF
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Styrene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Toluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	L-04, V-05	SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,3,5-Trichlorobenzene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 11:42	MFF

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	97.2	70-130	3/27/13 11:42
Toluene-d8	93.8	70-130	3/27/13 11:42
4-Bromofluorobenzene	91.3	70-130	3/27/13 11:42

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13C0734

Date Received: 3/22/2013

Field Sample #: Trip Blank

Sampled: 3/21/2013 00:00

Sample ID: 13C0734-06

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Benzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Bromodichloromethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1	V-05, V-16	SW-846 8260C	3/26/13	3/27/13 9:07	MFF
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Carbon Disulfide	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
2,2-Dichloropropane	ND	1.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
cis-1,3-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF

Project Location: Springfield St., Providence

Sample Description:

Work Order: 13C0734

Date Received: 3/22/2013

Field Sample #: Trip Blank

Sampled: 3/21/2013 00:00

Sample ID: 13C0734-06

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,4-Dioxane	ND	50	µg/L	1	V-16, V-05	SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Hexachlorobutadiene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Methylene Chloride	ND	5.0	µg/L	1	R-05	SW-846 8260C	3/26/13	3/27/13 9:07	MFF
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Naphthalene	ND	2.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 9:07	MFF
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Styrene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Tetrahydrofuran	ND	10	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Toluene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1	L-04, V-05	SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	V-05	SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,3,5-Trichlorobenzene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	3/26/13	3/27/13 9:07	MFF

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	95.6	70-130	3/27/13 9:07
Toluene-d8	93.8	70-130	3/27/13 9:07
4-Bromofluorobenzene	95.0	70-130	3/27/13 9:07

**Sample Extraction Data**

**Prep Method: SW-846 5030B-SW-846 8260C**

<b>Lab Number [Field ID]</b>	<b>Batch</b>	<b>Initial [mL]</b>	<b>Final [mL]</b>	<b>Date</b>
13C0734-01 [MW-7]	B069785	5	5.00	03/26/13
13C0734-02 [MW-6]	B069785	5	5.00	03/26/13
13C0734-03 [ATC-4]	B069785	5	5.00	03/26/13
13C0734-04 [MW-8]	B069785	5	5.00	03/26/13
13C0734-05 [ATC-1]	B069785	5	5.00	03/26/13
13C0734-06 [Trip Blank]	B069785	5	5.00	03/26/13

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B069785 - SW-846 5030B

Blank (B069785-BLK1)

Prepared: 03/26/13 Analyzed: 03/27/13

Acetone	ND	50	µg/L							
Acrylonitrile	ND	5.0	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
Bromobenzene	ND	1.0	µg/L							
Bromochloromethane	ND	1.0	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	1.0	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	20	µg/L							
tert-Butyl Alcohol (TBA)	ND	20	µg/L							V-05, V-16
n-Butylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	1.0	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	2.0	µg/L							
Carbon Tetrachloride	ND	5.0	µg/L							
Chlorobenzene	ND	1.0	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	2.0	µg/L							
Chloroform	ND	2.0	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	1.0	µg/L							
4-Chlorotoluene	ND	1.0	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L							V-05
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	1.0	µg/L							
1,4-Dichlorobenzene	ND	1.0	µg/L							
trans-1,4-Dichloro-2-butene	ND	2.0	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L							
1,1-Dichloroethane	ND	1.0	µg/L							
1,2-Dichloroethane	ND	1.0	µg/L							
1,1-Dichloroethylene	ND	1.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
trans-1,2-Dichloroethylene	ND	1.0	µg/L							
1,2-Dichloropropane	ND	1.0	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	1.0	µg/L							V-05
1,1-Dichloropropene	ND	2.0	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	50	µg/L							V-05, V-16
Ethylbenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	10	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							

**QUALITY CONTROL**

**Volatile Organic Compounds by GC/MS - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B069785 - SW-846 5030B**

**Blank (B069785-BLK1)**

Prepared: 03/26/13 Analyzed: 03/27/13

Methylene Chloride	ND	5.0	µg/L							R-05
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L							
Naphthalene	ND	2.0	µg/L							V-05
n-Propylbenzene	ND	1.0	µg/L							
Styrene	ND	1.0	µg/L							
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L							
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L							
Tetrachloroethylene	ND	1.0	µg/L							
Tetrahydrofuran	ND	10	µg/L							
Toluene	ND	1.0	µg/L							
1,2,3-Trichlorobenzene	ND	5.0	µg/L							L-04, V-05
1,2,4-Trichlorobenzene	ND	1.0	µg/L							V-05
1,3,5-Trichlorobenzene	ND	1.0	µg/L							
1,1,1-Trichloroethane	ND	1.0	µg/L							
1,1,2-Trichloroethane	ND	1.0	µg/L							
Trichloroethylene	ND	1.0	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L							
1,2,3-Trichloropropane	ND	2.0	µg/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L							
1,2,4-Trimethylbenzene	ND	1.0	µg/L							
1,3,5-Trimethylbenzene	ND	1.0	µg/L							
Vinyl Chloride	ND	2.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	1.0	µg/L							
Surrogate: 1,2-Dichloroethane-d4	23.8		µg/L	25.0		95.2	70-130			
Surrogate: Toluene-d8	23.2		µg/L	25.0		93.0	70-130			
Surrogate: 4-Bromofluorobenzene	22.6		µg/L	25.0		90.6	70-130			

**LCS (B069785-BS1)**

Prepared: 03/26/13 Analyzed: 03/27/13

Acetone	90.1	50	µg/L	100		90.1	70-160			†
Acrylonitrile	12.4	5.0	µg/L	10.0		124	70-130			
tert-Amyl Methyl Ether (TAME)	9.39	0.50	µg/L	10.0		93.9	70-130			
Benzene	10.1	1.0	µg/L	10.0		101	70-130			
Bromobenzene	10.7	1.0	µg/L	10.0		107	70-130			
Bromochloromethane	11.1	1.0	µg/L	10.0		111	70-130			
Bromodichloromethane	9.54	0.50	µg/L	10.0		95.4	70-130			
Bromoform	9.02	1.0	µg/L	10.0		90.2	70-130			
Bromomethane	7.56	2.0	µg/L	10.0		75.6	40-160		V-20	†
2-Butanone (MEK)	90.5	20	µg/L	100		90.5	40-160			†
tert-Butyl Alcohol (TBA)	70.7	20	µg/L	100		70.7	40-160		V-05, V-16	†
n-Butylbenzene	9.00	1.0	µg/L	10.0		90.0	70-130			
sec-Butylbenzene	10.6	1.0	µg/L	10.0		106	70-130			
tert-Butylbenzene	10.8	1.0	µg/L	10.0		108	70-130			
tert-Butyl Ethyl Ether (TBEE)	9.89	0.50	µg/L	10.0		98.9	70-130			
Carbon Disulfide	8.12	2.0	µg/L	10.0		81.2	70-130			
Carbon Tetrachloride	8.76	5.0	µg/L	10.0		87.6	70-130			
Chlorobenzene	12.0	1.0	µg/L	10.0		120	70-130			
Chlorodibromomethane	8.37	0.50	µg/L	10.0		83.7	70-130			
Chloroethane	9.97	2.0	µg/L	10.0		99.7	70-130			
Chloroform	10.1	2.0	µg/L	10.0		101	70-130			
Chloromethane	7.81	2.0	µg/L	10.0		78.1	40-160			†
2-Chlorotoluene	11.2	1.0	µg/L	10.0		112	70-130			

