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Post Sub-Slab Depressurization System Installation Vapor Intrusion Evaluation Summary Report

Geneva Former MGP Site
Geneva, New York

March 2010

ARCADIS

Vapor Intrusion Evaluation Summary Report

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1. Introduction

This report is submitted on behalf of NYSEG (New York State Electric & Gas Corporation) and presents laboratory analytical data as well as a summary of building modifications completed to address a potential vapor intrusion concern at the City of Geneva Public Safety Building (PSB) in Geneva, New York (Figure 1). An evaluation of the volatile organic compounds (VOCs) in sub-slab soil vapor, indoor air, and outdoor ambient air at the site was conducted as presented in the ARCADIS letter to New York State Department of Environmental Conservation (NYSDEC) dated July 2008 (Work Plan).

A brief summary of the site background, the sampling methodology and results of sub-slab and indoor air sampling and building modifications are discussed in the following sections.

2. Background

The PSB is located at 255 Exchange Street in Geneva, New York and is partially located on property formerly occupied by a manufactured gas plant (MGP). The vapor intrusion evaluation was initially conducted in 2007 as an element of the remedial investigation of the former MGP, known formally as the Wadsworth Street former MGP site (the site). Follow-up remedial activities and additional vapor intrusion evaluations have been conducted in 2008 & 2009.

Based on results of the vapor intrusion mitigation assessment performed at the City of Geneva's Public Safety Building (PSB) and discussions with NYSDEC and NYSDOH, NYSEG has requested that ARCADIS address vapor intrusion concerns at the facility as described in the Vapor Intrusion Mitigation Evaluation Report prepared by ARCADIS dated May 7, 2008.

A sub-slab depressurization (SSD) system is a mechanical system that creates a lower pressure beneath a floor slab relative to indoor air. This low pressure is created by a fan and a series of piping and slab penetrations. The system is intended to reduce potential vapor migration from the substructure to indoor air. For the PSB, this system is intended to reduce the potential for BTEX and naphthalene to adversely impact PSB indoor air quality through soil vapor intrusion. A SSD system was designed for the northwest quadrant of the facility consistent with the Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October, 2006. The SSD system was installed in accordance with the NYSDOH and NYSDEC approved Work Plan.

3. Sub-Slab Pressure Field Diagnostic Testing Activities

A series of sub-slab pressure field tests were performed to evaluate the ability to induce a sub-slab negative pressure gradient by installation of a SSD vapor intrusion mitigation system (Table 4). The pressure-gradient information is used to design the sub-slab depressurization system and determine the size of mitigation-system fan(s) consistent with the July 2008 Work Plan.

Diagnostic testing was previously performed in four locations within the building to obtain sub-slab pressure gradient results throughout occupied portions of the facility. A summary of the test results including test and vacuum hole locations, pressure gradients, and distance between the vacuum holes and test holes was presented in the Vapor Intrusion Evaluation Report, dated May 2007 (2007 VI Report). The locations of test and vacuum holes used for this evaluation were presented in the 2007 VI Report and are shown on Figure 2.

4. Sub-Slab Depressurization (SSD) System Installation

4.1 Sub-Slab Depressurization System Objectives

The primary objective of the SSD system is to reduce/eliminate the potential for BTEX and naphthalene to enter into the occupied portions of the building from below the floor slab. The SSD system creates a vacuum beneath the floor slab, resulting in lower air pressure beneath the slab relative to indoor air pressure. The SSD system was designed consistent with Section 4 of the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October, 2006. Each SSD device is comprised of a fan-powered vent connected to piping installed through the slab of the PSB. Based on pressure field extension testing results for the entire PSB, the ability to induce a subslab pressure gradient was limited in all areas of the facility with the exception of the northwest quadrant. This is likely due to the presence of hard packed structural fill below the floor slab. Based on these results, the remaining portions of the building are not suitable for a SSD system. In order to minimize the potential for vapor intrusion in areas of the building where a sub-slab pressure gradient could not be established, the building HVAC system has been re-balanced to minimize the negative pressure within the occupied space (above the slab).

4.2 Initial Fan and Suction Point Locations

System extraction points were located based on the results of previously performed pressure field extension testing results and are presented on Figure 2 and in Table 4. Two extraction points were installed through the slab in the northwest corner of the PSB (one in the utility closet in the men's holding cell area and one in the closet in the interview/line-up area). Extraction points were constructed by cutting holes through the building slab, making sure that any vapor barriers were breached and the sub-slab materials were encountered. A pit was excavated at each extraction point, to a depth of approximately 10 inches. Crushed stone was then backfilled around the extraction pipe, and the extraction hole was patched around the piping using polyurethane caulking material to ensure a good seal. To the extent possible, pipe risers were located to minimize the possibility of damage due to building operations.

Depressurization of the two extraction points is accomplished using a single in-line centrifugal fan unit connected to 4-inch diameter PVC piping. The installed fan unit is capable of inducing 0 to 4 inches of water vacuum, while moving 50 to 300 cubic feet per minute (CFM) of air. A liquid gage u-tube manometer is installed on the suction

riser of each extraction point to indicate proper operation of the mitigation system. The manometers are installed at a location where it is highly visible. Building maintenance staff was made aware of the installed warning device and what actions to perform in the event of a system malfunction.

4.3 Mitigation System Discharge Point(s)

The installed fan unit is mounted on an exterior building wall under a weather tight enclosure. A “fan guard” device is provided on the discharge side of the fan to drain condensate water. The specific location of the vent pipe exhaust was field determined and located on the north side of the building, presented on Figure 2. In addition, the following criteria were met during location of the vent pipe exhaust:

- Above the highest eve of the roof a minimum of 12 inches above the surface of the roof
- A minimum of 10 feet above ground level
- A minimum of 10 feet away from any opening that is less than 2 feet below the exhaust point
- A minimum of 10 feet from any adjoining buildings or HVAC intakes or supply diffusers

4.4 Post SSD System Installation Communication Testing

Following installation of the SSD system, four points were tested in the northwest quadrant of the PSB to test the effective pressure gradient being imposed by the SSD system. Communication testing was conducted on November 20, 2008 producing unsatisfactory results in one of the four test locations. The negative pressure was assumed to be attributed to the exhaust fans (PRE-5 – PRE-7). As a result, modifications to the flow rates of these fans were proposed.

4.5 Installation of Three Variable Speed Switches

On March 27, 2009, a variable speed switch was installed on each of the three ventilator motors PRE-5, PRE-6, and PRE-7. The switches control the motor speed and the airflow exhausted from each unit. The three variable speed switches were installed to replace existing on/off fan switches to improve operation control. The switches are installed and located on the wall of the electrical utility room within the PSB. ARCADIS completed the installation of the variable speed switches under a sub-

contract agreement with HMI Mechanical Systems, Inc. HMI is currently providing operations and maintenance services for the exhaust system at this facility to the City of Geneva.

4.6 Post Switch-Installation Communication Testing

Following installation of the three variable speed switches for the ventilator motors, communication testing was conducted on March 27, 2009 at the four existing diagnostic test points located in the northwest quadrant of the PSB. Unsatisfactory results in one of the four test locations during the second round of communication testing likely resulted from poor sub-slab vapor movement conditions. As a result, the installation of an additional suction point was proposed.

4.7 SSD System Modifications

On April 13, 2009, a third suction point was installed in the northwest quadrant of the PSB. Depressurization was accomplished by connecting the third suction point to the existing centrifugal fan unit operating the two previously installed suction points. The additional third suction point connects to the fan unit with 4-inch diameter PVC piping. A liquid gage u-tube manometer was installed in the suction riser to indicate proper operation of the SSD system. The manometer is installed at a location where it is highly visible and building maintenance staff will be made aware of the warning device and what actions to perform in the event of a system malfunction.

4.8 Post SSD System Modification Communication Testing

Following modifications to the SSD system including adding a third suction point, communication testing was conducted on April 13, 2009 at the four existing diagnostic test points. The third round of communication test data indicates unsatisfactory results in one of the four test points, likely due to PSB exhaust settings. As a result, additional adjustments to the exhaust fans were proposed.

4.9 Adjustments to Variable Speed Switches and Damper Valves

One April 13, 2009, the three previously installed variable speed fan switches were strategically adjusted to reduce the rate at which the exhaust fans are operating. By reducing the amount of air exhausted by the fans, the air pressure in the occupied portion of the PSB will remain slightly higher. The adjustments made to the building's fans help to achieve the required pressure differential between sub-slab and the

occupied portions of the PSB. The SSD system suction point damper valves were also adjusted to help achieve the required pressure differential.

4.10 Post Variable Speed Switches Adjustment Communication Testing

Following adjustment of the PSB exhaust fan switches, a fourth round of communication testing was conducted on April 16, 2009. Observed pressure differentials between the sub-slab and occupied portions of the PSB were found to be satisfactory (pressure differentials of 0.004 inches or greater were observed at all four communication points).

5. Post SSD System Installation Sampling Activities

Sample collection locations and protocols as well as analytical methods were consistent with the Work Plan. Sub-slab vapor, indoor air, and outdoor ambient air samples were collected at the site on May 14, 2009. A description of the sample locations and the sample methodology is provided below.

5.1 Sampling Locations

Seven samples were collected at the same locations as the previous sampling event as described in the May 2007 Vapor Intrusion Evaluation Report. Post SSD system installation sample locations were consistent with the 2007 sample locations for comparative purposes.

5.2 Sampling Methods

5.2.1 Sub-Slab Vapor

Temporary sub-slab vapor probes were installed and samples were collected using the methods described in the approved Work Plan and in accordance with the NYSDOH VI Guidance. For each sample, a hand held hammer drill was used to score a 3/8-inch hole through the concrete slab to approximately four inches into the sub-slab material. New dedicated Teflon tubing was then inserted below the concrete slab, approximately two inches into the sub-slab material. The tubing was sealed to the surrounding concrete slab using inert modeling clay to ensure an air tight seal between the sample tubing and the concrete slab. Consistent with the Work Plan, a helium tracer test was completed prior to sampling each vapor point to test the integrity of the probe installation and all seals in the sample train. This tracer test is detailed in the approved Work Plan and amendments, and was conducted concurrently with purging each sample point. A 60ml syringe was used to purge approximately five volumes of air through the probe and tubing and was discharged outside. Upon successful completion of the helium tracer test and purge, a batch certified pre-cleaned six-liter SUMMA canister provided by TestAmerica was used to collect the sub-slab soil gas sample. The SUMMA canister was attached and allowed to collect a sample using a flow controller set for a two-hour period, consistent with the indoor air sample collection period. Samples were submitted to the TestAmerica for analysis using USEPA Method TO-15.

5.2.2 Indoor Air and Outdoor Ambient Air

All indoor air and outdoor ambient air samples were collected in accordance with the approved Work Plan and amendments, and NYSDOH (2006) VI Guidance using batch certified six-liter SUMMA canisters obtained from TestAmerica. All SUMMA canisters were placed at approximately breathing height (3 to 5 feet above grade) by propping on stools or boxes. The canisters were calibrated to collect samples for a two-hour period. Indoor air and outdoor ambient air samples were submitted to TestAmerica Laboratories for analysis using USEPA Method TO-15.

5.3 Additional Site Activities

During sample collection activities, ARCADIS conducted a visual inspection of the occupied area to identify chemicals, cleaning agents, etc., that may contribute to background chemical constituents detected in the analytical results. During this inspection, ARCADIS identified various containerized chemicals in the custodial closet (mostly small quantities of paint and pest killers), as presented in Attachment E. Photographs of the identified containerized chemicals are included in Attachment B Photo Log.

Photographs taken by ARCADIS personnel during the sampling activities are included in Attachment B. Copies of the field sampling logs are presented in Attachment C.

After the sample collection was completed, ARCADIS cleaned the work area and restored the foundation penetrations (i.e., cored concrete holes) for sub-slab vapor sampling using non-shrink grout.

5.4 Sample Analysis

Indoor air and sub-slab foundation wall soil gas samples were analyzed in accordance with USEPA Compendium Method TO-15, titled *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air – Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GS/MS).* The analysis was performed by TestAmerica Laboratories, Inc. of Knoxville, Tennessee, which has current National Environmental Laboratory Accreditation Program (NELAP) certification and is accredited in the State of New York for conducting analyses in accordance with EPA Compendium Method TO-15.

Each sample was analyzed for volatile organic compounds (VOCs) included in the laboratory's standard TO-15 Target Analyte List, plus n-alkanes and VOC tentatively-identified compounds (TICs) to provide additional data (if needed) to help differentiate between potential sources. Sub-slab vapor, indoor air, and ambient air analytical results for VOCs are presented in Table 1.

6. Sampling Results

This section presents the results of the sub-slab soil gas, indoor air, and ambient air sampling, including a comparison of the data to relevant screening values for both MGP and non-MGP related compounds. Complete analytical results from the laboratory are provided in Appendix A. The screening values used for the comparison of MGP related compounds include data from the NYSDOH Fuel Oil Heated Homes Indoor Air Study, USEPA Indoor Air Background Level Criteria, and USEPA Building Assessment and Survey and Evaluation (BASE) VOCs Master List concentrations. The screening values used for the comparison of non-MGP related compounds include data from the NYSDOH Fuel Oil Heated Homes Indoor Air Study, USEPA Indoor Air Background Level Criteria, USEPA BASE VOCs Master List concentrations as well guidance values provided in Matrices 1 and 2 of the New York State Department of Health (NYSDOH) document entitled New York State Guidance for Evaluating Soil Vapor Intrusion in the State of New York, 2006. The USEPA BASE VOCs Master List is a summary of a study conducted between 1994 and 1996 that measured "average" VOC levels in various public and commercial office buildings across the country.

A discussion of sampling and analytical results for MGP-related compounds including BTEX and Naphthalene is presented below.

6.1 Sub-Slab Vapor, Indoor Air, and Outdoor Ambient Air Results for MGP-related Compounds

Tables 1 and 2 present the results of the sub-slab vapor indoor air, and outdoor ambient sampling results. Each of the BTEX compounds and Naphthalene were detected in one or more sub-slab vapor and/or indoor air samples. In general, the detectable concentrations for BTEX compounds and Naphthalene for both subslab and indoor air sample results were generally lower in 2009 (post SSD system installation) as compared to concentrations detected during the 2007 sampling event.

One indoor air sample (IA-2-09) detected levels of Ethylbenzene, m-Xylene & p-Xylene, and o-Xylene above the results for the samples collected from this location in 2007. However, each of these three compounds were detected at concentrations below the concentrations published in the NYSDOH Oil heated Homes Indoor Air study. Additionally, all indoor air samples were below the published USEPA Indoor Air Background concentrations as well as the concentrations published in the USEPA BASE VOCs Master List concentrations.

6.1.1 Discussion of Non-MGP-Related Compounds

The following discussion is a summary of non-MGP-related compounds that were detected during the TO-15 analysis and have been included for informational purposes only.

One VOC constituent (Methylene Chloride) was detected in indoor air (Sample IA-1-09) at a concentration slightly above the 90th percentile of background indoor air levels observed by the USEPA in public and commercial office buildings as referenced in Section 3.2.4 of the 2006 NYSDOH Soil Vapor Intrusion Guidance. This result is also below the NYSDOH Indoor Air Guidance Value as well as the USEPA BASE VOCs Master List concentration value.

Three constituents (1,4-Dichlorobenzene, Carbon Tetrachloride, and Methylene Chloride) were detected in indoor air in 2009 at concentrations slightly above the 75th percentile of NYSDOH Indoor Air Background values. Concentrations of Carbon Tetrachloride and 1,4-Dichlorobenzene was also below both the USPEA Indoor Air Background concentration and the USEPA BASE VOCs Master List concentration.

The NYSDOH vapor intrusion guidance provides two matrices to use as tools for decision making when soil vapor may be entering a building. As summarized in Table 3.3 of this document, four chemicals (Carbon Tetrachloride, Tetrachloroethene (PCE), 1,1,1-Trichlorothane (1,1,1-TCA), and Trichloroethene (TCE)) are assigned to one of two decision making matrices, as shown in Table 3 of this report.