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B069785 - SW-846 5030B</b>										
<b>LCS (B069785-BS1)</b>										
					Prepared: 03/26/13 Analyzed: 03/27/13					
4-Chlorotoluene	11.5	1.0	µg/L	10.0		115	70-130			
<b>1,2-Dibromo-3-chloropropane (DBCP)</b>	6.48	5.0	µg/L	10.0		<b>64.8</b> *	70-130			L-07, V-05
1,2-Dibromoethane (EDB)	10.1	0.50	µg/L	10.0		101	70-130			
Dibromomethane	10.4	1.0	µg/L	10.0		104	70-130			
1,2-Dichlorobenzene	11.2	1.0	µg/L	10.0		112	70-130			
1,3-Dichlorobenzene	11.2	1.0	µg/L	10.0		112	70-130			
1,4-Dichlorobenzene	10.2	1.0	µg/L	10.0		102	70-130			
trans-1,4-Dichloro-2-butene	8.50	2.0	µg/L	10.0		85.0	70-130			
Dichlorodifluoromethane (Freon 12)	5.79	2.0	µg/L	10.0		57.9	40-160			†
1,1-Dichloroethane	11.0	1.0	µg/L	10.0		110	70-130			
1,2-Dichloroethane	9.77	1.0	µg/L	10.0		97.7	70-130			
1,1-Dichloroethylene	9.75	1.0	µg/L	10.0		97.5	70-130			
cis-1,2-Dichloroethylene	9.44	1.0	µg/L	10.0		94.4	70-130			
trans-1,2-Dichloroethylene	11.9	1.0	µg/L	10.0		119	70-130			
1,2-Dichloropropane	10.0	1.0	µg/L	10.0		100	70-130			
1,3-Dichloropropane	9.69	0.50	µg/L	10.0		96.9	70-130			
2,2-Dichloropropane	6.57	1.0	µg/L	10.0		65.7	40-130			V-05 †
1,1-Dichloropropene	9.78	2.0	µg/L	10.0		97.8	70-130			
cis-1,3-Dichloropropene	7.73	0.50	µg/L	10.0		77.3	70-130			
trans-1,3-Dichloropropene	7.87	0.50	µg/L	10.0		78.7	70-130			
Diethyl Ether	10.6	2.0	µg/L	10.0		106	70-130			
<b>Diisopropyl Ether (DIPE)</b>	13.7	0.50	µg/L	10.0		<b>137</b> *	70-130			L-07
1,4-Dioxane	77.5	50	µg/L	100		77.5	40-130			V-05, V-16 †
Ethylbenzene	10.9	1.0	µg/L	10.0		109	70-130			
Hexachlorobutadiene	8.24	0.50	µg/L	10.0		82.4	70-130			
2-Hexanone (MBK)	95.7	10	µg/L	100		95.7	70-160			†
Isopropylbenzene (Cumene)	11.4	1.0	µg/L	10.0		114	70-130			
p-Isopropyltoluene (p-Cymene)	10.5	1.0	µg/L	10.0		105	70-130			
Methyl tert-Butyl Ether (MTBE)	10.3	1.0	µg/L	10.0		103	70-130			
Methylene Chloride	9.83	5.0	µg/L	10.0		98.3	70-130			R-05, V-20
4-Methyl-2-pentanone (MIBK)	101	10	µg/L	100		101	70-160			†
Naphthalene	5.43	2.0	µg/L	10.0		54.3	40-130			V-05 †
n-Propylbenzene	11.3	1.0	µg/L	10.0		113	70-130			
Styrene	11.6	1.0	µg/L	10.0		116	70-130			
1,1,1,2-Tetrachloroethane	10.2	1.0	µg/L	10.0		102	70-130			
1,1,2,2-Tetrachloroethane	9.83	0.50	µg/L	10.0		98.3	70-130			
Tetrachloroethylene	10.0	1.0	µg/L	10.0		100	70-130			
Tetrahydrofuran	10.6	10	µg/L	10.0		106	70-130			
Toluene	10.4	1.0	µg/L	10.0		104	70-130			
<b>1,2,3-Trichlorobenzene</b>	5.34	5.0	µg/L	10.0		<b>53.4</b> *	70-130			L-04, V-05
1,2,4-Trichlorobenzene	7.20	1.0	µg/L	10.0		72.0	70-130			V-05
1,3,5-Trichlorobenzene	8.47	1.0	µg/L	10.0		84.7	70-130			
1,1,1-Trichloroethane	9.36	1.0	µg/L	10.0		93.6	70-130			
1,1,2-Trichloroethane	9.90	1.0	µg/L	10.0		99.0	70-130			
Trichloroethylene	10.0	1.0	µg/L	10.0		100	70-130			
Trichlorofluoromethane (Freon 11)	9.31	2.0	µg/L	10.0		93.1	70-130			
1,2,3-Trichloropropane	10.0	2.0	µg/L	10.0		100	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.1	1.0	µg/L	10.0		101	70-130			
1,2,4-Trimethylbenzene	10.6	1.0	µg/L	10.0		106	70-130			
1,3,5-Trimethylbenzene	10.8	1.0	µg/L	10.0		108	70-130			
Vinyl Chloride	8.08	2.0	µg/L	10.0		80.8	40-160			†

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B069785 - SW-846 5030B

LCS (B069785-BS1)

Prepared: 03/26/13 Analyzed: 03/27/13

m+p Xylene	23.3	2.0	µg/L	20.0		116	70-130			
o-Xylene	11.8	1.0	µg/L	10.0		118	70-130			
Surrogate: 1,2-Dichloroethane-d4	22.8		µg/L	25.0		91.2	70-130			
Surrogate: Toluene-d8	24.3		µg/L	25.0		97.2	70-130			
Surrogate: 4-Bromofluorobenzene	24.0		µg/L	25.0		95.8	70-130			

LCS Dup (B069785-BS1)

Prepared: 03/26/13 Analyzed: 03/27/13

Acetone	115	50	µg/L	100		115	70-160	24.5	25	†
Acrylonitrile	11.2	5.0	µg/L	10.0		112	70-130	10.5	25	
tert-Amyl Methyl Ether (TAME)	9.51	0.50	µg/L	10.0		95.1	70-130	1.27	25	
Benzene	9.76	1.0	µg/L	10.0		97.6	70-130	3.82	25	
Bromobenzene	10.5	1.0	µg/L	10.0		105	70-130	1.89	25	
Bromochloromethane	10.8	1.0	µg/L	10.0		108	70-130	2.19	25	
Bromodichloromethane	8.91	0.50	µg/L	10.0		89.1	70-130	6.83	25	
Bromoform	9.31	1.0	µg/L	10.0		93.1	70-130	3.16	25	
Bromomethane	9.19	2.0	µg/L	10.0		91.9	40-160	19.5	25	V-20 †
2-Butanone (MEK)	105	20	µg/L	100		105	40-160	14.5	25	†
tert-Butyl Alcohol (TBA)	87.6	20	µg/L	100		87.6	40-160	21.4	25	V-05, V-16 †
n-Butylbenzene	8.63	1.0	µg/L	10.0		86.3	70-130	4.20	25	
sec-Butylbenzene	10.1	1.0	µg/L	10.0		101	70-130	4.91	25	
tert-Butylbenzene	10.2	1.0	µg/L	10.0		102	70-130	5.62	25	
tert-Butyl Ethyl Ether (TBEE)	9.98	0.50	µg/L	10.0		99.8	70-130	0.906	25	
Carbon Disulfide	8.53	2.0	µg/L	10.0		85.3	70-130	4.92	25	
Carbon Tetrachloride	7.94	5.0	µg/L	10.0		79.4	70-130	9.82	25	
Chlorobenzene	11.3	1.0	µg/L	10.0		113	70-130	6.03	25	
Chlorodibromomethane	8.24	0.50	µg/L	10.0		82.4	70-130	1.57	25	
Chloroethane	10.8	2.0	µg/L	10.0		108	70-130	7.71	25	
Chloroform	9.75	2.0	µg/L	10.0		97.5	70-130	3.72	25	
Chloromethane	8.40	2.0	µg/L	10.0		84.0	40-160	7.28	25	†
2-Chlorotoluene	10.8	1.0	µg/L	10.0		108	70-130	3.56	25	
4-Chlorotoluene	10.9	1.0	µg/L	10.0		109	70-130	4.82	25	
1,2-Dibromo-3-chloropropane (DBCP)	7.57	5.0	µg/L	10.0		75.7	70-130	15.5	25	V-05
1,2-Dibromoethane (EDB)	10.5	0.50	µg/L	10.0		105	70-130	4.18	25	
Dibromomethane	10.4	1.0	µg/L	10.0		104	70-130	0.192	25	
1,2-Dichlorobenzene	10.9	1.0	µg/L	10.0		109	70-130	2.90	25	
1,3-Dichlorobenzene	10.8	1.0	µg/L	10.0		108	70-130	3.62	25	
1,4-Dichlorobenzene	10.1	1.0	µg/L	10.0		101	70-130	1.57	25	
trans-1,4-Dichloro-2-butene	9.05	2.0	µg/L	10.0		90.5	70-130	6.27	25	
Dichlorodifluoromethane (Freon 12)	5.57	2.0	µg/L	10.0		55.7	40-160	3.87	25	†
1,1-Dichloroethane	9.39	1.0	µg/L	10.0		93.9	70-130	16.2	25	
1,2-Dichloroethane	9.37	1.0	µg/L	10.0		93.7	70-130	4.18	25	
1,1-Dichloroethylene	10.1	1.0	µg/L	10.0		101	70-130	3.13	25	
cis-1,2-Dichloroethylene	9.10	1.0	µg/L	10.0		91.0	70-130	3.67	25	
trans-1,2-Dichloroethylene	9.83	1.0	µg/L	10.0		98.3	70-130	19.1	25	
1,2-Dichloropropane	9.53	1.0	µg/L	10.0		95.3	70-130	4.91	25	
1,3-Dichloropropane	9.70	0.50	µg/L	10.0		97.0	70-130	0.103	25	
2,2-Dichloropropane	6.18	1.0	µg/L	10.0		61.8	40-130	6.12	25	V-05 †
1,1-Dichloropropene	9.26	2.0	µg/L	10.0		92.6	70-130	5.46	25	
cis-1,3-Dichloropropene	7.24	0.50	µg/L	10.0		72.4	70-130	6.55	25	
trans-1,3-Dichloropropene	7.75	0.50	µg/L	10.0		77.5	70-130	1.54	25	
Diethyl Ether	12.2	2.0	µg/L	10.0		122	70-130	14.5	25	
Diisopropyl Ether (DIPE)	11.4	0.50	µg/L	10.0		114	70-130	18.7	25	