Carbon Tetrachloride, PCE, 1,1,1-TCA, and TCE were not detected at concentrations in indoor air or sub-slab vapor in 2009 that would require further monitoring or mitigation in accordance with the NYSDOH Guidance document. It should be noted, however, that the concentration of Carbon Tetrachloride did exceed the 75th percentile of indoor air background concentrations as published in the NYSDOH Fuel Oil Heated Homes Indoor Air Study.

7. Summary and Conclusions

An evaluation of sub-slab, indoor air, and ambient air sampling results were used to determine the effectiveness of the SSD system at reducing the potential for soil vapor intrusion of MGP related COPC (specifically BTEX and naphthalene). Consistent with the August 2007 Vapor Intrusion Evaluation Report prepared by ARCADIS, samples were collected in 2009 from three co-located sub-slab and indoor air samples and one ambient air sample collected outside the building.

Building modifications were completed to minimize the potential for vapor intrusion of MGP related COPC which consisted of designing and installing a SSD system for the northwest quadrant of the facility as well as adjustments (i.e., rebalancing), the HVAC system throughout the facility. Additionally, adjustments to the buildings exhaust ventilation systems were performed to reduce the negative pressure within the building, thereby further reducing the potential for vapor intrusion.

These building modifications have demonstrated a reduction of BTEX and naphthalene concentrations in the indoor air of the PSB based on a comparison of the 2007 and 2009 analytical results. The continued operation of the SSD system combined with operating the HVAC system at current settings will minimize the potential for soil vapor intrusion into the facility.

7.1 Operation Maintenance & Monitoring (OM&M)

Routine operation maintenance and monitoring (OM&M) is required for operation of the SSD system. Maintenance and monitoring activities should occur every 18 months. OM&M activities will include checking the operation of the mitigation fan, an evaluation of the manometer installed on the vapor intrusion mitigation system riser, and verifying that the set points of the variable speed switches for the ventilating units have not been changed.

8. References

NYSDOH. 2006. Guidance for Evaluating Soil Vapor Intrusion in the State of New York. New York State Department of Health, Center for Environmental Health, Bureau of Environmental Exposure Investigation. October 2006.

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Tables

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Table 1

Summary of Air Sample Analytical Results

Table 1

New York State Electric Gas Corporation
Geneva Former MGP Site
Geneva, New York

Summary of Air Sample Analytical Results

Sample Name: / Date Collected:	NYSDOH Fuel Oil Heated Homes Outdoor Air	NYSDOH Fuel Oil Heated Homes Indoor Air	NYSDOH Indoor Air Guidance Value	USEPA Indoor Air Background Level	Units	May 2007 AA-1	AA-1-09 05/14/09	May 2007 IA-1	IA-1-09 05/14/09	May 2007 IA-2	IA-2-09 05/14/09	May 2007 IA-3	IA-3-09 05/14/09	May 2007 SS-1	SS-1-09 05/14/09	May 2007 SS-2	SS-2-09 05/14/09	May 2007 SS-3	SS-3-09 05/14/09
TO-15 MGP-RELATED COMPOUNDS																			
Benzene	2.2	5.9	- -	9.4	ug/m3	0.50 J	0.65	1.0	0.56	1.2	0.57	0.97	0.58	0.71 [0.44 J]	0.73 [0.64]	4.0	0.88	**11**	0.63
Ethylbenzene	0.5	2.8	- -	5.7	ug/m3	0.27 J	0.47	**0.66 J**	0.6	0.59 J	0.7	**1.2**	0.76	**16 [10]**	**6.5 [6.4]**	**7.0**	2.8	**61**	1.8
m-Xylene & p-Xylene	0.5	4.6	- -	- -	ug/m3	*0.93*	*1.5*	2.0	1.9	1.9	2.2	4.1	2.5	**89 [53]**	**28 [28]**	**33**	**18**	**260**	**6.9**
Naphthalene	- -	- -	- -	5.1	ug/m3	0.50 J	<1	<2.6	<1	<2.6	<1	<2.6	<1	3.6 [1.7 J]	1.1 [1.1]	23	<1	2.4 J	<1
o-Xylene	0.6	3.1	- -	7.9	ug/m3	0.30 J	0.53	0.69 J	0.61	0.72 J	0.73	1.3	0.87	**33 [20]**	**10 [9.9]**	**10**	**5.6**	**92**	2.5
Toluene	2.4	25	- -	43	ug/m3	0.74	*2.9*	2.4	2.2	2.5	2.4	**26**	2.7	5.3 J [3.2 J]	4.3 [4.3]	17	6.3	**68**	3.8
TO-15 NON-MGP RELATED COMPOUNDS																			
1,1,1-Trichloroethane	0.3	1.1	- -	20.6	ug/m3	<1.1	<0.44	<1.1	<0.44	<1.1	<0.44	<1.1	<0.44	<1.1 [<1.1]	<0.44 [<0.44]	**11**	**2.4**	**23**	<0.44
1,1,2,2-Tetrachloroethane	0.25	0.25	- -	- -	ug/m3	<1.4	<0.55	<1.4	<0.55	<1.4	<0.55	<1.4	<0.55	<1.4 [<1.4]	<0.55 [<0.55]	<1.4	<0.55	<1.4	<0.55
1,1,2-Trichloroethane	0.25	0.25	- -	1.5	ug/m3	<1.1	<0.44	<1.1	<0.44	<1.1	<0.44	<1.1	<0.44	<1.1 [<1.1]	<0.44 [<0.44]	<1.1	<0.44	**0.70 J**	<0.44
1,1,2-Trichlorotrifluoroethane	- -	- -	- -	- -	ug/m3	0.49 J	0.67	0.72 J	0.63	0.63 J	<0.61	0.81 J	0.62	0.61 J [0.58 J]	0.62 [<0.61]	0.67 J	0.63	<1.1	0.63
1,1-Dichloroethane	0.25	0.25	- -	0.7	ug/m3	<0.81	<0.32	<0.81	<0.32	<0.81	<0.32	<0.81	<0.32	<0.81 [<0.81]	<0.32 [<0.32]	<0.81	<0.32	<0.81	<0.32
1,1-Dichloroethene	0.25	0.25	- -	1.4	ug/m3	<0.79	<0.32	<0.79	<0.32	<0.79	<0.32	<0.79	<0.32	<0.79 [<0.79]	<0.32 [<0.32]	<0.79	<0.32	<0.79	<0.32
1,2,3-Trimethylbenzene	- -	- -	- -	- -	ug/m3		<0.39		<0.39		0.42		0.6		1.3 [1.1]		0.53		0.84
1,2,4-Trichlorobenzene	0.25	0.25	- -	6.8	ug/m3	<7.4	<3	**2.9 J**	<3	**0.76 J**	<3	**0.75 J**	<3	**0.76 J [2.0 J]**	<3 [<3]	**1.6 J**	<3	<7.4 J	<3
1,2,4-Trimethylbenzene	0.8	4.3	- -	9.5	ug/m3	0.55 J	0.45	0.55 J	<0.39	0.53 J	0.56	0.47 J	0.76	**7.3 [5.1]**	3.2 [3]	**8.1**	1.7	**13**	1.1
1,2-Dibromoethane (EDB)	- -	- -	- -	- -	ug/m3	<1.5	<0.61	<1.5	<0.61	<1.5	<0.61	<1.5	<0.61	<1.5 [<1.5]	<0.61 [<0.61]	<1.5	<0.61	<1.5	<0.61
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.25	0.25	- -	- -	ug/m3	<1.4	<0.56	<1.4	<0.56	<1.4	<0.56	<1.4	<0.56	<1.4 [<1.4]	<0.56 [<0.56]	<1.4	<0.56	<1.4	<0.56
1,2-Dichlorobenzene	0.25	0.25	- -	1.2	ug/m3	<1.2	<0.48	<1.2	<0.48	<1.2	<0.48	<1.2	<0.48	<1.2 [0.58 J]	<0.48 [<0.48]	<1.2	<0.48	<1.2	<0.48
1,2-Dichloroethane	0.25	0.25	- -	0.9	ug/m3	<0.81	<0.32	<0.81	<0.32	<0.81	<0.32	<0.81	<0.32	<0.81 [<0.81]	<0.32 [<0.32]	<0.81	<0.32	<0.81	<0.32
1,2-Dichloropropane	0.25	0.25	- -	1.6	ug/m3	<0.92	<0.37	<0.92	<0.37	<0.92	<0.37	<0.92	<0.37	<0.92 [<0.92]	<0.37 [<0.37]	<0.92	<0.37	<0.92	<0.37
1,3,5-Trimethylbenzene	0.3	1.7	- -	3.7	ug/m3	<0.98	<0.39	<0.98	<0.39	0.33 J	<0.39	<0.98	<0.39	**2.6 [1.9]**	1.3 [1.2]	**3.5**	1.1	**7.1**	<0.39
1,3-Dichlorobenzene	0.25	0.25	- -	2.4	ug/m3	<1.2	<0.48	<1.2	<0.48	<1.2	<0.48	<1.2	<0.48	<1.2 [<1.2]	<0.48 [<0.48]	<1.2	<0.48	<1.2	<0.48
1,4-Dichlorobenzene	0.25	0.5	- -	5.5	ug/m3	<1.2	<0.48	<1.2	**2.5**	<1.2	**2.9**	<1.2	0.49	<1.2 [0.43 J]	**1.3 [1.3]**	**1.6**	**1.3**	**3.9**	**0.6**
1-Methylnaphthalene	- -	- -	- -	- -	ug/m3		<5.8		<5.8		<5.8		<5.8		<5.8 [<5.8]		<5.8		<5.8
2,2,4-Trimethylpentane	- -	- -	- -	- -	ug/m3		<0.93		<0.93		<0.93		<0.93		<0.93 [<0.93]		<0.93		<0.93
2-Methylbutane	- -	- -	- -	- -	ug/m3		0.96		1.7		1.4		1.8		1.6 [1.4]		14		2.8
2-Methylnaphthalene	- -	- -	- -	- -	ug/m3		<5.8		<5.8		<5.8		<5.8		<5.8 [<5.8]		<5.8		<5.8
Bromomethane	0.25	0.25	- -	1.7	ug/m3	<0.78	<0.31	<0.78	<0.31	<0.78	<0.31	<0.78	<0.31	<0.78 [<0.78]	<0.31 [<0.31]	<0.78	<0.31	<0.78	<0.31
Carbon Tetrachloride	0.6	0.6	- -	1.3	ug/m3	0.42 J	***0.67***	**0.67 J**	**0.65**	**0.79 J**	**0.68**	**0.61 J**	0.6	**0.62 J [0.40 J]**	**0.7 [<0.5]**	0.27 J	**0.61**	<1.3	0.58
Chlorobenzene	0.25	0.25	- -	0.9	ug/m3	<0.92	<0.37	<0.92	<0.37	<0.92	<0.37	<0.92	<0.37	<0.92 [<0.92]	<0.37 [<0.37]	<0.92	<0.37	<0.92	<0.37
Chloroethane	0.25	0.25	- -	1.1	ug/m3	<0.53	<0.21	<0.53	<0.21	<0.53	<0.21	<0.53	<0.21	<0.53 [<0.53]	**0.36 [<0.21]**	<0.53	<0.21	<0.53	<0.21
Chloroform	0.25	0.5	- -	1.1	ug/m3	<0.98	<0.39	<0.98	<0.39	<0.98	<0.39	<0.98	<0.39	<0.98 [<0.98]	**1.4 [<0.39]**	<0.98	0.41	0.32 J	<0.39
Chloromethane	1.8	1.8	- -	3.7	ug/m3	1.1	1.1	1.5	0.97	1.7	0.84	1.5	1.1	0.39 J [<1.0]	**2.3 [<0.41]**	0.95 J	0.41	<1.0	0.9
cis-1,2-Dichloroethene	0.25	0.25	- -	1.9	ug/m3	<0.79	<0.32	<0.79	<0.32	<0.79	<0.32	<0.79	<0.32	<0.79 [<0.79]	<0.32 [<0.32]	<0.79	<0.32	<0.79	<0.32
cis-1,3-Dichloropropene	0.25	0.25	- -	2.3	ug/m3	<0.91	<0.36	<0.91	<0.36	<0.91	<0.36	<0.91	<0.36	<0.91 [<0.91]	<0.36 [<0.36]	<0.91	<0.36	<0.91	<0.36
Dichlorodifluoromethane	4.2	4.1	- -	16.5	ug/m3	2.1	2.4	2.9	2.3	2.4	2.4	3.4	2.2	2.5 [2.2]	2.3 [2.2]	2.7	2.4	3.4	2.2
Hexachlorobutadiene	- -	- -	- -	6.8	ug/m3	<11	<4.3	<11	<4.3	<11	<4.3	<11	<4.3	<11 [<11]	<4.3 [<4.3]	<11	<4.3	<11	<4.3
Indane	- -	- -	- -	- -	ug/m3		<0.39		<0.39		<0.39		<0.39		<0.39 [<0.39]		<0.39		<0.39
Indene	- -	- -	- -	- -	ug/m3		<0.76		<0.76		<0.76		<0.76		<0.76 [<0.76]		<0.76		<0.76
Isopropylbenzene	0.25	0.4	- -	- -	ug/m3	<2.0	<0.79	<2.0	<0.79	<2.0	<0.79	<2.0	<0.79	**2.7 [1.7 J]**	<0.79 [<0.79]	**0.57 J**	<0.79	**9.5**	<0.79
Methyl tert-butyl ether	- -	- -	- -	11.5	ug/m3	<3.6	<1.4	<3.6	<1.4	<3.6	<1.4	<3.6	<1.4	<3.6 [<3.6]	<1.4 [<1.4]	0.47 J	<1.4	1.7 J	<1.4
Methylene Chloride	0.7	6.6	60	10	ug/m3	<1.7	*3.5*	<1.7	**13**	<1.7	3.1	<1.7	**8**	<1.7 [<1.7]	3.6 [2.2]	<1.7	1.5	<1.7	**9.8**
n-Butane	- -	- -	- -	- -	ug/m3	1.0	0.67	2.6	25	2.3	21	3.4	340 D	2.6 [1.8]	4.8 [3.7]	33	6.3	61	770 D
n-Decane	- -	- -	- -	17.5	ug/m3	<5.8	<2.3	0.35 J	<2.3	<5.8	<2.3	2.2 J	4	4.5 J [3.0 J]	5 [5]	21	9.1	88	5.6
n-Dodecane	- -	- -	- -	- -	ug/m3	<7.0	<2.8	0.87 J	4.7	<7.0	9.6	1.2 J	64	20 [16]	3.6 [4.1]	19	<2.8	28	110
n-Heptane	1.9	7.6	- -	- -	ug/m3	<2.0	<0.82	0.40 J	<0.82	0.43 J	<0.82	0.61 J	<0.82	2.0 J [1.3 J]	1.6 [1.4]	**23**	**34**	**42**	1.1
n-Hexane	1	5.9	- -	10.2	ug/m3	0.20 J	<0.7	0.42 J	0.82	0.37 J	<0.7	0.47 J	<0.7	2.8 [2.1]	3.3 [1.2]	**19**	**29**	**42**	0.92
n-Octane	- -	- -	- -	- -	ug/m3	<1.9	<0.75	<1.9	<0.75	<1.9	<0.75	0.38 J	<0.75	2.2 [1.2 J]	1.8 [1.8]	26	35	88	<0.75
Nonane	- -	- -	- -	7.8	ug/m3	<2.6	<1	<2.6	<1	<2.6	<1	0.31 J	1.8	3.2 [1.9 J]	2.2 [2.2]	27	18	59	2.4
n-Undecane	- -	- -	- -	22.6	ug/m3	<6.4	<2.6	0.38 J	<2.6	<6.4	2.7	0.76 J	11	13 [9.9]	3.2 [3.7]	21	<2.6	34	17
Pentane	- -	- -	- -	- -	ug/m3	0.62 J	<1.2	1.3 J	<1.2	0.95 J	<1.2	0.97 J	<1.2	1.5 J [1.3 J]	2.8 [<1.2]	19	11	38	<1.2
Styrene	0.25	0.6	- -	1.9	ug/m3	<0.85	<0.34	**0.63 J**	<0.34	0.18 J	<0.34	0.26 J	0.45	0.25 J [<0.85]	<0.34 [<0.34]	0.46 J	<0.34	**1.1**	0.45
Tetrachloroethene	0.3	1.1	100	15.9	ug/m3	<1.4	***2.9***	<1.4	<0.54	0.31 J	<0.54	0.24 J	<0.54	0.77 J [1.9]	<0.54 [<0.54]	**14**	**3.1**	**9.1**	<0.54
Thiophene	- -	- -	- -	- -	ug/m3		<0.28		<0.28		<0.28		<0.28		<0.28 [<0.28]		<0.28		<0.28
trans-1,3-Dichloropropene	0.25	0.25	- -	1.3	ug/m3	<0.91	<0.36	<0.91	<0.36	<0.91	<0.36	<0.91	<0.36	<0.91 [<0.91]	<0.36 [<0.36]	<0.91	<0.36	<0.91	<0.36
Trichloroethene	0.25	0.25	5	4.2	ug/m3	<1.1	***1.1***	<1.1	<0.21	<1.1	<0.21	**0.72 J**	<0.21	<1.1 [<1.1]	**0.44 [0.36]**	<1.1	<0.21	0.20 J	<0.21
Trichlorofluoromethane	2.2	5.4	- -	18.1	ug/m3	1.1	1.6	1.4	1.4	1.2	1.3	1.7	1.4	1.2 [1.3]	1.3 [1.2]	1.2	1.5	1.5	1.4
Vinyl Chloride	0.25	0.25	- -	1.9	ug/m3	<0.51	<0.2	<0.51	<0.2	<0.51	<0.2	<0.51	<0.2	<0.51 [<0.51]	<0.2 [<0.2]	<0.51	<0.2	<0.51	<0.2