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B069785 - SW-846 5030B</b>										
<b>LCS Dup (B069785-BSD1)</b>										
					Prepared: 03/26/13 Analyzed: 03/27/13					
1,4-Dioxane	116	50	µg/L	100	116	116	40-130	39.7	50	V-05, V-16 † ‡
Ethylbenzene	10.5	1.0	µg/L	10.0	105	105	70-130	4.01	25	
Hexachlorobutadiene	7.89	0.50	µg/L	10.0	78.9	78.9	70-130	4.34	25	
2-Hexanone (MBK)	113	10	µg/L	100	113	113	70-160	17.0	25	†
Isopropylbenzene (Cumene)	11.0	1.0	µg/L	10.0	110	110	70-130	3.59	25	
p-Isopropyltoluene (p-Cymene)	9.89	1.0	µg/L	10.0	98.9	98.9	70-130	6.08	25	
Methyl tert-Butyl Ether (MTBE)	9.87	1.0	µg/L	10.0	98.7	98.7	70-130	4.46	25	
<b>Methylene Chloride</b>	13.5	5.0	µg/L	10.0	<b>135</b>	<b>135</b>	70-130	<b>31.7</b>	25	L-07A, R-05, V-20
4-Methyl-2-pentanone (MIBK)	114	10	µg/L	100	114	114	70-160	12.5	25	†
Naphthalene	6.29	2.0	µg/L	10.0	62.9	62.9	40-130	14.7	25	V-05 †
n-Propylbenzene	10.9	1.0	µg/L	10.0	109	109	70-130	3.43	25	
Styrene	11.2	1.0	µg/L	10.0	112	112	70-130	3.85	25	
1,1,1,2-Tetrachloroethane	9.73	1.0	µg/L	10.0	97.3	97.3	70-130	4.52	25	
1,1,2,2-Tetrachloroethane	10.8	0.50	µg/L	10.0	108	108	70-130	9.22	25	
Tetrachloroethylene	9.63	1.0	µg/L	10.0	96.3	96.3	70-130	4.17	25	
Tetrahydrofuran	12.3	10	µg/L	10.0	123	123	70-130	15.2	25	
Toluene	9.75	1.0	µg/L	10.0	97.5	97.5	70-130	6.16	25	
<b>1,2,3-Trichlorobenzene</b>	6.45	5.0	µg/L	10.0	<b>64.5</b>	<b>64.5</b>	70-130	18.8	25	L-04, V-05
1,2,4-Trichlorobenzene	7.90	1.0	µg/L	10.0	79.0	79.0	70-130	9.27	25	V-05
1,3,5-Trichlorobenzene	8.60	1.0	µg/L	10.0	86.0	86.0	70-130	1.52	25	
1,1,1-Trichloroethane	8.71	1.0	µg/L	10.0	87.1	87.1	70-130	7.19	25	
1,1,2-Trichloroethane	10.0	1.0	µg/L	10.0	100	100	70-130	1.10	25	
Trichloroethylene	9.32	1.0	µg/L	10.0	93.2	93.2	70-130	7.14	25	
Trichlorofluoromethane (Freon 11)	9.69	2.0	µg/L	10.0	96.9	96.9	70-130	4.00	25	
1,2,3-Trichloropropane	11.0	2.0	µg/L	10.0	110	110	70-130	9.59	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.8	1.0	µg/L	10.0	108	108	70-130	7.17	25	
1,2,4-Trimethylbenzene	10.2	1.0	µg/L	10.0	102	102	70-130	4.42	25	
1,3,5-Trimethylbenzene	10.4	1.0	µg/L	10.0	104	104	70-130	3.87	25	
Vinyl Chloride	8.54	2.0	µg/L	10.0	85.4	85.4	40-160	5.54	25	†
m+p Xylene	22.2	2.0	µg/L	20.0	111	111	70-130	4.57	25	
o-Xylene	11.4	1.0	µg/L	10.0	114	114	70-130	3.44	25	
Surrogate: 1,2-Dichloroethane-d4	23.2		µg/L	25.0			70-130	92.6		
Surrogate: Toluene-d8	24.1		µg/L	25.0			70-130	96.4		
Surrogate: 4-Bromofluorobenzene	24.6		µg/L	25.0			70-130	98.3		

**FLAG/QUALIFIER SUMMARY**

- \* QC result is outside of established limits.
  - † Wide recovery limits established for difficult compound.
  - ‡ Wide RPD limits established for difficult compound.
  - # Data exceeded client recommended or regulatory level
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
- L-04 Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
  - L-07 Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
  - L-07A Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.
  - R-05 Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
  - V-05 Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
  - V-16 Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
  - V-20 Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

**CERTIFICATIONS**

**Certified Analyses included in this Report**

Analyte	Certifications
<i>SW-846 8260C in Water</i>	
Acetone	CT,NY,ME,NH,VA
Acrylonitrile	CT,NY,ME,NH,VA
tert-Amyl Methyl Ether (TAME)	NY,ME,NH,VA
Benzene	CT,NY,ME,NH,VA
Bromochloromethane	NY,ME,NH,VA
Bromodichloromethane	CT,NY,ME,NH,VA
Bromoform	CT,NY,ME,NH,VA
Bromomethane	CT,NY,ME,NH,VA
2-Butanone (MEK)	CT,NY,ME,NH,VA
tert-Butyl Alcohol (TBA)	NY,ME,NH,VA
n-Butylbenzene	NY,ME,VA
sec-Butylbenzene	NY,ME,VA
tert-Butylbenzene	NY,ME,VA
tert-Butyl Ethyl Ether (TBEE)	NY,ME,NH,VA
Carbon Disulfide	CT,NY,ME,NH,VA
Carbon Tetrachloride	CT,NY,ME,NH,VA
Chlorobenzene	CT,NY,ME,NH,VA
Chlorodibromomethane	CT,NY,ME,NH,VA
Chloroethane	CT,NY,ME,NH,VA
Chloroform	CT,NY,ME,NH,VA
Chloromethane	CT,NY,ME,NH,VA
2-Chlorotoluene	NY,ME,NH,VA
4-Chlorotoluene	NY,ME,NH,VA
Dibromomethane	NY,ME,NH,VA
1,2-Dichlorobenzene	CT,NY,ME,NH,VA
1,3-Dichlorobenzene	CT,NY,ME,NH,VA
1,4-Dichlorobenzene	CT,NY,ME,NH,VA
trans-1,4-Dichloro-2-butene	NY,ME,NH,VA
Dichlorodifluoromethane (Freon 12)	NY,ME,NH,VA
1,1-Dichloroethane	CT,NY,ME,NH,VA
1,2-Dichloroethane	CT,NY,ME,NH,VA
1,1-Dichloroethylene	CT,NY,ME,NH,VA
cis-1,2-Dichloroethylene	NY,ME
trans-1,2-Dichloroethylene	CT,NY,ME,NH,VA
1,2-Dichloropropane	CT,NY,ME,NH,VA
1,3-Dichloropropane	NY,ME,VA
2,2-Dichloropropane	NY,ME,NH,VA
1,1-Dichloropropene	NY,ME,NH,VA
cis-1,3-Dichloropropene	CT,NY,ME,NH,VA
trans-1,3-Dichloropropene	CT,NY,ME,NH,VA
Diisopropyl Ether (DIPE)	NY,ME,NH,VA
Ethylbenzene	CT,NY,ME,NH,VA
Hexachlorobutadiene	CT,NY,ME,NH,VA
2-Hexanone (MBK)	CT,NY,ME,NH,VA
Isopropylbenzene (Cumene)	NY,ME,VA
p-Isopropyltoluene (p-Cymene)	CT,NY,ME,NH,VA
Methyl tert-Butyl Ether (MTBE)	CT,NY,ME,NH,VA

**CERTIFICATIONS**

**Certified Analyses included in this Report**

Analyte	Certifications
<i>SW-846 8260C in Water</i>	
Methylene Chloride	CT,NY,ME,NH,VA
4-Methyl-2-pentanone (MIBK)	CT,NY,ME,NH,VA
Naphthalene	NY,ME,NH,VA
n-Propylbenzene	CT,NY,ME,NH,VA
Styrene	CT,NY,ME,NH,VA
1,1,1,2-Tetrachloroethane	CT,NY,ME,NH,VA
1,1,2,2-Tetrachloroethane	CT,NY,ME,NH,VA
Tetrachloroethylene	CT,NY,ME,NH,VA
Toluene	CT,NY,ME,NH,VA
1,2,3-Trichlorobenzene	NY,ME,NH,VA
1,2,4-Trichlorobenzene	CT,NY,ME,NH,VA
1,3,5-Trichlorobenzene	ME
1,1,1-Trichloroethane	CT,NY,ME,NH,VA
1,1,2-Trichloroethane	CT,NY,ME,NH,VA
Trichloroethylene	CT,NY,ME,NH,VA
Trichlorofluoromethane (Freon 11)	CT,NY,ME,NH,VA
1,2,3-Trichloropropane	NY,ME,NH,VA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NY,VA
1,2,4-Trimethylbenzene	NY,ME,VA
1,3,5-Trimethylbenzene	NY,ME,VA
Vinyl Chloride	CT,NY,ME,NH,VA
m+p Xylene	CT,NY,ME,NH,VA
o-Xylene	CT,NY,ME,NH,VA

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2013
CT	Connecticut Department of Public Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2013
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2013
FL	Florida Department of Health	E871027 NELAP	06/30/2013
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2013
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2013
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2012



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 www.contestlabs.com



### Sample Receipt Checklist

CLIENT NAME: Arcadis RECEIVED BY: KKM DATE: 3/22/13

- 1) Was the chain(s) of custody relinquished and signed?  Yes  No  No CoC Included  
 2) Does the chain agree with the samples?  Yes  No  
 If not, explain:  
 3) Are all the samples in good condition?  Yes  No  
 If not, explain:

4) How were the samples received:  
 On Ice  Direct from Sampling  Ambient  In Cooler(s)   
 Were the samples received in Temperature Compliance of (2-6°C)?  Yes  No  N/A

Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 2.9

- 5) Are there Dissolved samples for the lab to filter? Yes  No   
 Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
 6) Are there any RUSH or SHORT HOLDING TIME samples? Yes  No   
 Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

7) Location where samples are stored: 19  
 Permission to subcontract samples? Yes  No   
 (Walk-in clients only) if not already approved  
 Client Signature: \_\_\_\_\_

- 8) Do all samples have the proper Acid pH: Yes  No  N/A  
 9) Do all samples have the proper Base pH: Yes  No  N/A

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes  No  N/A

### Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Air Cassette	
500 mL Plastic		Hg/Hopcalite Tube	
250 mL plastic		Plastic Bag / Ziploc	
40 mL Vial - type listed below	<u>18</u>	PM 2.5 / PM 10	
Colisure / bacteria bottle		PUF Cartridge	
Dissolved Oxygen bottle		SOC Kit	
Encore		TO-17 Tubes	
Flashpoint bottle		Non-ConTest Container	
Perchlorate Kit		Other glass jar	
Other		Other	

Laboratory Comments: \_\_\_\_\_

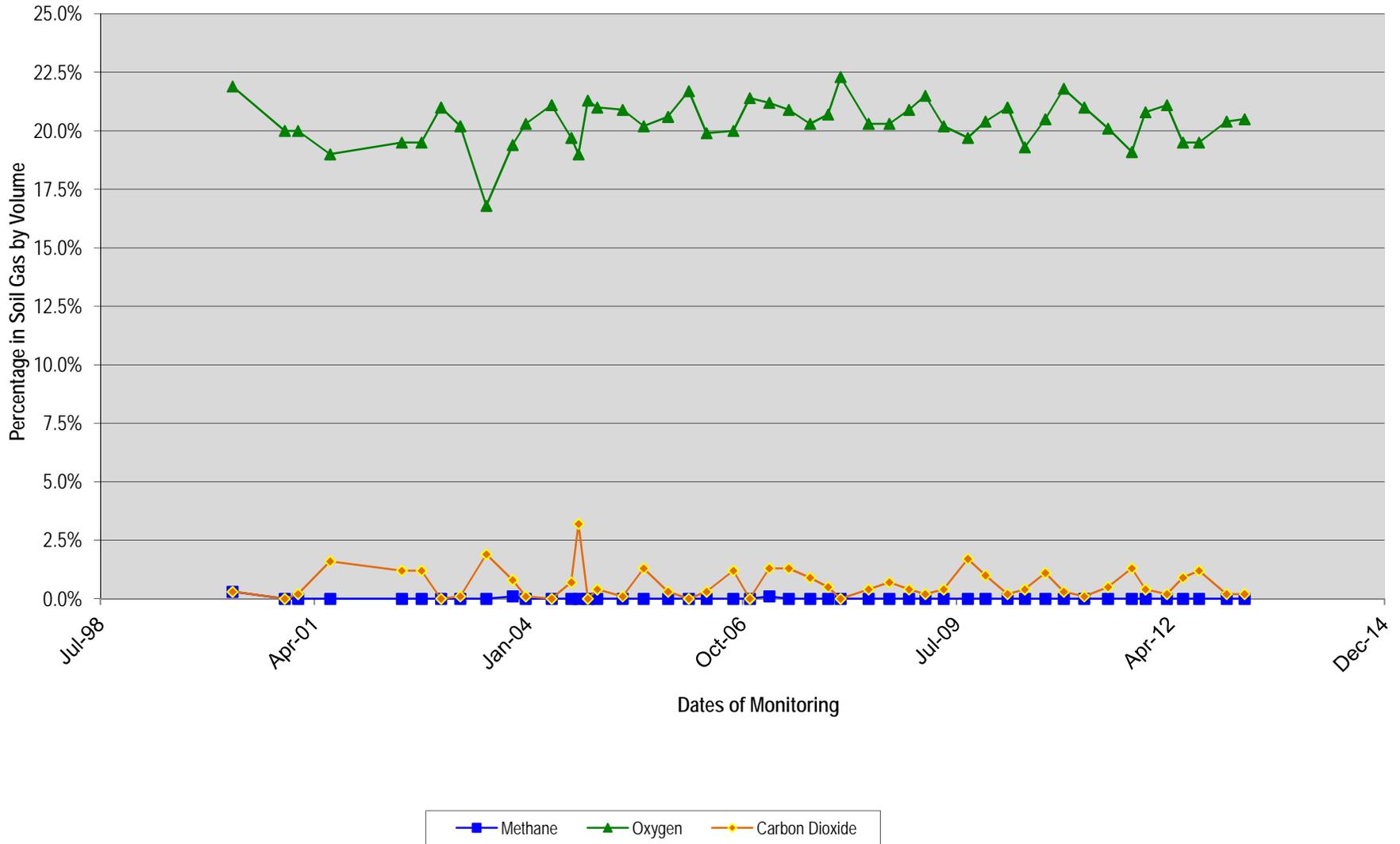
40 mL vials: # HCl 18 # Methanol \_\_\_\_\_  
 # Bisulfate \_\_\_\_\_ # DI Water \_\_\_\_\_  
 # Thiosulfate \_\_\_\_\_ Unpreserved \_\_\_\_\_  
 Time and Date Frozen: \_\_\_\_\_