Notes:
1. Italic values indicate exceedance of NYSDOH Fuel Oil Heated Homes Outdoor Air criteria (Ambient Air Samples Only)
2. Bold values indicate exceedance of NYSDOH Fuel Oil Heated Homes Indoor Air criteria
3. Grey shading indicates exceedance of USEPA Indoor Air Background Level criteria

Table 1

New York State Electric Gas Corporation
Geneva Former MGP Site
Geneva, New York

Summary of Air Sample Analytical Results

Qualifier Type	Lab Qualifiers	Definition
Inorganic	D	
Inorganic	U	The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

Table 2

Potential VI Impacts

Table 2

New York State Electric Gas Corporation
Geneva Former MGP Site
Geneva, New York

Potential VI Impacts
Summary of Air Sample Analytical Results

Sample Name: / Date Collected:	NYSDOH Fuel Oil Heated Homes Outdoor Air	NYSDOH Fuel Oil Heated Homes Indoor Air	NYSDOH Indoor Air Guidance Value	USEPA Indoor Air Background Level	USEPA Base VOCs Master List Level	Units	May 2007 SS-1	May 2009 SS-1	May 2007 IA-1	May 2009 IA-1	May 2007 SS-2	May 2009 SS-2	May 2007 IA-2	May 2009 IA-2	May 2007 SS-3	May 2009 SS-3	May 2007 IA-3	May 2009 IA-3
TO-15 MGP-RELATED COMPOUNDS																		
Benzene	2.2	5.9	- -	9.4	9.4	ug/m3	*2b	0.73 [0.64]	*2b	0.56	*4.0*	0.88	1.2	0.57	***11***	0.63	0.97	0.58
Ethylbenzene	0.5	2.8	- -	5.7	5.7	ug/m3	***16 [10]***	***6.5 [6.4]***	***0.66 J***	*0.6*	***7.0***	*2.8*	*0.59 J*	*0.7*	***61***	*1.8*	***1.2***	*0.76*
m-Xylene & p-Xylene	0.5	4.6	- -	- -	- -	ug/m3	***89 [53]***	***28 [28]***	*2.0*	*1.9*	***33***	***18***	*1.9*	*2.2*	***260***	***6.9***	*4.1*	*2.5*
Naphthalene	- -	- -	- -	5.1	5.1	ug/m3	3.6 [1.7 J]	1.1 [1.1]	<2.6	<1	23	<1	<2.6	<1	2.4 J	<1	<2.6	<1
o-Xylene	0.6	3.1	- -	7.9	7.9	ug/m3	***33 [20]***	***10 [9.9]***	*0.69 J*	*0.61*	***10***	***5.6***	*0.72 J*	*0.73*	***92***	*2.5*	*1.3*	*0.87*
Toluene	2.4	25	- -	43	43	ug/m3	*5.3 J [3.2 J]*	*4.3 [4.3]*	2.4	2.2	*17*	*6.3*	*2.5*	2.4	***68***	*3.8*	***26***	*2.7*
TO-15 NON-MGP-RELATED COMPOUNDS																		
1,1,1-Trichloroethane	0.3	1.1	- -	20.6	20.6	ug/m3	<1.1 [<1.1]	<0.44 [<0.44]	<1.1	<0.44	***11***	***2.4***	<1.1	<0.44	***23***	<0.44	<1.1	<0.44
1,1,2-Trichloroethane	0.25	0.25	- -	1.5	1.5	ug/m3	<1.1 [<1.1]	<0.44 [<0.44]	<1.1	<0.44	<1.1	<0.44	<1.1	<0.44	***0.70 J***	<0.44	<1.1	<0.44
1,1,2-Trichlorotrifluoroethane	- -	- -	- -	- -	- -	ug/m3	*2b	*2b	*2b	*2b	0.67 J	0.63	0.63 J	<0.61	*2b	0.63	*2b	0.62
1,2,3-Trimethylbenzene	- -	- -	- -	- -	- -	ug/m3		1.3 [1.1]		<0.39		0.53		0.42		0.84		0.6
1,2,4-Trichlorobenzene	0.25	0.25	- -	6.8	6.8	ug/m3	*2b	<3 [<3]	*2b	<3	***1.6 J***	<3	***0.76 J***	<3	<7.4 J	<3	***0.75 J***	<3
1,2,4-Trimethylbenzene	0.8	4.3	- -	9.5	9.5	ug/m3	***7.3 [5.1]***	*3.2 [3]*	0.55 J	<0.39	***8.1***	*1.7*	0.53 J	0.56	***13***	*1.1*	0.47 J	0.76
1,3,5-Trimethylbenzene	0.3	1.7	- -	3.7	3.7	ug/m3	***2.6 [1.9]***	*1.3 [1.2]*	<0.98	<0.39	***3.5***	*1.1*	*0.33 J*	<0.39	***7.1***	<0.39	<0.98	<0.39
1,4-Dichlorobenzene	0.25	0.5	- -	5.5	5.5	ug/m3	<1.2 [0.43 J]	*2b	<1.2	*2b	***1.6***	*2b	<1.2	*2b	***3.9***	***0.6***	<1.2	*0.49*
2-Methylbutane	- -	- -	- -	- -	- -	ug/m3		*2b		*2b		14		1.4		2.8		1.8
Carbon Tetrachloride	0.6	0.6	- -	1.3	1.3	ug/m3	*2b	***0.7 [<0.5]***	*2b	***0.65***	*2b	*2b	*2b	*2b	<1.3	*2b	***0.61 J***	*2b
Chloroethane	0.25	0.25	- -	1.1	1.1	ug/m3	<0.53 [<0.53]	***0.36 [<0.21]***	<0.53	<0.21	<0.53	<0.21	<0.53	<0.21	<0.53	<0.21	<0.53	<0.21
Chloroform	0.25	0.5	- -	1.1	1.1	ug/m3	<0.98 [<0.98]	***1.4 [<0.39]***	<0.98	<0.39	<0.98	*0.41*	<0.98	<0.39	*0.32 J*	<0.39	<0.98	<0.39
Chloromethane	1.8	1.8	- -	3.7	3.7	ug/m3	*2b	***2.3 [<0.41]***	*2b	0.97	*2b	*2b	*2b	*2b	<1.0	*2b	1.5	*2b
Dichlorodifluoromethane	4.2	4.1	- -	16.5	16.5	ug/m3	*2b	2.3 [2.2]	*2b	2.3	2.7	2.4	2.4	2.4	3.4	2.2	3.4	2.2
Isopropylbenzene	0.25	0.4	- -	- -	- -	ug/m3	***2.7 [1.7 J]***	<0.79 [<0.79]	<2.0	<0.79	***0.57 J***	<0.79	<2.0	<0.79	***9.5***	<0.79	<2.0	<0.79
Methyl tert-butyl ether	- -	- -	- -	11.5	11.5	ug/m3	<3.6 [<3.6]	<1.4 [<1.4]	<3.6	<1.4	0.47 J	<1.4	<3.6	<1.4	1.7 J	<1.4	<3.6	<1.4
Methylene Chloride	0.7	6.6	60	10	10	ug/m3	<1.7 [<1.7]	*2b	<1.7	*2b	<1.7	*2b	<1.7	*2b	<1.7	***9.8***	<1.7	***8***
n-Butane	- -	- -	- -	- -	- -	ug/m3	2.6 [1.8]	*2b	2.6	*2b	33	*2b	2.3	*2b	61	770 D	3.4	340 D
n-Decane	- -	- -	- -	17.5	17.5	ug/m3	4.5 J [3.0 J]	5 [5]	0.35 J	<2.3	21	9.1	<5.8	<2.3	88	5.6	2.2 J	4
n-Dodecane	- -	- -	- -	- -	- -	ug/m3	20 [16]	*2b	0.87 J	*2b	19	<2.8	<7.0	9.6	28	110	1.2 J	64
n-Heptane	1.9	7.6	- -	- -	- -	ug/m3	*2.0 J [1.3 J]*	1.6 [1.4]	0.40 J	<0.82	***23***	***34***	0.43 J	<0.82	***42***	1.1	0.61 J	<0.82
n-Hexane	1	5.9	- -	10.2	10.2	ug/m3	*2.8 [2.1]*	*3.3 [1.2]*	0.42 J	0.82	***19***	***29***	0.37 J	<0.7	***42***	0.92	0.47 J	<0.7
n-Octane	- -	- -	- -	- -	- -	ug/m3	2.2 [1.2 J]	1.8 [1.8]	<1.9	<0.75	26	35	<1.9	<0.75	88	<0.75	0.38 J	<0.75
Nonane	- -	- -	- -	7.8	7.8	ug/m3	3.2 [1.9 J]	2.2 [2.2]	<2.6	<1	27	18	<2.6	<1	59	2.4	0.31 J	1.8
n-Undecane	- -	- -	- -	22.6	22.6	ug/m3	13 [9.9]	3.2 [3.7]	0.38 J	<2.6	21	<2.6	<6.4	2.7	34	17	0.76 J	11
Pentane	- -	- -	- -	- -	- -	ug/m3	1.5 J [1.3 J]	2.8 [<1.2]	1.3 J	<1.2	19	11	0.95 J	<1.2	38	<1.2	0.97 J	<1.2
Styrene	0.25	0.6	- -	1.9	1.9	ug/m3	*2b	<0.34 [<0.34]	*2b	<0.34	*0.46 J*	<0.34	0.18 J	<0.34	***1.1***	*0.45*	*0.26 J*	*0.45*
Tetrachloroethene	0.3	1.1	100	15.9	15.9	ug/m3	*0.77 J [1.9]*	<0.54 [<0.54]	<1.4	<0.54	***14***	***3.1***	*0.31 J*	<0.54	***9.1***	<0.54	0.24 J	<0.54
Trichloroethene	0.25	0.25	5	4.2	4.2	ug/m3	<1.1 [<1.1]	***0.44 [0.36]***	<1.1	<0.21	<1.1	<0.21	<1.1	<0.21	*2b	<0.21	*2b	<0.21
Trichlorofluoromethane	2.2	5.4	- -	18.1	18.1	ug/m3	*2b	*2b	*2b	*2b	1.2	1.5	1.2	1.3	*2b	1.4	*2b	1.4

Notes:
1. Yellow highlighted values indicate an increased concentration between 2007 and 2009 sampling events.
2. Italic values indicate exceedance of NYSDOH Fuel Oil Heated Homes Outdoor Air criteria.
3. Bold values indicate exceedance of NYSDOH Fuel Oil Heated Homes Indoor Air criteria.
4. Grey shading indicates exceedance of USEPA Indoor Air Background Level criteria.
5. Yellow shading indicates concentration increase between 2007 and 2009 sampling activities.
6. Grey shading and dark box outline indicates VI increase and exceedance of USEPA Indoor Air Background Level Criteria.
7. *2b indicates indoor air concentration is higher than sub-slab vapor concentration. Refer to Table 2b for data.

Table 3

NYSDOH Matrix Evaluation

Soil Vapor / Indoor Air Matrix 1

October 2006

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)			
SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	< 0.25	0.25 to < 1	1 to < 5.0	5.0 and above
< 5	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposures	3. Take reasonable and practical actions to identify source(s) and reduce exposures	4. Take reasonable and practical actions to identify source(s) and reduce exposures
5 to < 50	5. No further action	6. MONITOR	7. MONITOR	8. MITIGATE
50 to < 250	9. MONITOR	10. MONITOR / MITIGATE	11. MITIGATE	12. MITIGATE
250 and above	13. MITIGATE	14. MITIGATE	15. MITIGATE	16. MITIGATE

No further action:
Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

Take reasonable and practical actions to identify source(s) and reduce exposures:
The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed). Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MONITOR:
Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MITIGATE:
Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MONITOR / MITIGATE:
Monitoring or mitigation may be recommended after considering the magnitude of sub-slab vapor and indoor air concentrations along with building- and site-specific conditions.

See additional notes on page 2.

ADDITIONAL NOTES FOR MATRIX 1

This matrix summarizes the minimum actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

[1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate building-specific conditions (e.g., dirt floor in basement, crawl spaces, etc.) and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, resampling may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Additionally, actions more protective of public health than those specified within the matrix may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action is usually undertaken for reasons other than public health (e.g., seeking community acceptance, reducing excessive costs, etc.).

[2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of vapor contamination, nor does it preclude remediating contaminated soil vapors or the source of soil vapor contamination.

[3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 0.25 microgram per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples, a minimum reporting limit of 5 micrograms per cubic meter is recommended for buildings with full slab foundations, and 1 microgram per cubic meter for buildings with less than a full slab foundation.

[4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion to occur is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions may be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.

[5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.

[6] The party responsible for implementing the recommended actions will differ depending upon several factors, including the identified source of the volatile chemicals, the environmental remediation program, and site-specific and building-specific conditions. For example, to the extent that all site data and site conditions demonstrate that soil vapor intrusion is not occurring and that the potential for soil vapor intrusion to occur is not likely, the soil vapor intrusion investigation would be considered complete. In general, if indoor exposures represent a concern due to indoor sources, then the State will provide guidance to the property owner and/or tenant on ways to reduce their exposure. If indoor exposures represent a concern due to outdoor sources, then the NYSDEC will decide who is responsible for further investigation and any necessary remediation. Depending upon the outdoor source, this responsibility may or may not fall upon the party conducting the soil vapor intrusion investigation.

Soil Vapor / Indoor Air Matrix 2

October 2006

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m^3)			
SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m^3)	< 3	3 to < 30	30 to < 100	100 and above
< 100	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposures	3. Take reasonable and practical actions to identify source(s) and reduce exposures	4. Take reasonable and practical actions to identify source(s) and reduce exposures
100 to < 1,000	5. MONITOR	6. MONITOR / MITIGATE	7. MITIGATE	8. MITIGATE
1,000 and above	9. MITIGATE	10. MITIGATE	11. MITIGATE	12. MITIGATE

No further action:
Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

Take reasonable and practical actions to identify source(s) and reduce exposures:
The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed). Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MONITOR:
Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MITIGATE:
Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MONITOR / MITIGATE:
Monitoring or mitigation may be recommended after considering the magnitude of sub-slab vapor and indoor air concentrations along with building- and site-specific conditions.

See additional notes on page 2.

ADDITIONAL NOTES FOR MATRIX 2

This matrix summarizes the minimum actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

[1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate building-specific conditions (e.g., dirt floor in basement, crawl spaces, etc.) and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, resampling may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Additionally, actions more protective of public health than those specified within the matrix may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action is usually undertaken for reasons other than public health (e.g., seeking community acceptance, reducing excessive costs, etc.).

[2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of vapor contamination, nor does it preclude remediating contaminated soil vapors or the source of soil vapor contamination.

[3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 3 micrograms per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples, a minimum reporting limit of 5 micrograms per cubic meter is recommended.

[4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion to occur is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions may be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.

[5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.

[6] The party responsible for implementing the recommended actions will differ depending upon several factors, including the identified source of the volatile chemicals, the environmental remediation program, and site-specific and building-specific conditions. For example, to the extent that all site data and site conditions demonstrate that soil vapor intrusion is not occurring and that the potential for soil vapor intrusion to occur is not likely, the soil vapor intrusion investigation would be considered complete. In general, if indoor exposures represent a concern due to indoor sources, then the State will provide guidance to the property owner and/or tenant on ways to reduce their exposure. If indoor exposures represent a concern due to outdoor sources, then the NYSDEC will decide who is responsible for further investigation and any necessary remediation. Depending upon the outdoor source, this responsibility may or may not fall upon the party conducting the soil vapor intrusion investigation.

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Table 4

Sub-Slab Pressure Field Diagnostic Testing Results

Table 4

New York State Electric Gas Corporation
Geneva Former MGP Site
Geneva, New York

Sub-Slab Pressure Field Diagnostic Testing Results

Date	Trial #			Exhaust Fan							SSDS Fan	Vapor Intrusion Test Points			
		Makeup Air TOTAL	PRE TOTAL	PRE-1 (CFM)	PRE-2 (CFM)	PRE-3 (CFM)	PRE-4 (CFM)	PRE-5 (CFM)	PRE-6 (CFM)	PRE-7 (CFM)	(ON/OFF)	T_1 *(Sally Port Holding)*	T_2 *(Men's Holding)*	T_3 *(Dispatch)*	T_4 *(Attorney/Client*
11/20/2008	1	1910	3827	1020	630	0	575	559	349	694	ON	0.011	0.004	-0.003	-0.135
11/20/2008	2	1910	3827	1020	630	0	575	559	349	694	OFF	0.018	0.025	0.015	0.006
11/20/2008	3	1910	2225	1020	630	0	575	0	0	0	OFF	0.005	0.005	0.008	0.002
11/20/2008	4	1910	2225	1020	630	0	575	0	0	0	ON	0.003	-0.005	-0.011	-0.135
DESIGN	0	1910	4410	1020	630	560	575	600	300	725	ON	-	-	-	-
3/27/2009	1	1910	4210	1020	630	0	575	710	400	875	ON	0.009	-0.003	-0.013	-0.133
3/27/2009	2	1910	0	0	0	0	0	0	0	0	ON	0.003	-0.005	-0.018	-0.138
3/27/2009	3	1910	0	0	0	0	0	0	0	0	ON	0.000	-0.013	-0.021	-0.139
3/27/2009	4	1910	0	0	0	0	0	0	0	0	ON VI#1 off VI#2 on	0.002	-0.011	-0.019	-0.048
3/27/2009	5	1910	0	0	0	0	0	0	0	0	ON VI#1 on VI#2 off	0.000	-0.002	0.002	0.006
3/27/2009	6	1910	3395	1020	630	0	575	350	350	470	ON	0.006	-0.005	-0.016	-0.114
4/13/2009	1	1910	3395	1020	630	0	575	350	350	470	V1 on, V2 on, V3, on	-0.111	0.001	-0.018	-0.026
4/16/2009	1	1910	3395	1020	630	0	575	350	350	470	V1 on, V2 on, V3, on	-0.123	-0.003	-0.022	-0.021
4/16/2009	2	1910	3395	1020	630	0	575	350	350	470	V1 off, V2 on, V3 on	-0.126	-0.003	-0.023	-0.037
4/16/2009	3	1910	2825	1020	630	0	575	220	180	200	V! off, V2 2.25", V3 1.25"	-0.011	-0.006	-0.021	-0.034

Note:
1. April 16, 2009 communication testing indicates the final communication testing event. Satisfactory pressure differentials were achieved at all four test points.

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Figures

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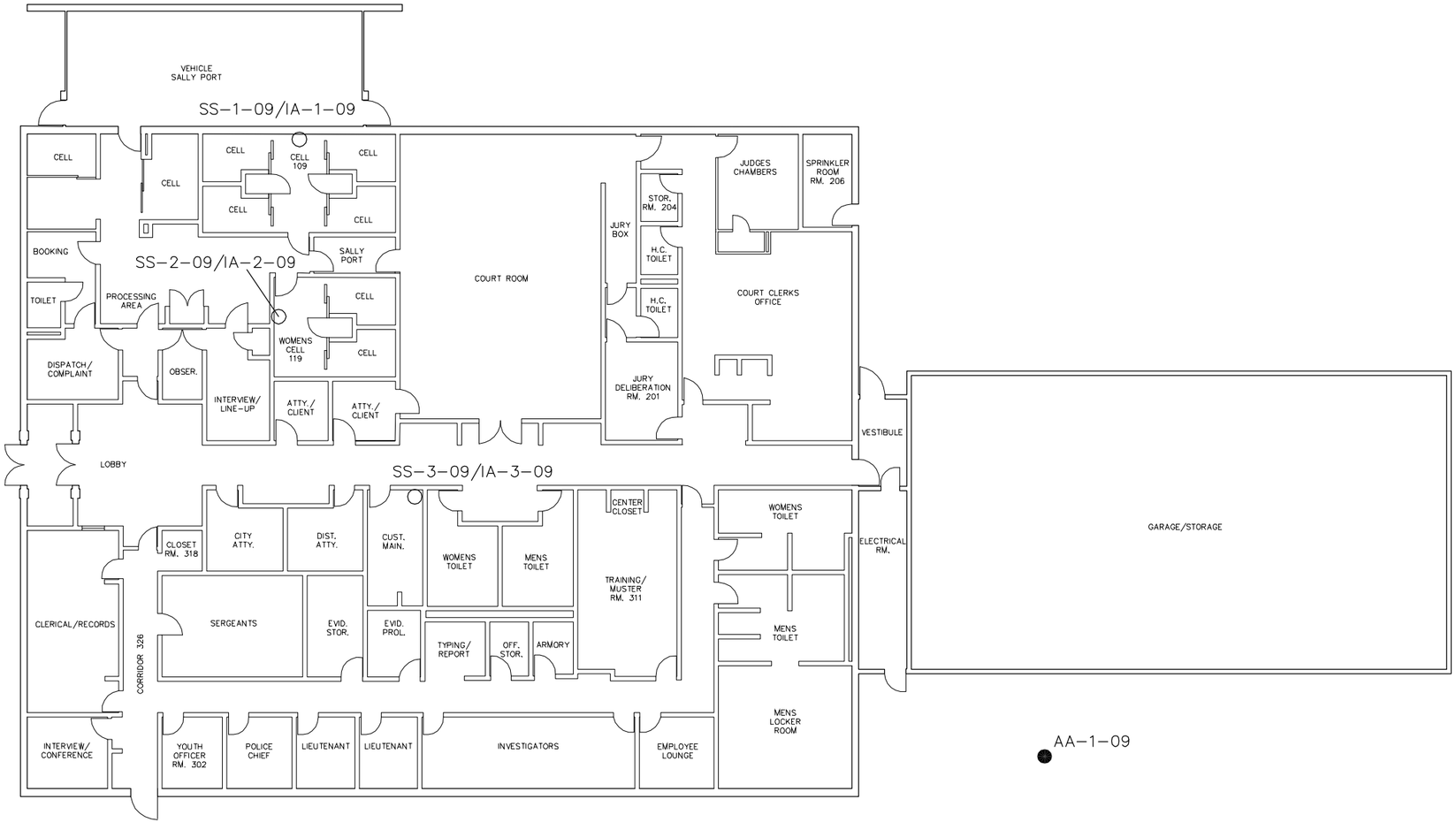
Figure 1

Approximate Locations of Sub-Slab Vapor, Indoor Air, and Ambient Air Samples



FLOOR PLAN

LEGEND:

- ◯ SUB-SLAB VAPOR/INDOOR AIR SAMPLE LOCATION
- ● AMBIENT AIR SAMPLE LOCATION

NOTES:

1. INTERIOR FLOOR PLAN WAS DIGITIZED FROM BELL & SPINA PUBLIC SAFETY BUILDING FIGURE TITLED FLOOR PLAN, SHEET 2 OF 28, DATED FEBRUARY 10, 1997, SCALE 3/16 = 1'-0" .
2. EXTERIOR BUILDING WALLS BASED ON SURVEYS COMPLETED BY NYSEG ON DECEMBER 14, 2005 AND OCTOBER 2006.
3. SAMPLES COLLECTED BY ARCADIS PERSONNEL ON MAY 14, 2009.

0 10' 20'
GRAPHIC SCALE

NEW YORK STATE ELECTRIC AND GAS
GENEVA (WADSWORTH ST.)
FORMER MGP SITE
2009 VAPOR INTRUSION INTERIM
REMEDIAL MEASURE WORK PLAN

APPROXIMATE LOCATIONS OF SUB-SLAB VAPOR, INDOOR AIR, AND AMBIENT AIR SAMPLES

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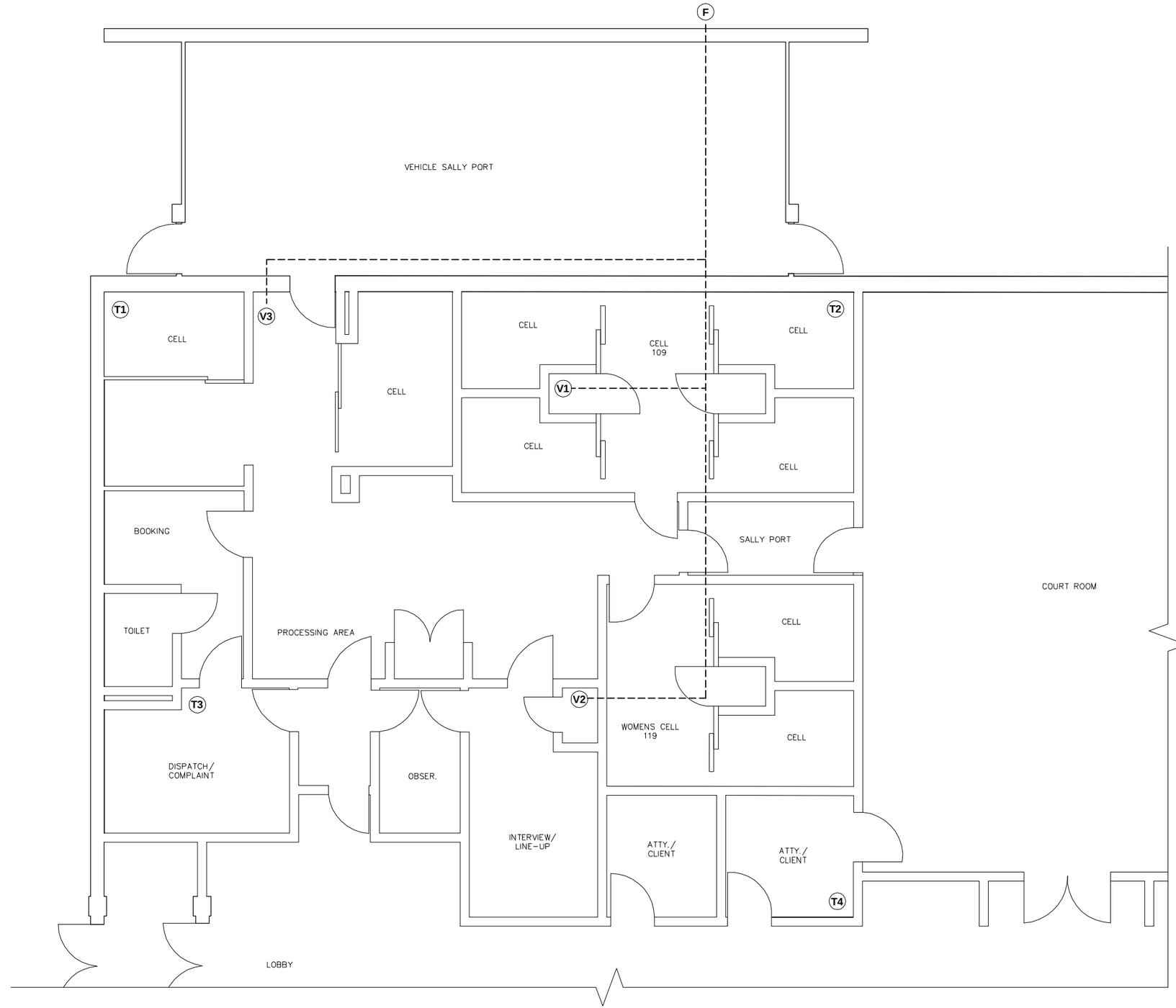
FIGURE
1

CITY:SYRACUSE, NY DIV/GROUP:ENV/141 DB:AMS GMS:K. SARTORI LD: PIC:K.WHITE PM:C.ENGLER TM:C.ENGLER LYR:(Opt)ON=*;OFF=*REF*
G:\ENV\CAD\SYRACUSE\ACTIB\013085\000\000011\DWG\NYSEG13085B01.DWG LAYOUT: 1SAVED: 6/11/2009 1:04 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: D2B-PDF PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 6/11/2009 1:04 PM BY: SARTORI, KATHERINE
XREFS: IMAGES: PROJECTNAME: ---

Figure 2

Communication Test Points and Sub-Slab Depressurization System Location



LEGEND:

- (F) MITIGATION FAN LOCATION
- (V1) MITIGATION SYSTEM SUCTION POINT LOCATION
- (T1) COMMUNICATION TESTING POINT LOCATION
- MITIGATION SYSTEM VACUUM LINE

NOTES:

1. INTERIOR FLOOR PLAN WAS DIGITIZED FROM BELL & SPINA PUBLIC SAFETY BUILDING FIGURE TITLED FLOOR PLAN, SHEET 2 OF 28, DATED FEBRUARY 10, 1997, SCALE 3/16 = 1'-0" .
2. EXTERIOR BUILDING WALLS BASED ON SURVEYS COMPLETED BY NYSEG ON DECEMBER 14, 2005 AND OCTOBER 2006.
3. ALL LOCATIONS ARE APPROXIMATE.

0 3" 6"
GRAPHIC SCALE

NEW YORK STATE ELECTRIC AND GAS
GENEVA (WADSWORTH ST.)
FORMER MGP SITE
2009 VAPOR INTRUSION INTERIM
REMEDIAL MEASURE WORK PLAN

COMMUNICATION TEST POINTS AND SUB-SLAB DEPRESSURIZATION SYSTEM LOCATION

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FIGURE
2

Appendices

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Appendix A

Laboratory Analytical Data

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

Geneva, NY

Lot #: H9E190105

Alexander Ryan

ARCADIS U.S., Inc.
PO Box 66
6723 Towpath Road
Syracuse, NY 13214

TESTAMERICA LABORATORIES, INC.

Jamie A. McKinney
Project Manager

May 27, 2009

ANALYTICAL METHODS SUMMARY

H9E190105

PARAMETER	ANALYTICAL METHOD
Volatile Organics by TO15	EPA-2 TO-15

References:

EPA-2 "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air", EPA-625/R-96/010b, January 1999.

SAMPLE SUMMARY

H9E190105

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LC99T	001	SS-1-09	05/14/09	19:11
LC99V	002	DUP-SS-1-09	05/14/09	19:00
LC99W	003	IA-1-09	05/14/09	19:00
LC99X	004	SS-2-09	05/14/09	19:02
LC990	005	IA-2-09	05/14/09	19:00
LC993	006	SS-3-09	05/14/09	19:00
LC994	007	IA-3-09	05/14/09	19:00
LC995	008	AA-1-09	05/14/09	17:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PROJECT NARRATIVE
H9E190105

The results reported herein are applicable to the samples submitted for analysis only.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

There were no problems with the condition of the samples received.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

EPA methods TO-14A and TO-15 specify the use of humidified "zero air" as the blank reagent for canister cleaning, instrument calibration and sample analysis. Ultra-high purity humidified nitrogen from a cryogenic reservoir is used in place of "zero air" by TestAmerica Knoxville.