Doc# 277

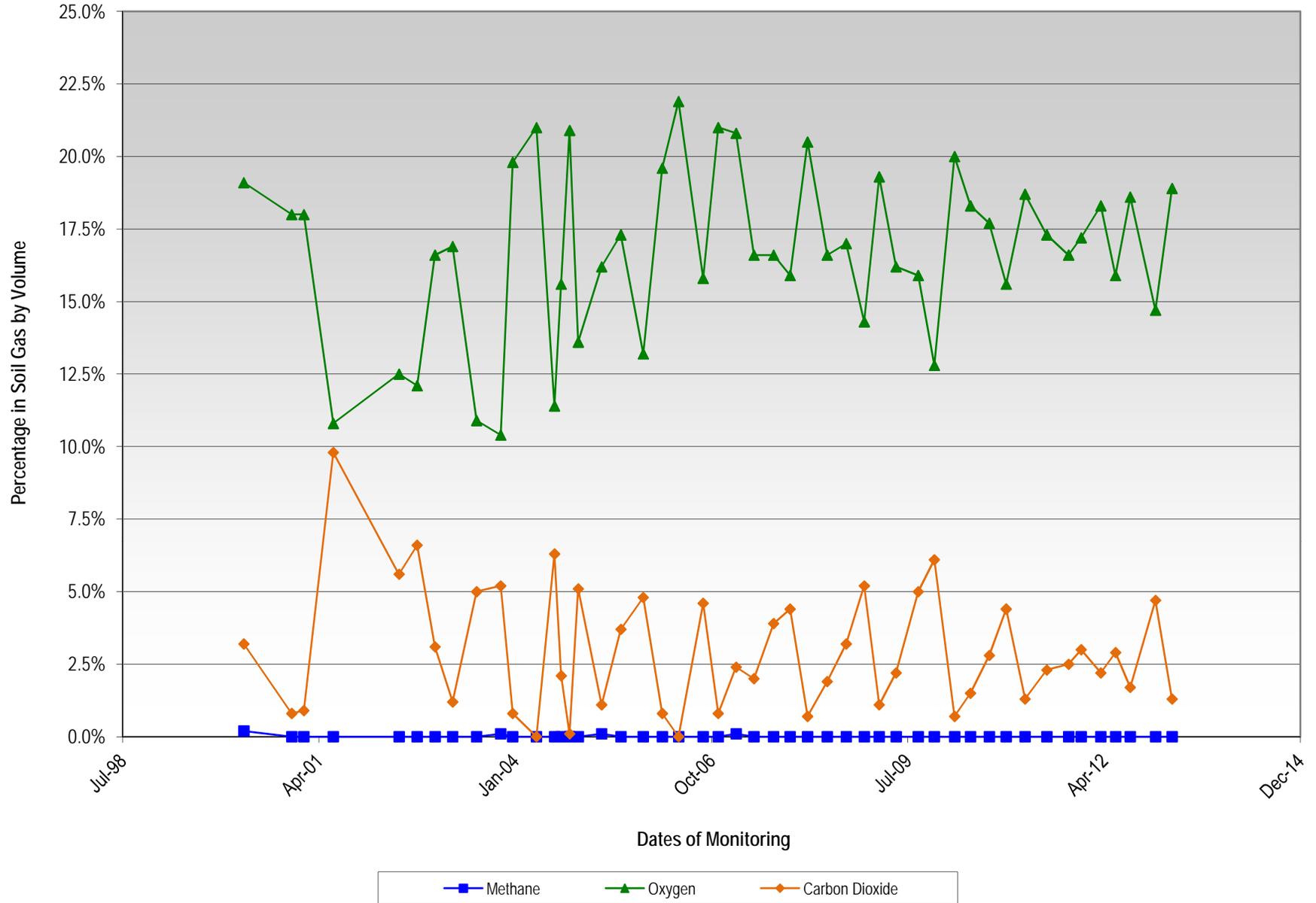
Rev. 3 May 2012

**Appendix C**  
**Soil Gas Parameter Graphs**

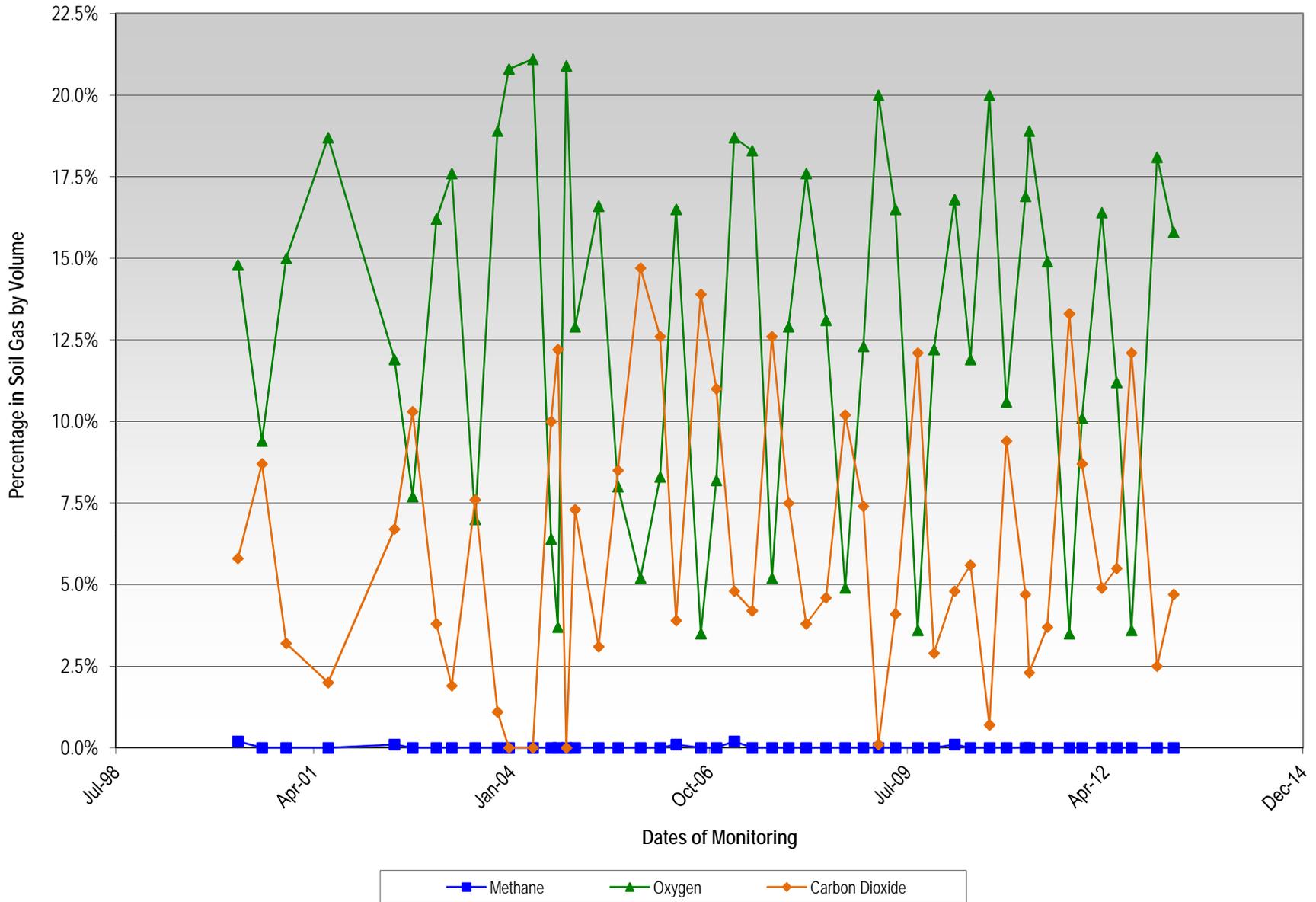
Soil Gas Well EPL1  
Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
Springfield Street School Complex  
Providence, Rhode Island