Quantitation for the following analytes was based on a one-point calibration standard at the reporting limit:

- Indene
- Indane
- 1-Methylnaphthalene
- 2-Methylnaphthalene
- Thiophene
- 1,2,3-Trimethylbenzene

The EPA method requires that all target analytes in the continuing calibration verification standard be within 30% difference from the initial calibration. The laboratory standard operating procedure allows up to four analytes in the calibration verification to be $\leq$40% difference from the initial calibration. The calibration verification analyzed on 05/22/09

PROJECT NARRATIVE
H9E190105

(LCS for batch 9143081) exhibited a %difference of >30% but ≤40% for carbon tetrachloride and decane. In addition, the calibration verification analyzed on 05/21/09 (LCS for batch 9141459) exhibited a %difference of >40% for 1,2-dichloro-1,1,2,2-tetrafluoroethane. However, since the recovery was high and this analyte was not detected above the reporting limit in the associated samples, the validity of the data is unaffected.

Although trichloroethene is flagged as being outside recovery limits in the laboratory control sample for batch 9143043 on 05/22/09, the laboratory control sample is in control. The standard operating procedure allows for two nonpolar analyte recoveries between 60% and 140% and two polar analyte recoveries between 45% and 155%.

The surrogate recoveries for batches 9141459 and 9143081 were quantified using the daily calibration verification standard.

The concentration of n-butane in samples SS-3-09 and IA-3-09 exceeded the calibration level of the instrument. The samples were analyzed at a dilution to bring the concentration of the compound into the instrument calibration range. The results for both analyses are reported in order to provide the lowest possible reporting limits.

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Appendix B

Sampling Photo Log

Appendix B-1 – Sub-Slab Depressurization Installation Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: S6300167.JPG

DATE: November 20, 2008

DESCRIPTION: Pipe chase contents in Women's Cell area

PROJECT #: B0013085

PHOTO #: S6300168.JPG

DATE: November 20, 2008

DESCRIPTION: Ceiling of pipe chase in Men's Cell area (location of suction point #1); yellow cord is the contractor's extension cord

Appendix B-1 – Sub-Slab Depressurization Installation Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: S6300169.JPG

DATE: November 20, 2008

DESCRIPTION: PRE 2 control dial (located in jury room); marked at designed exhaust setting

PROJECT #: B0013085

PHOTO #: S6300170.JPG

DATE: November 20, 2008

DESCRIPTION: PRE 3 control dial (located in store room #204); marked at designed exhaust setting; services the store room and toilets adjacent to the jury room and clerk's office

Appendix B-1 – Sub-Slab Depressurization Installation Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: S6300171.JPG

DATE: November 20, 2008

DESCRIPTION: Temperature controls for the five RTUs (located in the custodian's closet)

PROJECT #: B0013085

PHOTO #: S6300172.JPG

DATE: November 20, 2008

DESCRIPTION: PRE 4 control dial (located in custodian's closet); marked at designed exhaust setting; services the janitor's closet and the men's and women's bathrooms across from the courtroom

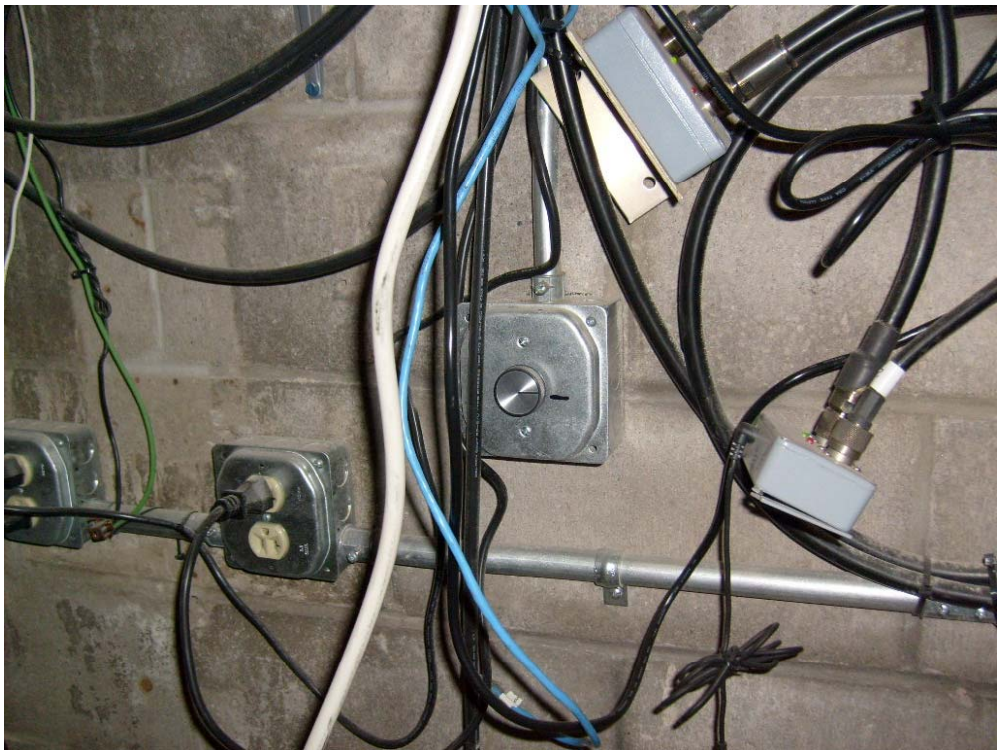
Appendix B-1 – Sub-Slab Depressurization Installation Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: S6300173.JPG

DATE: November 20, 2008

DESCRIPTION: PRE 1 control dial (located in electrical room); marked at designed exhaust setting; services the electrical room and the men's and women's locker rooms/bathrooms

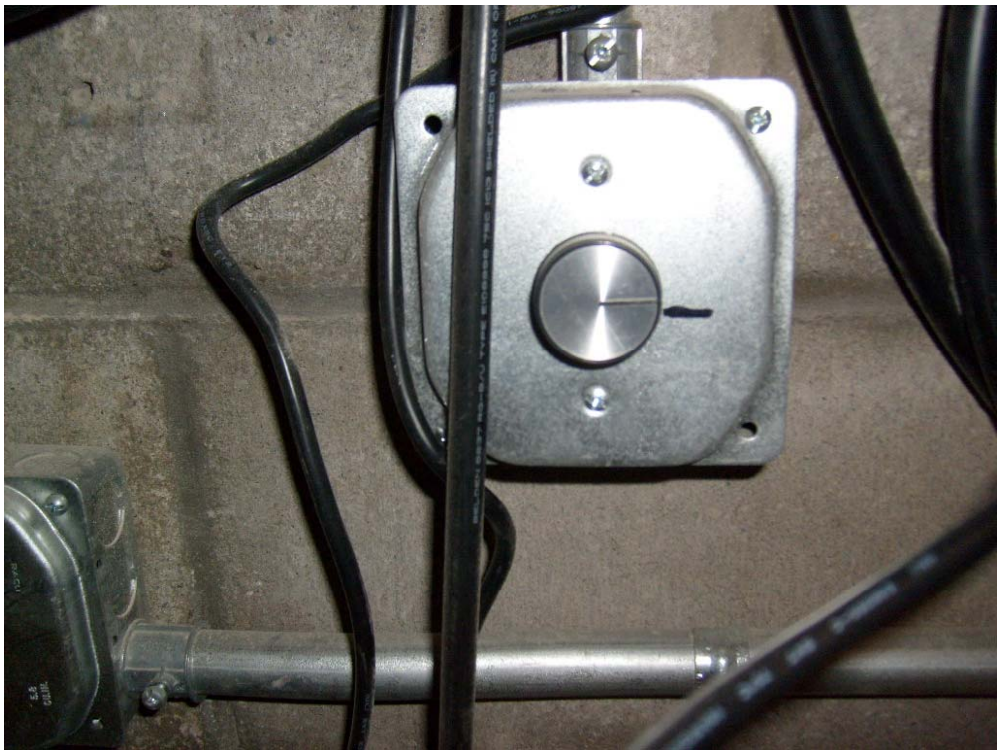


PROJECT #: B0013085

PHOTO #: S6300174.JPG

DATE: November 20, 2008

DESCRIPTION: PRE 1 control dial (located in electrical room); marked at designed exhaust setting; services the electrical room and the men's and women's locker rooms/bathrooms



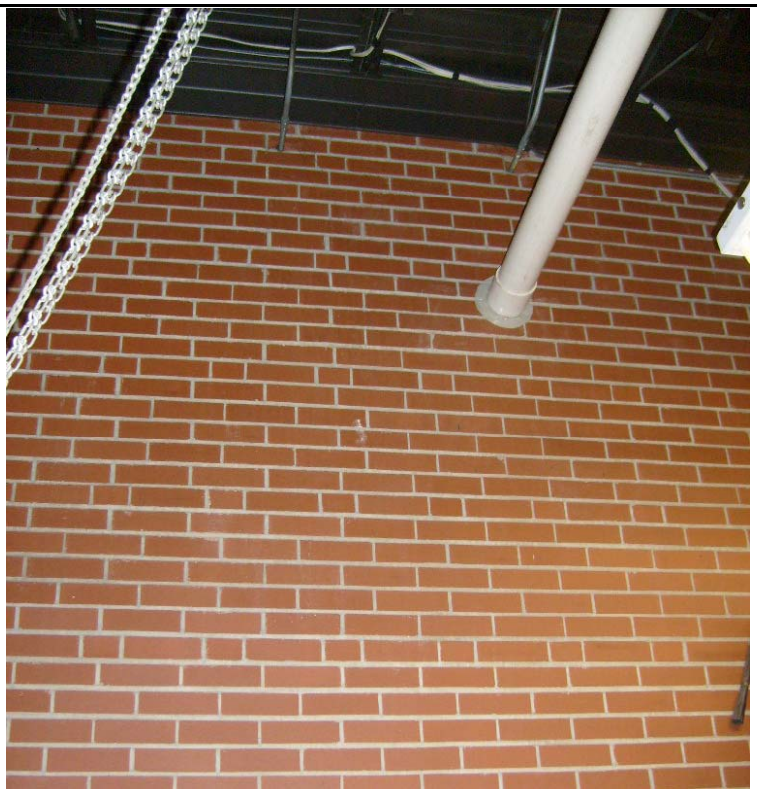
Appendix B-1 – Sub-Slab Depressurization Installation Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: S6300175.JPG

DATE: November 20, 2008

DESCRIPTION: VI discharge pipe at the sally port/holding cell interface wall (view from inside sally port), facing south

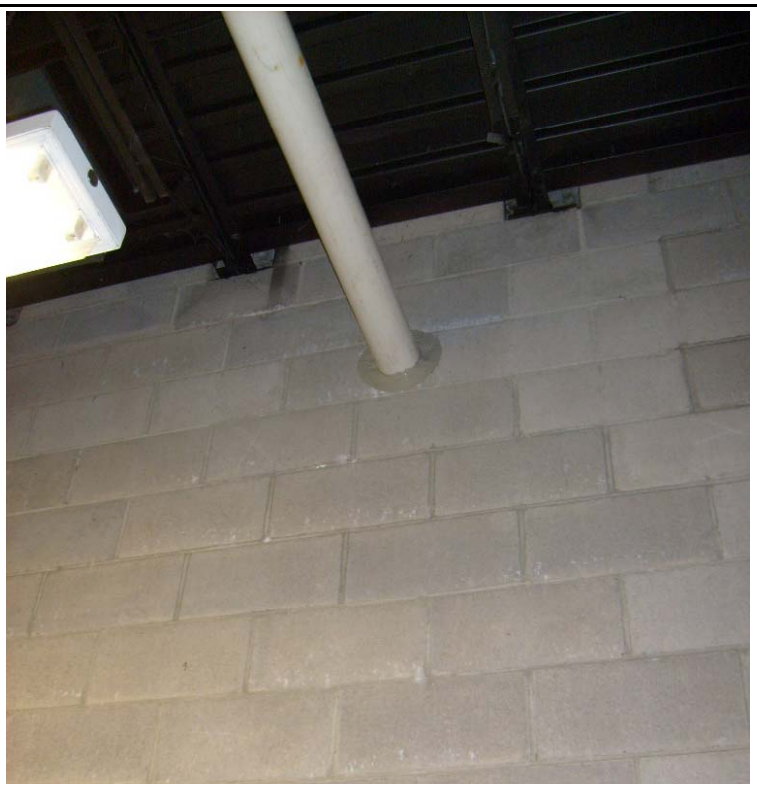


PROJECT #: B0013085

PHOTO #: S6300176.JPG

DATE: November 20, 2008

DESCRIPTION: VI discharge pipe at the exterior wall to the sally port (view from inside sally port), facing north



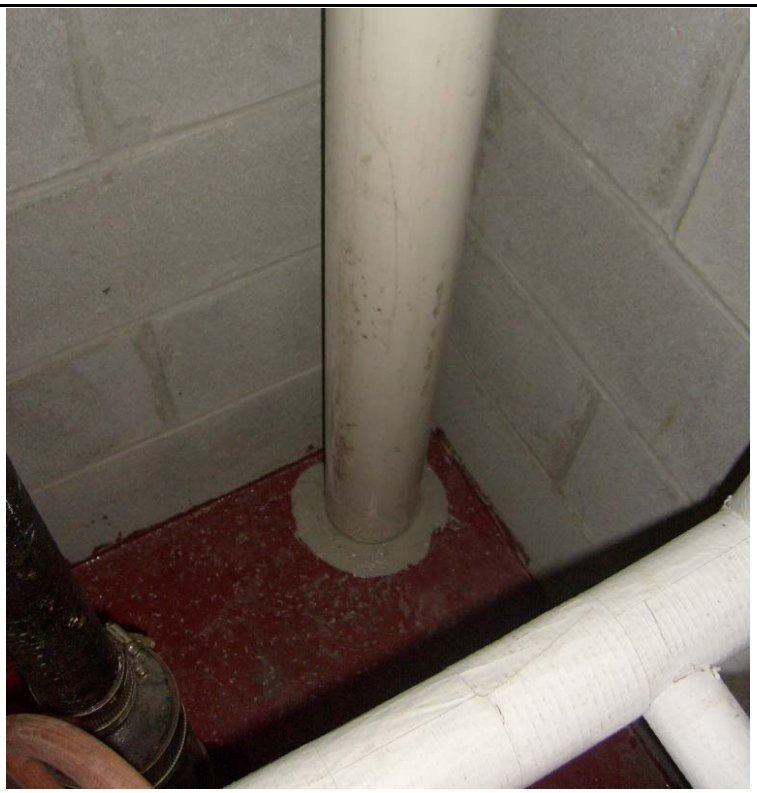
Appendix B-1 – Sub-Slab Depressurization Installation Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: S6300178.JPG

DATE: November 20, 2008

DESCRIPTION: VI suction pipe #1 / floor interface; located within the men's cell area pipe chase (west side of men's cell area)

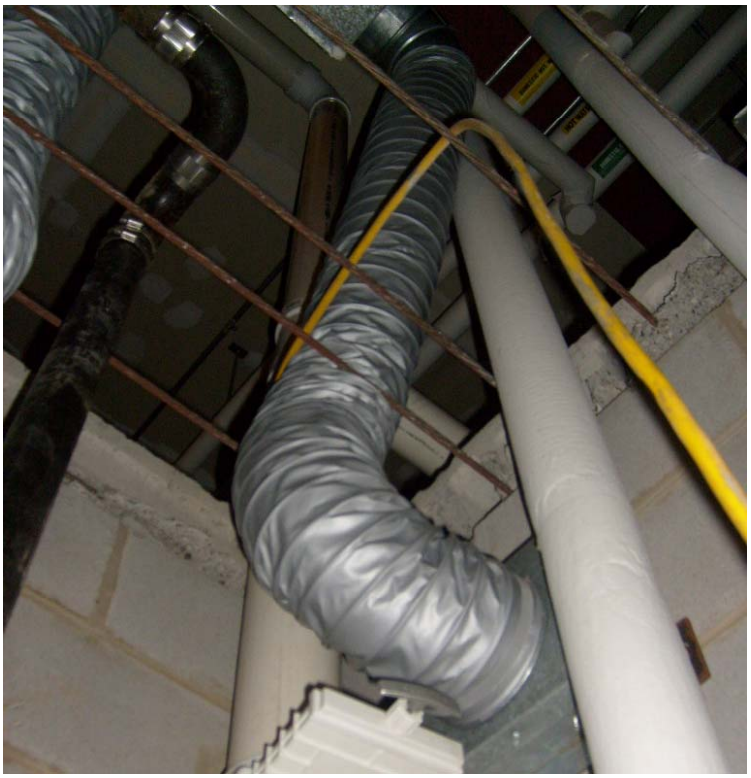


PROJECT #: B0013085

PHOTO #: S6300179.JPG

DATE: November 20, 2008

DESCRIPTION: VI suction pipe #1 / "ceiling" interface



Appendix B-1 – Sub-Slab Depressurization Installation Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: S6300180.JPG

DATE: November 20, 2008

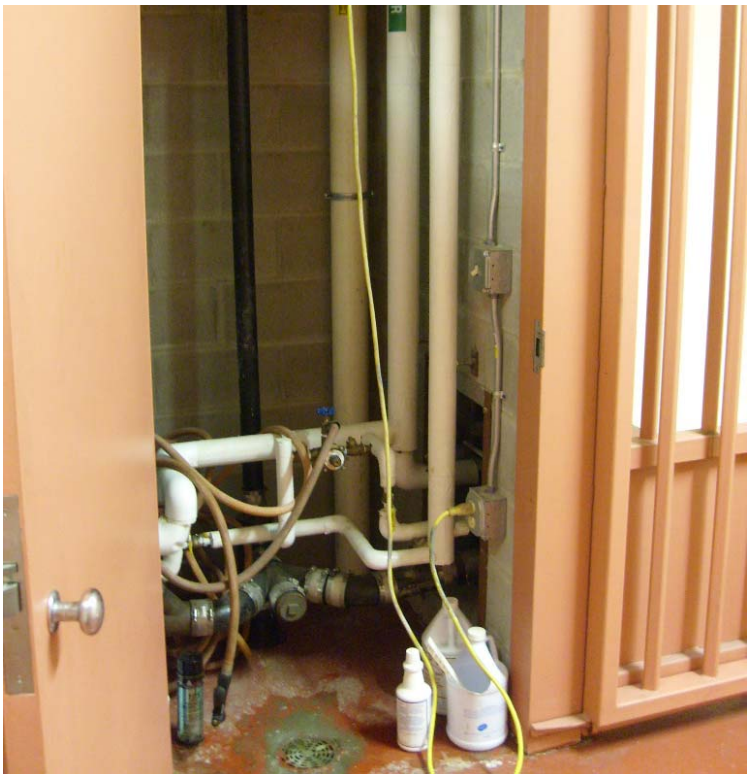
DESCRIPTION: VI suction pipe #1 (advisory stickers)

PROJECT #: B0013085

PHOTO #: S6300183.JPG

DATE: November 20, 2008

DESCRIPTION: VI suction pipe #1 – entire closet view



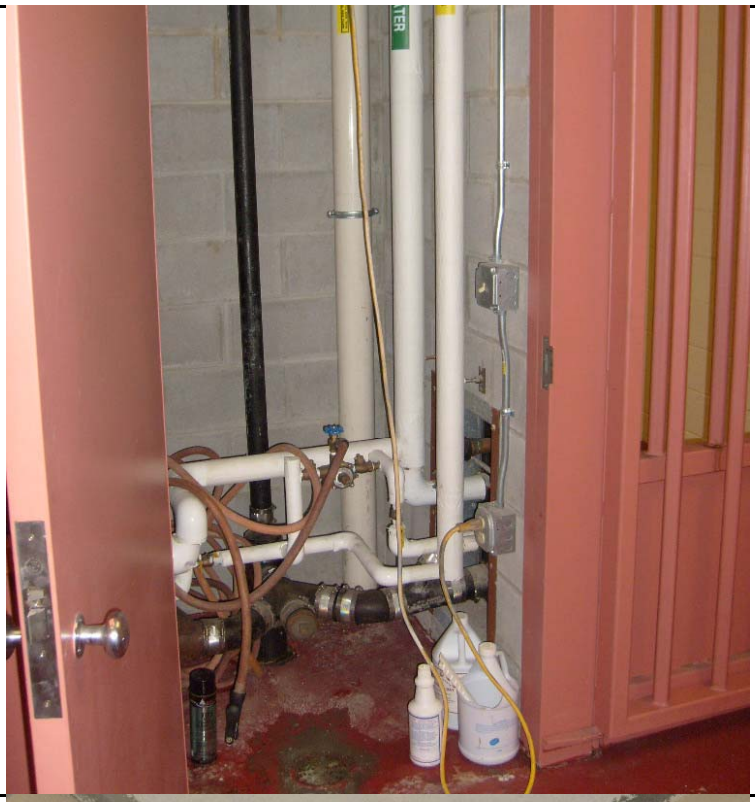
Appendix B-1 – Sub-Slab Depressurization Installation Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: S6300185.JPG

DATE: November 20, 2008

DESCRIPTION: VI suction pipe #1 – entire closet view



PROJECT #: B0013085

PHOTO #: S6300186.JPG

DATE: November 20, 2008

DESCRIPTION: VI suction pipe #2 / ceiling interface; located within the closet in the interview/line-up room

Appendix B-1 – Sub-Slab Depressurization Installation Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: S6300187.JPG

DATE: November 20, 2008

DESCRIPTION: VI suction pipe #2 / floor interface; note: foam around pipe within the void

PROJECT #: B0013085

PHOTO #: S6300188.JPG

DATE: November 20, 2008

DESCRIPTION: VI suction pipe #2 / floor interface; note: caulk in place over foam

Appendix B-1 – Sub-Slab Depressurization Installation Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085
PHOTO#: S6300190.JPG
DATE: November 20, 2008
DESCRIPTION: VI suction pipe #2 – entire closet view

PROJECT #: B0013085
PHOTO #: S6300191.JPG
DATE: November 20, 2008
DESCRIPTION: VI suction pipe #2 – entire closet view

Appendix B-1 – Sub-Slab Depressurization Installation Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: S6300192.JPG

DATE: November 20, 2008

DESCRIPTION: Covered mitigation fan and discharge pipe on the exterior of the sally port, facing southeast

Appendix B-2 -Air Sampling Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: 100_0165.jpg

DATE: May 14, 2009

DESCRIPTION: Samples SS-1-09, SS-1-09 DUP, and IA-1-09 inside the men's holding cell area

PROJECT #: B0013085

PHOTO #: 100.0168.jpg

DATE: May 14, 2009

DESCRIPTION: Samples SS-2-09 and IA-2-09 inside the women's holding cell area

Appendix B-2 -Air Sampling Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: 100_0171.jpg

DATE: May 14, 2009

DESCRIPTION: Samples SS-3-09 and IA-3-09 inside the custodian closet

PROJECT #: B0013085

PHOTO #: 100.0172.jpg

DATE: May 14, 2009

DESCRIPTION: Chemicals located within custodian closet during sampling

Appendix B-2 -Air Sampling Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: 100_0173.jpg

DATE: May 14, 2009

DESCRIPTION: Premium Pink Lotion Soap with Moisturizers found in custodian closet

PROJECT #: B0013085

PHOTO #: 100.0174.jpg

DATE: May 14, 2009

DESCRIPTION: Miscellaneous paints located in custodian closet

Appendix B-2 -Air Sampling Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: 100_0175.jpg

DATE: May 14, 2009

DESCRIPTION: Miscellaneous paints located in custodian closet

PROJECT #: B0013085

PHOTO #: 100.0176.jpg

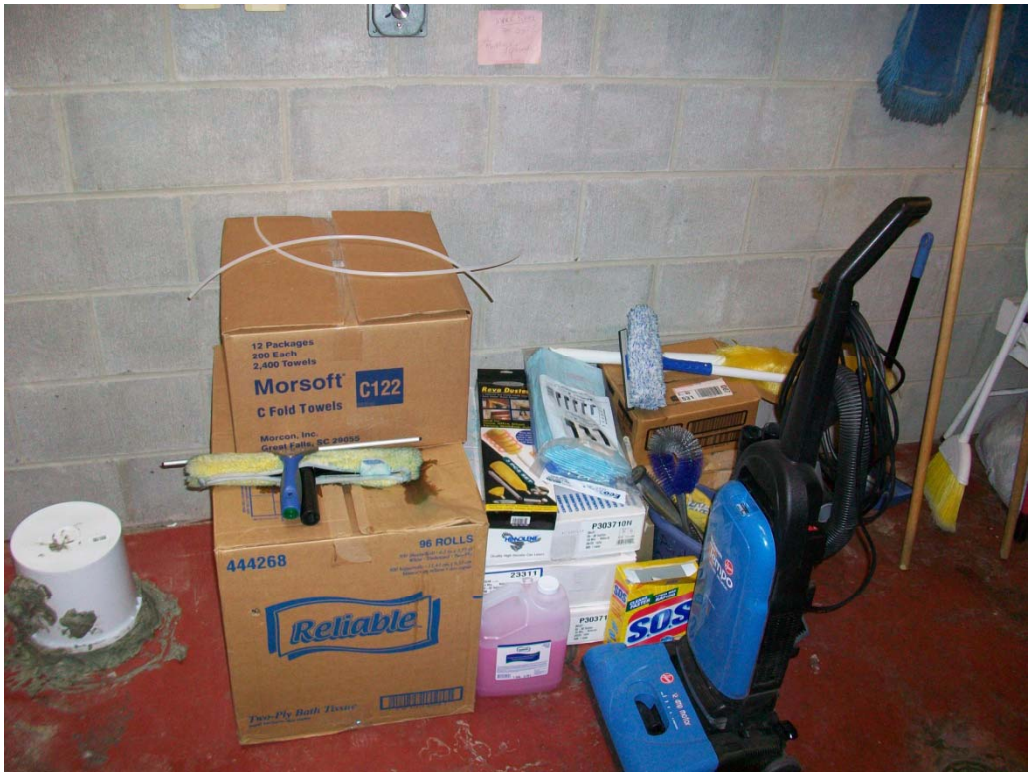
DATE: May 14, 2009

DESCRIPTION: Miscellaneous paints located in custodian closet

Appendix B-2 -Air Sampling Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085
PHOTO#: 100_0177.jpg
DATE: May 14, 2009
DESCRIPTION: Interior of custodian closet

PROJECT #: B0013085
PHOTO #: 100.0178.jpg
DATE: May 14, 2009
DESCRIPTION: Interior of custodian closet



Appendix B-2 -Air Sampling Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO#: 100_0179.jpg

DATE: May 14, 2009

DESCRIPTION: Interior of custodian closet

PROJECT #: B0013085

PHOTO#: 100_0183.jpg

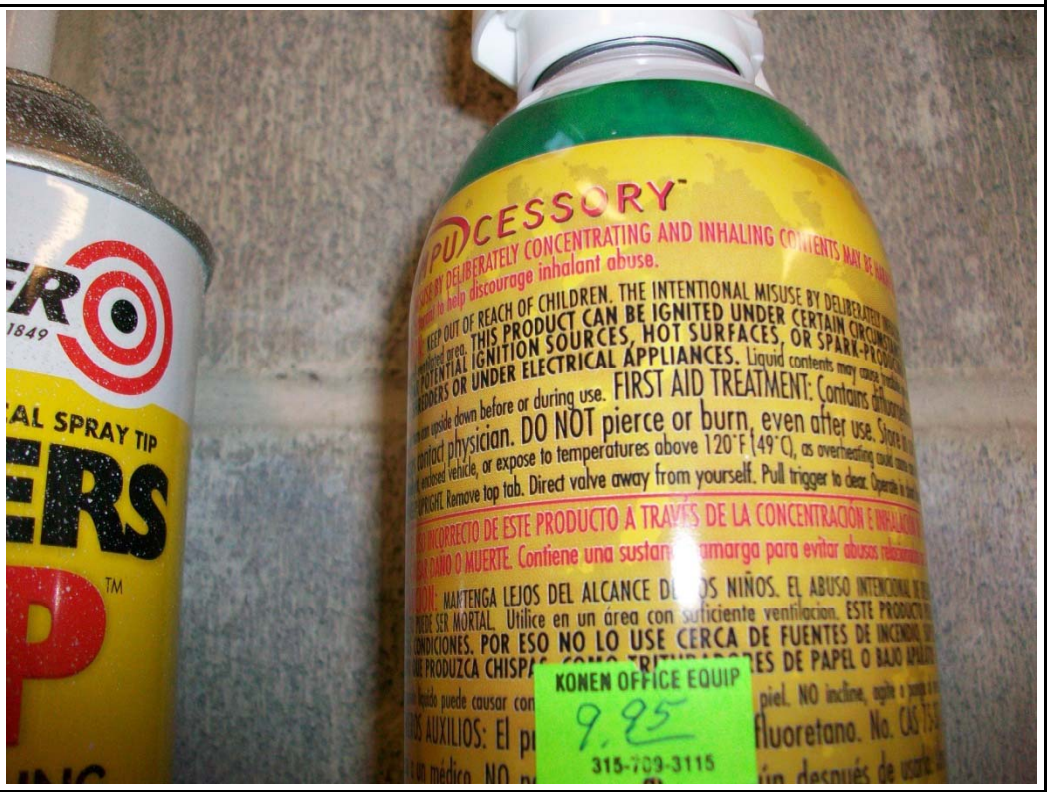
DATE: May 14, 2009

DESCRIPTION: Ingredients of chemicals within custodian closet

Appendix B-2 -Air Sampling Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085
PHOTO #: 100.0186.jpg
DATE: May 14, 2009
DESCRIPTION: Chemicals located within custodian closet

PROJECT #: B0013085
PHOTO#: 100_0187.jpg
DATE: May 14, 2009
DESCRIPTION: Chemicals located within custodian closet



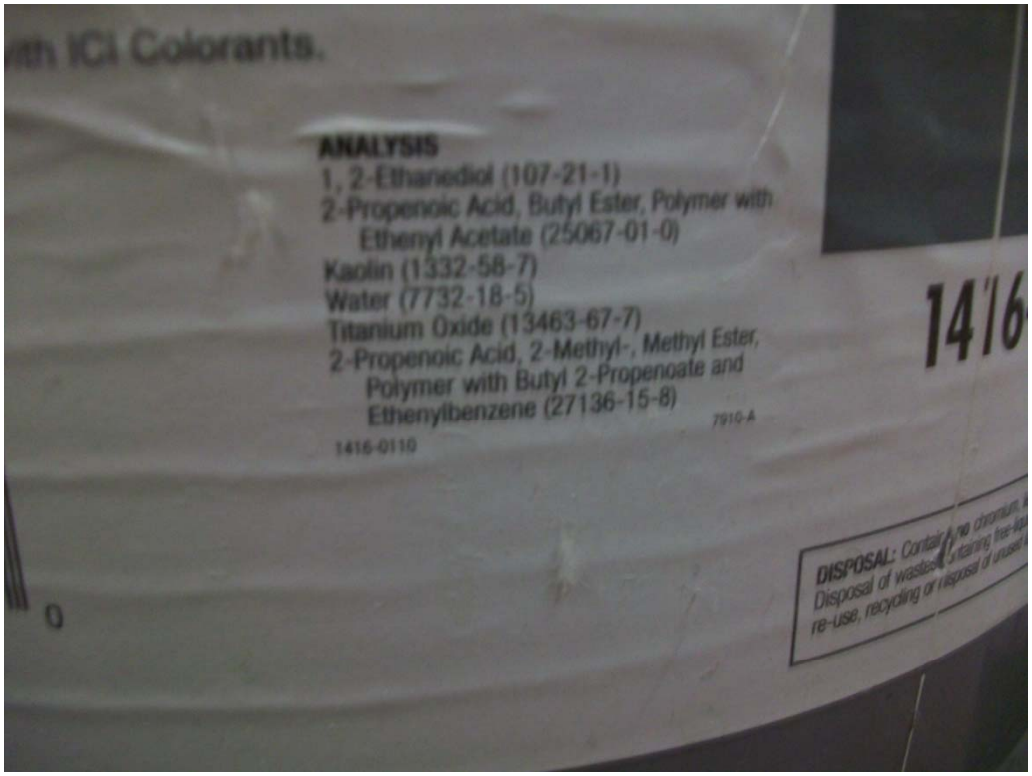
Appendix B-2 -Air Sampling Photo Log
New York State Electric and Gas
Geneva Former MGP Site
Vapor Intrusion Evaluation Summary Report

PROJECT #: B0013085

PHOTO #: 100.0191.jpg

DATE: May 14, 2009

DESCRIPTION: Chemicals located within custodian closet



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Appendix C

Field Air Sampling Logs and Laboratory Chains of Custody

Background
PID
0ppb ARCADIS

ARCADIS
Infrastructure, environment, facilities

Sub-Slab Sample Collection Log

Sample ID: ~~SS~~ - 1 - 09

Client:	NYSEG	**Boring Equipment:**	Hammer Drill
Project:		**Sealant:**	
Location:	Geneva, NY	**Tubing information:**	Teflon 1/4" OD
Project #:	B0013085	**Miscellaneous Equipment:**	
Samplers:	AMF / NPS	**Subcontractor:**	
Sample Point Location:	Men's Cell	**Moisture Content of Sampling Zone (circle one):**	(Dry) / Moist
Sampling Depth:	12"	**Approximate Purge Volume and Method:**	Syringe - 300mL
Time of Collection:			

Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
1448	-28.8					Purge 476 ppb
1638	-30					
1911	-5					

SUMMA Canister Information:

Size (circle one): 1 L (6 L)

150 ppm helium during purge

Canister ID: 02275 N

Flow Controller ID: K282

95% helium in bucket

General Observations/Notes:

post sample 72% remain helium in bucket
400 ppm helium in tubing

Approximating One-Well Volume (for purging): When using 1¼-inch "Dummy Point" and a 6-inch sampling interval, sampling space will have a volume of approximately 150 mL. Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Please record current weather information including wind speed and direction, ambient temperature, barometric pressure and relative humidity via a suitable information source (e.g., weatherunderground.com).