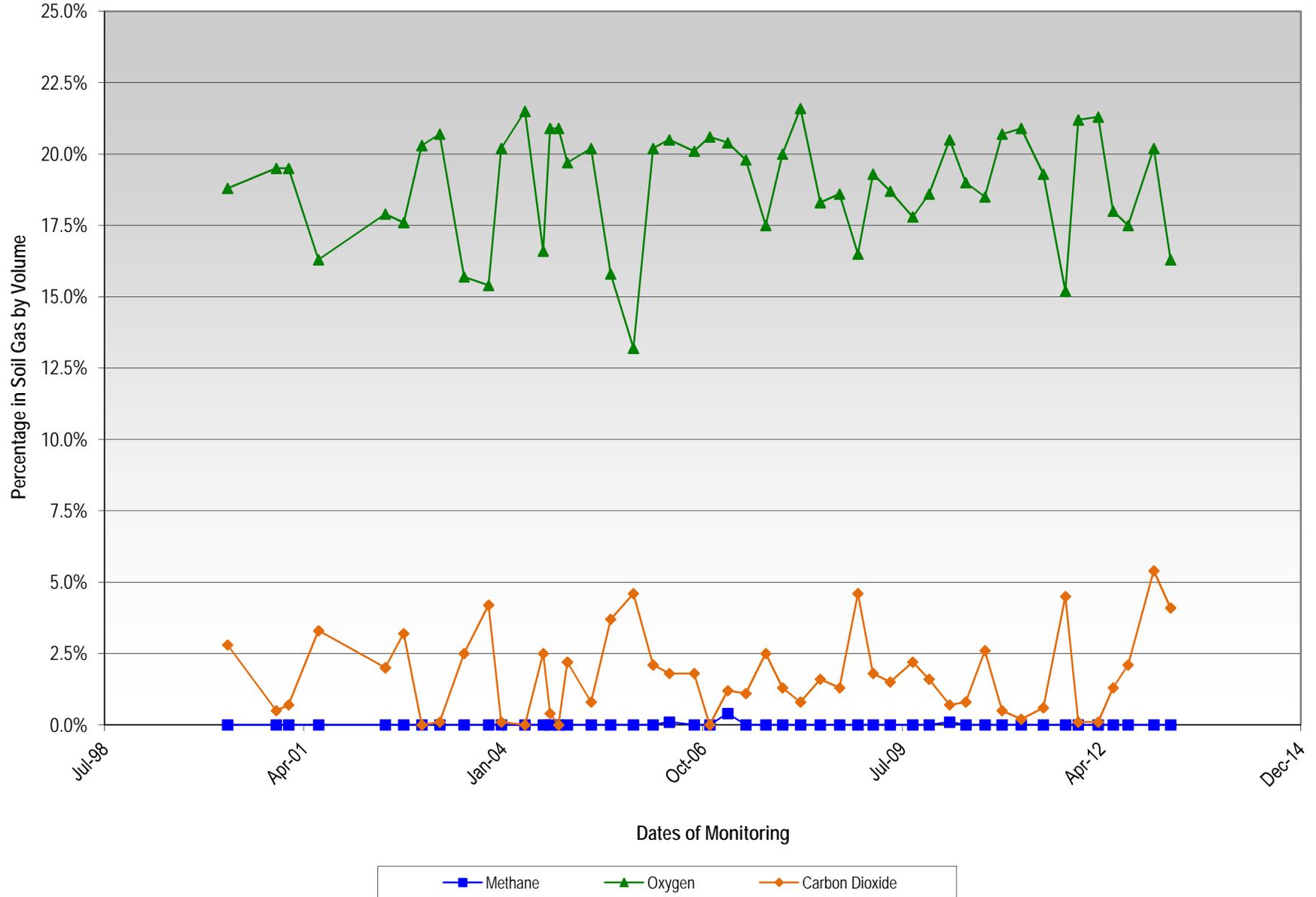
Soil Gas Well EPL4  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island