Background PID 0 ppb

ARCADIS
Infrastructure, environment, facilities

Sub-Slab Sample Collection Log

Sample ID: SS-1-09 DUP

Client:	NYSEG	**Boring Equipment:**	NA
Project:		**Sealant:**	
Location:	Geneva, NY	**Tubing information:**	Teflon 1/4" OD
Project #:	B0013085	**Miscellaneous Equipment:**	
Samplers:	AMF / NPS	**Subcontractor:**	
Sample Point Location:	Men's Cell	**Moisture Content of Sampling Zone (circle one):**	(Dry) / Moist
Sampling Depth:	12"	**Approximate Purge Volume and Method:**	Syringe - 300mL
Time of Collection:			

Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
LAB	-28.8					purge 47.6 ppb
1430	-30					
1900	-5					

SUMMA Canister Information:

Size (circle one): 1 L (6 L)

Canister ID: 62273

Flow Controller ID: K400

General Observations/Notes:

post sample see notes for SS-1-09

Approximating One-Well Volume (for purging): When using 1¼-inch "Dummy Point" and a 6-inch sampling interval, sampling space will have a volume of approximately 150 mL. Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Please record current weather information including wind speed and direction, ambient temperature, barometric pressure and relative humidity via a suitable information source (e.g., weatherunderground.com).

Background PID 0 ppb

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Sub-Slab Sample Collection Log

Sample ID: IA-1-09

Client:	NYSEG	**Boring Equipment:**	NA
Project:		**Sealant:**	NA
Location:	Geneva, NY	**Tubing information:**	NA
Project #:	B0013085	**Miscellaneous Equipment:**	NA
Samplers:	AMF / NPS	**Subcontractor:**	NA
Sample Point Location:	Men's Cell	**Moisture Content of Sampling Zone (circle one):**	Dry / Moist
Sampling Depth:	N/A	**Approximate Purge Volume and Method:**	NA
Time of Collection:			

Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
LAB	-28.8					
1646	-30					
1900	-6					

SUMMA Canister Information:

Size (circle one): 1 L (6 L)

Canister ID: [illegible] 7497

Flow Controller ID: [illegible] K402

General Observations/Notes:

Approximating One-Well Volume (for purging): When using 1¼-inch "Dummy Point" and a 6-inch sampling interval, sampling space will have a volume of approximately 150 mL. Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Please record current weather information including wind speed and direction, ambient temperature, barometric pressure and relative humidity via a suitable information source (e.g., weatherunderground.com).

Background PID 0ppb

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Infrastructure, environment, facilities

Sub-Slab Sample Collection Log

Sample ID: SS-2-09

Client:	NYSEG	**Boring Equipment:**	Hammer Drill
Project:		**Sealant:**	
Location:	Geneva, NY	**Tubing information:**	Teflon 1/4" OD
Project #:	B0013085	**Miscellaneous Equipment:**	
Samplers:		**Subcontractor:**	NA
Sample Point Location:	Women's Cell	**Moisture Content of Sampling Zone (circle one):**	(Dry) / Moist
Sampling Depth:	12"	**Approximate Purge Volume and Method:**	Syringe - 300mL
Time of Collection:			

Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
LAB	-28.8					purge 334 ppb
1639	-30 +					
1402	-5.5					

SUMMA Canister Information:

Size (circle one): 1 L (6 L)

Canister ID: 93272

Flow Controller ID: K341

0 ppm helium during purge

98% helium in bucket

General Observations/Notes:

post sample 10% helium in bucket

Approximating One-Well Volume (for purging): When using 1¼-inch "Dummy Point" and a 6-inch sampling interval, sampling space will have a volume of approximately 150 mL. Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Please record current weather information including wind speed and direction, ambient temperature, barometric pressure and relative humidity via a suitable information source (e.g., weatherunderground.com).

Background PID 0ppb

ARCADIS
Infrastructure, environment, facilities

Sub-Slab Sample Collection Log

Sample ID: IA-2-09

Client:	NYSEG	**Boring Equipment:**	NA
Project:		**Sealant:**	NA
Location:	Geneva, NY	**Tubing information:**	NA
Project #:	B0013085	**Miscellaneous Equipment:**	NA
Samplers:		**Subcontractor:**	NA
Sample Point Location:	Women's Cell Bedroom Closet	**Moisture Content of Sampling Zone (circle one):**	Dry / Moist
Sampling Depth:	NA	**Approximate Purge Volume and Method:**	NA
Time of Collection:			

Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
LAB	-28.7					
1639	-30+					
1900	-5.5					

SUMMA Canister Information:

Size (circle one): 1 L (6 L)

Canister ID: S-1500

Flow Controller ID: K355

General Observations/Notes:

Approximating One-Well Volume (for purging): When using 1¼-inch "Dummy Point" and a 6-inch sampling interval, sampling space will have a volume of approximately 150 mL. Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Please record current weather information including wind speed and direction, ambient temperature, barometric pressure and relative humidity via a suitable information source (e.g., weatherunderground.com).

Room Background 22 ppb

ARCADIS
Infrastructure, environment, facilities

Sub-Slab Sample Collection Log

Sample ID: SS-3-09

Client:	NYSEG	**Boring Equipment:**	Hammer Drill
Project:		**Sealant:**	
Location:	Geneva, NY	**Tubing information:**	Teflon 1/4" OD
Project #:	B0013085	**Miscellaneous Equipment:**	NA
Samplers:	AMF / APS	**Subcontractor:**	NA
Sample Point Location:	Custodian Closet	**Moisture Content of Sampling Zone (circle one):**	Dry / Moist
Sampling Depth:	12"	**Approximate Purge Volume and Method:**	Syringe - 300mL
Time of Collection:			

Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
LAB	-28.5					purge 1116 ppb
1636	-30+					
1900	-5					

SUMMA Canister Information:

Size (circle one): 1 L (6 L)

Canister ID: 6628

Flow Controller ID: K246

0 ppm helium during purge

98% helium in bucket

General Observations/Notes:

post sample 48% of helium remain in bucket

Approximating One-Well Volume (for purging): When using 1¼-inch "Dummy Point" and a 6-inch sampling interval, sampling space will have a volume of approximately 150 mL. Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Please record current weather information including wind speed and direction, ambient temperature, barometric pressure and relative humidity via a suitable information source (e.g., weatherunderground.com).

22 ppb Background

ARCADIS
Infrastructure, environment, facilities

Sub-Slab Sample Collection Log

Sample ID: IA - 3 - 09

Client:	NYSEG	**Boring Equipment:**	NA
Project:		**Sealant:**	NA
Location:	Geneva, NY	**Tubing information:**	NA
Project #:	B0013085	**Miscellaneous Equipment:**	NA
Samplers:	AMF / NPS	**Subcontractor:**	NA
Sample Point Location:	Custodian Closet	**Moisture Content of Sampling Zone (circle one):**	Dry / Moist
Sampling Depth:	NA	**Approximate Purge Volume and Method:**	NA
Time of Collection:			

Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
LAB	-28.8					
1636	-30 +					
1900	-5					

SUMMA Canister Information:

Size (circle one): 1 L (6 L)

Canister ID: 1500

Flow Controller ID: K362

General Observations/Notes:

Approximating One-Well Volume (for purging): When using 1¼-inch "Dummy Point" and a 6-inch sampling interval, sampling space will have a volume of approximately 150 mL. Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Please record current weather information including wind speed and direction, ambient temperature, barometric pressure and relative humidity via a suitable information source (e.g., weatherunderground.com).

Background PID 0 ppb

ARCADIS
Infrastructure, environment, facilities

Sub-Slab Sample Collection Log

Sample ID: AA-1-09

Client:	NYSEG	**Boring Equipment:**	NA
Project:		**Sealant:**	NA
Location:	Geneva, NY	**Tubing information:**	NA
Project #:	B0013085	**Miscellaneous Equipment:**	NA
Samplers:	AMF / NPS	**Subcontractor:**	NA
Sample Point Location:	Northwest corner of Pub Safety Bldg.	**Moisture Content of Sampling Zone (circle one):**	Dry / Moist
Sampling Depth:	NA	**Approximate Purge Volume and Method:**	NA
Time of Collection:			

Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
LAB	-28.5					
1655	~~-16~~ -30					0 ppb
1730	-4					

SUMMA Canister Information:

Size (circle one): 1 L (6 L)

Canister ID: 7489

Flow Controller ID: K340

General Observations/Notes:

Due to faulty regulator sample duration was 35 minutes.

Approximating One-Well Volume (for purging): When using 1¼-inch "Dummy Point" and a 6-inch sampling interval, sampling space will have a volume of approximately 150 mL. Each foot of ¼-inch tubing will have a volume of approximately 10 mL.

Please record current weather information including wind speed and direction, ambient temperature, barometric pressure and relative humidity via a suitable information source (e.g., weatherunderground.com).

Original Chain of Custody Documentation

HGE-190105

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information	**Project Manager:** Christopher Engler, P.E.	**Sampled By:** NPS/AMF
Company: ARCADIS	Phone: 315.671.9331	1 of 2 COCs
Address: 6723 TOWPATH ROAD	Site Contact: Alexander Ryan, P.E.	
City/State/Zip SYRACUSE/NY/13214	TAL Contact: Jamie McKinney	
Phone: 315.446.9120		
FAX: 315.449.4111		
Project Name: Geneva (Wadsworth St) Former MGP	**Analysis Turnaround Time**	
Site/location: Geneva, NY	Standard (Specify) X Standard	
PO # B00130885	Rush (Specify)	

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
SS-1-09	5/14/09	1638	1911	-30	-5	K282	62275N	X					X				X		
DUP-SS-1-09	5/14/09	1638	1900	-30	-5	K400	62273	X					X				X		
IA-1-09	5/14/09	1646	1900	-30	-6	K402	7497	X					X		X				
SS-2-09	5/14/09	1639	1902	-30	-5.5	K341	93272	X					X				X		
IA-2-09	5/14/09	1639	1900	-30	-5.5	K355	S-1500	X					X		X				
SS-3-09	5/14/09	1636	1900	-30	-5	K246	6628	X					X				X		

Sampled by: NPS/AMF

Temperature (Fahrenheit)	Interior	Ambient
Start		
Stop		

Pressure (inches of Hg)	Interior	Ambient
Start		
Stop		

REC. AT AMBIENT
CUSTODY SEALS INTACT
2 BOXES RH 5/16/09
FED EX # 974408716588
↓ 6599
9 CANS / 9 FLOWS

Special Instructions/QC Requirements & Comments:
USEPA Compendium Method TO-15 plus additional analysis as described in quote.

Canisters Shipped by:	Date/Time:	Canisters Received by:
Samples Relinquished by:	Date/Time: 5/15/09 933	Received by: 05/15/09 0933
Relinquished by: R. Engler LSG, SYR	Date/Time: 05/15/09 18:00	Received by: Ryan Henry 5/16/09 1045

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

H9E190105

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information
Company: ARCADIS
Address: 6723 Towpath RD
City/State/Zip: Syracuse / NY / 13214
Phone: 315.446.9120
FAX: 315.449.4111
Project Name: Geneva (Wadsworth St.) former MGP
Site/location: Geneva, NY
PO # B0013085

Project Manager: Christopher Engler, P.E.
Phone: 315.671.9331
Site Contact: Alexander Ryan, P.E.
TAL Contact: Jamie McKinney

Analysis Turnaround Time
Standard (Specify) X Standard
Rush (Specify)

Sampled By: NPS / AMF

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, 'Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
IA-3-09	5/14/09	1636	1900	-30	-5	K362	1500	X					X		X				
AA-1-09	5/14/09	1655	1730	-30	-4	K340	7489	X					X			X			

Sampled by: NPS / AMF

Temperature (Fahrenheit)	Interior	Ambient	
Start			
Stop			

Pressure (inches of Hg)	Interior	Ambient	
Start			
Stop			

Special Instructions/QC Requirements & Comments:
USEPA Compendium Method TO-15 plus additional analysis as described in quote.

Canisters Shipped by:	Date/Time:	Canisters Received by:
Samples Relinquished by: [signature]	Date/Time: 5/15/09 933	Received by: [signature] 05/15/09
Relinquished by: R. English, SYR	Date/Time: 05/15/09 18:00	Received by:

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Appendix D

Identified Containerized Chemicals

Appendix D

New York State Electric & Gas Corporation
Geneva Public Safety Building
Geneva, New York

Identified Containerized Chemicals

The following containerized chemicals were identified inside the occupied portions of the Geneva Public Safety Building:

Custodial Closet

- ZINSSER – Stain Sealing Ceiling Paint (spray can)
- Bee Bopper - Insect Killer (spray can)
- Sherwin Williams – Pro Mar 200 Interior Latex Paint (5 gallon container)
- Dulux Paint Centers – Ultra-Hide Latex Semi-gloss Interior Paint (4 gallon container)
- Reliable – Premium Pink Lotion Soap (1 gallon container)
- Power Duster – Compressed Air Duster (spray can)
- Various paint cans – (1 gallon containers)

Photographs of containerized chemical containers are located in Appendix B-2.

ARCADIS

Appendix E

NYSDOH Indoor Air Quality Questionnaire and Building Inventory

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name AARON FALZARANO Date/Time Prepared 5/14/09 - 1300

Preparer's Affiliation ARCADIS Phone No. 315. 671. 9576

Purpose of Investigation EVALUATE SUB SLAB AND INDOOR AIR

1. OCCUPANT:

Interviewed: Y / N

Last Name: PERRY First Name: MARK

Address: 47 CASTLE STREET

County: ONTARIO

Home Phone: _____ Office Phone: 315. 789. 7271

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	(Commercial/Multi-use)
Industrial	Church	Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:_____

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) Police Department / City Court

Does it include residences (i.e., multi-use)? Y / (N) If yes, how many? _____

Other characteristics:

Number of floors 1 Building age 50 ±

Is the building insulated? (Y) / N How air tight? (Tight) / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

N/A

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

5. **BASEMENT AND CONSTRUCTION CHARACTERISTICS** (Circle all that apply)

a. Above grade construction:	wood frame	concrete (block wall)	stone	brick
b. Basement type:	full	crawlspace	slab	other _____
c. Basement floor:	concrete	dirt	stone	other _____
d. Basement floor:	uncovered	covered	covered with TILE/CARPET	
e. Concrete floor:	unsealed	sealed	sealed with PAINT	
f. Foundation walls:	poured	block	stone	other _____
g. Foundation walls:	unsealed	sealed	sealed with PAINT	
h. The basement is:	wet	damp	dry	moldy
i. The basement is:	finished	unfinished	partially finished	
j. Sump present?	Y / N			
k. Water in sump?	Y / N / not applicable			

Basement/Lowest level depth below grade: 0 (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

FLOOR DRAINS

6. **HEATING, VENTING and AIR CONDITIONING** (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other _____

The primary type of fuel used is:

Natural Gas	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: NATURAL GAS

Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other_____
Air conditioning:	Central Air	Window units	Open Windows	None

Are there air distribution ducts present? (Y) / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

Cold air return is present, tight ductwork, re-built 1997 - 1998.