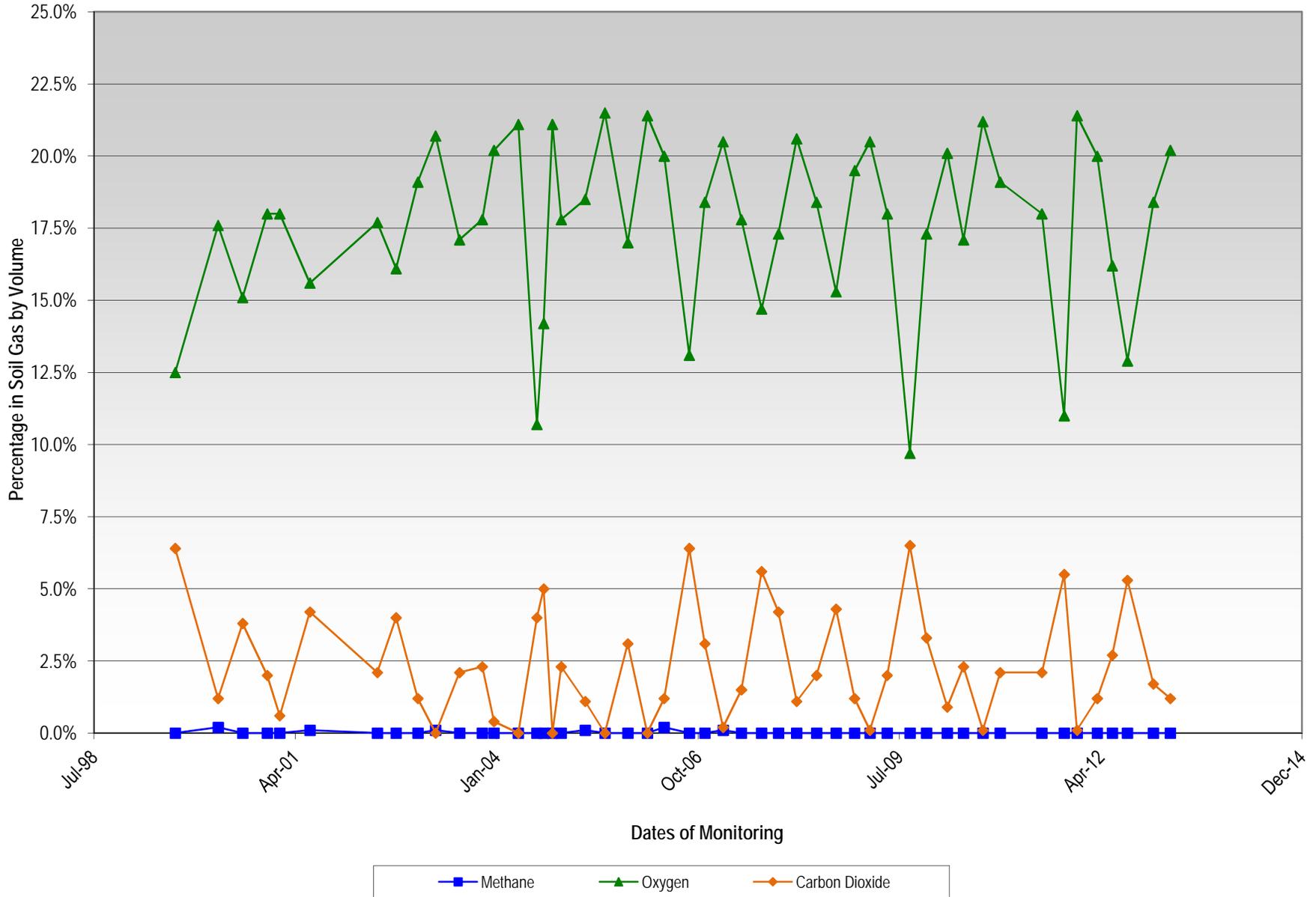
Soil Gas Well MPL5  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island



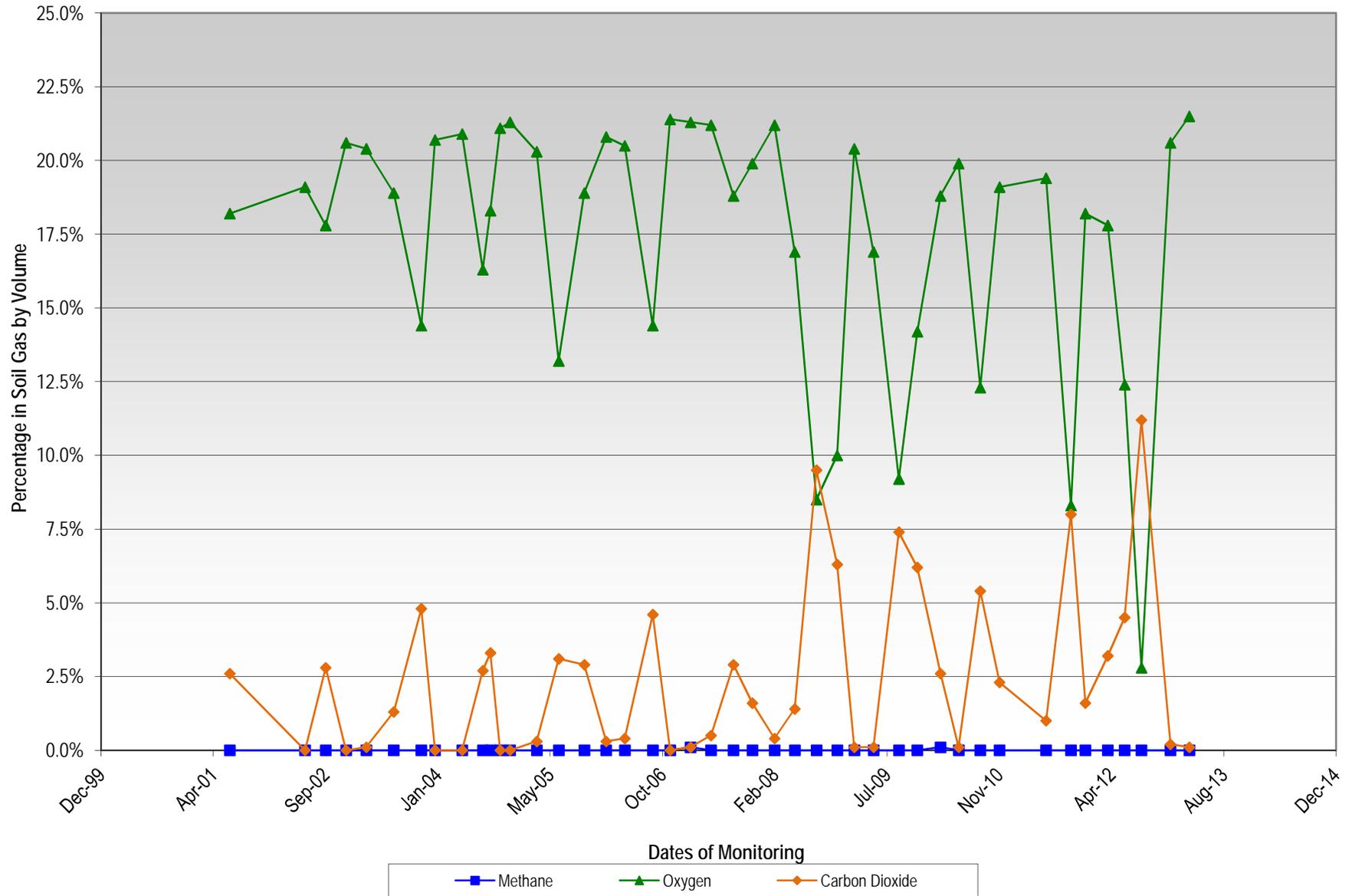
Soil Gas Well MG2  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island



Soil Gas Well WB1  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island



Soil Gas Well WB15  
 Fluctuation in Methane, Oxygen, and Carbon Dioxide Percentages over Time  
 Springfield Street School Complex  
 Providence, Rhode Island



Soil Gas Well MPL-7 Fluctuations in Methane, Oxygen and Carbon Dioxide