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
~~Basement~~	N/A
1st Floor	City Court, Offices, Police Department
2nd Floor	
3rd Floor	
4th Floor	

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? (Y) / N

b. Does the garage have a separate heating unit? (Y) / N / NA

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) (Y) / N / NA Please specify Trucks

d. Has the building ever had a fire? Y / (N) When?

e. Is a kerosene or unvented gas space heater present? Y / (N) Where?

f. Is there a workshop or hobby/craft area? Y / (N) Where & Type?

g. Is there smoking in the building? Y / (N) How frequently?

h. Have cleaning products been used recently? (Y) / N When & Type? 5 days/wk Restrooms/Floors

i. Have cosmetic products been used recently? Y / (N) When & Type?

j. Has painting/staining been done in the last 6 months? Y (N) Where & When? _____

k. Is there new carpet, drapes or other textiles? Y (N) Where & When? _____

l. Have air fresheners been used recently? Y / (N) When & Type? _____

m. Is there a kitchen exhaust fan? Y (N) If yes, where vented? _____

n. Is there a bathroom exhaust fan? Y / (N) If yes, where vented? _____

o. Is there a clothes dryer? Y (N) If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / (N) When & Type? _____

Are there odors in the building? Y (N)
If yes, please describe: _____

Do any of the building occupants use solvents at work? Y (N)
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly) — No
Yes, use dry-cleaning infrequently (monthly or less) — (Unknown)
Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y (N) Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply:	(Public Water)	Drilled Well	Driven Well	Dug Well	Other: _____
Sewage Disposal:	(Public Sewer)	Septic Tank	Leach Field	Dry Well	Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement: N/A

First Floor: REFER TO FIGURE 1

12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.

REFER TO SVI WORK PLAN

13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: RAE SYSTEMS - ppbRAE

BACKGROUND PID : 22ppb

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N
CUSTODIAN CLOSET	INSECT SPRAY	16oz	USED	SEE PHOTO		Y
CUSTODIAN CLOSET	PAINT	VARIES	USED	SEE PHOTO		Y
CUSTODIAN CLOSET	SOAPS	1gal	USED	SEE PHOTO		Y

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**

** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

ARCADIS

Appendix F

NYSEG Geneva Former MGP Data Usability Summary Report

ARCADIS
Infrastructure, environment, buildings

Imagine the result

NYSEG – Wadsworth Street
Geneva Former MGP

Data Usability Summary Report

GENEVA, NEW YORK

Volatiles Analyses

SDG #H9E190105

Analyses Performed By:
Test America
Knoxville, Tennessee

Report: #11282R
Review Level: Tier III
Project: B0013057.0001.00002

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #H9E190105 for samples collected in association with the NYSEG Wadsworth Street, Geneva MGP Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	PCB	MET	MISC
SS-1-09	H9E19105-001	AIR	5/14/2009		X				
DUP-SS-1-09	H9E19105-002	AIR	5/14/2009	SS-1-09	X				
IA-1-09	H9E19105-003	AIR	5/14/2009		X				
SS-2-09	H9E19105-004	AIR	5/14/2009		X				
IA-2-09	H9E19105-005	AIR	5/14/2009		X				
SS-3-09	H9E19105-006	AIR	5/14/2009		X				
IA-3-09	H9E19105-007	AIR	5/14/2009		X				
AA-1-09	H9E19105-008	AIR	5/14/2009		X				

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain of Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance (QA) or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to (United Stated Environmental Protection Agency) USEPA Method TO-15. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999; USEPA Region II SOP HW-31 Validating Air Samples, Volatile Organic Analysis of Ambient Air In Canister by Method TO-15, October 2006; New York State DEC Analytical Method ASP 2005 TO-15 (QA/QC Criteria R9 TO-15) with NYSDEC Modifications to R9 TO-15 QA/QC Criteria February 2008; and the reviewer's professional judgment.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Method TO-15	Air	30 days storage from collection to analysis	Ambient temperature

All samples were analyzed within the specified holding time criteria.

The sample locations with canisters that exceeded return pressure criteria are presented in the following table.

Sample Locations	Return Pressure/Vacuum Reading ("of Hg)
AA-1-09	-2.8

Sample results associated with sample locations analyzed by analytical method TO-15 were qualified, as specified in the table below. All other canister return pressure/vacuum criteria were met.

Criteria	Qualification	
	Detected Analytes	Nondetect Analytes
Return pressure/vacuum < 4"Hg to 1"Hg	J	UJ

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable. System performance and column resolution were acceptable.

Sample location IA-3-09 was compliant with the Method TO-15 requirement of analysis within a 24-hour tune clock but not compliant with the NYSDEC requirement of analysis within a 12-hour tune clock. The data was not qualified.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration verification (ICV) standards must exhibit a RRF value greater than control limit (0.05) and either a %RSD less than the control limit (30%) or a correlation coefficient greater than 0.99.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration verification (CCV) must exhibit a percent difference (%D) less than the control limit (30%) and a RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial or Continuing	Compound	Criteria
SS-1-09 DUP-SS-1-09 IA-1-09 IA-2-09 SS-3-09 IA-3-09	CCV %D	1,2-Dichloro-1,1,2,2-tetrafluoroethane	43.7%
SS-2-09 AA-1-09	CCV %D	Carbon tetrachloride	31.7%
		n-Decane	-32.6%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial / Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF < 0.05	Non-detect	R
		Detect	J
	RRF < 0.01[1]	Non-detect	R
		Detect	J
	RRF > 0.05 or RRF > 0.01[1]	Non-detect	No Action
		Detect	

Initial / Continuing	Criteria	Sample Result	Qualification
Initial Calibration	%RSD > 30%	Non-detect	UJ
		Detect	J
Continuing Calibration	%D > 30% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D > 30% (decrease in sensitivity)	Non-detect	UJ
		Detect	J

1 RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

The laboratory performed a single-point initial calibration for the following compounds, utilizing a calibration point at the reporting limit:

Indene
Indane
1-Methylnaphthalene
2-Methylnaphthalene
Thiophene
1,2,3-Trimethylbenzene

Where these compounds were not detected above the reporting limits in the samples, data qualification is not warranted. The results which were detected above the reporting limits were qualified as estimated (J) as follows:

Sample Locations	Analytes	Sample Result
SS-1-09	1,2,3-Trimethylbenzene	1.3
DUP-SS-1-09	1,2,3-Trimethylbenzene	1.1
SS-2-09	1,2,3-Trimethylbenzene	0.53
IA-2-09	1,2,3-Trimethylbenzene	0.42
SS-3-09	1,2,3-Trimethylbenzene	0.84
IA-3-09	1,2,3-Trimethylbenzene	0.60

Units: $\mu g/m^3$

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than ± 40 % of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the established acceptance limits of 70% to 130%.

Sample locations associated with LCS analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
SS-1-09 DUP-SS-1-09 IA-1-09 IA-2-09 SS-3-09 IA-3-09	1,2-Dichloro-1,1,2,2-tetrafluoroethane	>130%
SS-2-09 AA-1-09	Carbon tetrachloride	>130%
	n-Decane	<70% but > 10%

The criteria used to evaluate the LCS recoveries are presented in the following table. In the case of an LCS deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
LCS percent recovery >130%	Non-detect	No Action
	Detect	J
LCS percent recovery <70% but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

8. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 25% is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SS-1-09/ DUP-SS-1-09	1,1,2-Trichlorotrifluoroethane	0.62	ND(0.61)	AC
	1,2,3-Trimethylbenzene	1.3	1.1	AC
	1,2,4-Trimethylbenzene	3.2	3.0	6.4 %
	1,3,5-Trimethylbenzene	1.3	1.2	AC
	1,4-Dichlorobenzene	1.3	1.3	AC
	2-Methylbutane	1.6	1.4	AC
	Benzene	0.73	0.64	AC
	Carbon tetrachloride	0.7	ND(0.5)	AC
	Chloroethane	0.36	ND(0.21)	AC
	Chloroform	1.4	ND(0.39)	NC
	Chloromethane	2.3	ND(0.41)	NC
	Dichlorodifluoromethane	2.3	2.2	4.4 %
	Ethylbenzene	6.5	6.4	1.5 %
	Methylene chloride	3.6	2.2	AC
	m-Xylene & p-Xylene	28	28	0.0 %
	Naphthalene	1.1	1.1	AC
	n-Butane	4.8	3.7	25.8 %
	n-Decane	5.0	5.0	AC
	n-Dodecane	3.6	4.1	AC
	n-Heptane	1.6	1.4	AC
	n-Hexane	3.3	1.2	NC
	n-Octane	1.8	1.8	AC
	Nonane	2.2	2.2	AC
	n-Undecane	3.2	3.7	AC
	o-Xylene	10	9.9	1.0 %
	Pentane	2.8	ND(1.2)	AC
	Toluene	4.3	4.3	0.0 %
	Trichloroethene	0.44	0.36	AC
	Trichlorofluoromethane	1.3	1.2	AC

Units: $\mu g/m^3$ ND = Not detected
AC = Acceptable
NC = Not compliant

The compound n-hexane, chloroform and chloromethane associated with sample locations SS-1-09 and DUP-SS-1-09 exhibited a field duplicate RPD greater than the control limit. The associated sample results from sample locations for the listed analyte were qualified as estimated.

9. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
SS-3-09	n-Butane	170 E	770 D	770 D
IA-3-09	n-Butane	120 E	340 D	340 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

Tentatively identified compounds (TICs) were identified in the samples. VOC analysis requires that TICs be qualified as estimated (NJ). Sample locations in which TICs were identified are summarized in the following table

Sample ID	Compound	Original Result	Reported Result
SS-2-09	2,3-Dimethylpentane	1.3	1.3 NJ

Units: ppb(v/v)

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: EPA TO-15	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Canister return vacuum (> 5" Hg ± 1)		X	X		
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS)		X	X		
Laboratory Control Sample Duplicate(LCSD)					X
LCS/LCSD Precision (RPD)					X
Field Duplicate (RPD)		X	X		
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present				X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

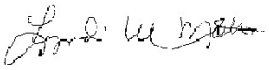
SAMPLE COMPLIANCE REPORT

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	PCB	MET	MISC	
H9E19105	5/14/2009	TO-15	SS-1-09	Air	No	--	--	--	--	CCV %D, LCS %Recovery, Field Duplicate RPD
H9E19105	5/14/2009	TO-15	DUP-SS-1-09	Air	No	--	--	--	--	CCV %D, LCS %Recovery, Field Duplicate RPD
H9E19105	5/14/2009	TO-15	IA-1-09	Air	No	--	--	--	--	CCV %D, LCS %Recovery
H9E19105	5/14/2009	TO-15	SS-2-09	Air	No	--	--	--	--	CCV %D, LCS %Recovery
H9E19105	5/14/2009	TO-15	IA-2-09	Air	No	--	--	--	--	CCV %D, LCS %Recovery
H9E19105	5/14/2009	TO-15	SS-3-09	Air	No	--	--	--	--	CCV %D, LCS %Recovery
H9E19105	5/14/2009	TO-15	IA-3-09	Air	No	--	--	--	--	CCV %D, LCS %Recovery
H9E19105	5/14/2009	TO-15	AA-1-09	Air	No	--	--	--	--	CCV %D, LCS %Recovery, Canister return pressure

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable.

VALIDATION PERFORMED BY: Lyndi W. Mott

SIGNATURE: 

DATE: December 28, 2009

PEER REVIEW: Dennis Capria

DATE: December 28, 2009

CHAIN OF CUSTODY /
CORRECTED SAMPLE ANALYSIS DATA SHEETS

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

HPE 190105

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information	Project Manager: Christopher Engler, P.E.	Sampled By: NPS/AMF
Company: ARCADIS	Phone: 315.671.9331	
Address: 6723 TOWPATH ROAD	Site Contact: Alexander Ryan, P.E.	
City/State/Zip SYRACUSE/NY/13214	TAL Contact: Jamie McKinney	
Phone: 315.446.9120		
FAX: 315.449.4111		
Project Name: Geneva (Lendsworth St) Former MGP	Analysis Turnaround Time	
Site/location: Geneva, NY	Standard (Specify) X Standard	
PO # B00130R5	Rush (Specify)	

1 of 2 COCs

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
SS-1-09	5/14/09	1638	1911	-30	-5	K282	62275N	X					X				X		
DUP-SS-1-09	5/14/09	1638	1900	-30	-5	K400	62273	X					X				X		
IA-1-09	5/14/09	1646	1900	-30	-6	K402	7497	X					X		X				
SS-2-09	5/14/09	1639	1902	-30	-5.5	K341	93272	X					X				X		
IA-2-09	5/14/09	1639	1900	-30	-5.5	K355	5-1500	X					X		X				
SS-3-09	5/14/09	1636	1900	-30	-5	K246	6628	X					X				X		

Sampled by: NPS/AMF

Temperature (Fahrenheit)	Interior	Ambient	
Start			
Stop			

Pressure (Inches of Hg)	Interior	Ambient	
Start			
Stop			

REC. AT AMBIENT
CUSTODY SEALS INTACT
2 BOXES RH 5/16/09
FED EX # 974408716588
↓ 6599
9 CANS / 9 FLOWS

Special Instructions/QC Requirements & Comments:
USEPA Compendium Method TO-15 plus additional analysis as described in quote.

Canisters Shipped by:	Date/Time:	Canisters Received by:
Samples Relinquished by:	Date/Time: 5/15/09 933	Received by: 05/15/09 0933
Relinquished by:	Date/Time: 05/15/09 18:00	Received by: 5/16/09 1045

TAL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
phone 865-291-3000 fax 865-584-4315

H4E19015

Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of these samples.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact Information	Project Manager: Christopher Engles, P.E.	Sampled By: NPS / AMF	2 of 2 COCs
Company: ARCADIS	Phone: 315.671.9331		
Address: 6723 TOWPATH RD	Site Contact: Alexander Ryan, P.E.		
City/State/Zip SYRACUSE / NY / 13214	TAL Contact: Jamie McKinney		
Phone: 315.446.9120			
FAX: 315.449.4111			
Project Name: Geneva (Leads north St.) Former MGP	Analysis Turnaround Time		
Site/location: Geneva, NY	Standard (Specify) X Standard		
PO # B00130B5	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
IA-3-09	5/14/09	1636	1900	-30	-5	K362	1500	X					X		X				
AA-1-09	5/14/09	1655	1730	-30	-4	K340	7489	X					X			X			

Sampled by: NPS / AMF

Temperature (Fahrenheit)	Interior	Ambient	
Start			
Stop			

Pressure (inches of Hg)	Interior	Ambient	
Start			
Stop			

Special Instructions/QC Requirements & Comments:
USEPA Compendium Method TO-15 plus additional analysis as described in quote.

Canisters Shipped by:	Date/Time:	Canisters Received by:
Samples Relinquished by:	Date/Time: 5/15/09 933	Received by: 05/15/09
Relinquished by: R. English, SyR	Date/Time: 05/15/09 1800	Received by:

ARCADIS U.S., Inc.

Client Sample ID: SS-1-09

GC/MS Volatiles

Lot-Sample #	H9E190105 - 001	**Work Order #**	LC99T1AA	**Matrix.....:**	AIR
Date Sampled...:	05/14/2009	**Date Received..:**	05/16/2009		
Prep Date.....:	05/21/2009	**Analysis Date...**	05/21/2009		
Prep Batch #....:	9141459				
Dilution Factor.:	1	**Method.....:**	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.080	ND	0.36
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.080	ND	0.56
Ethylbenzene	**1.5**	**0.080**	**6.5**	**0.35**
Trichlorofluoromethane	**0.23**	**0.080**	**1.3**	**0.45**
n-Heptane	**0.39**	**0.20**	**1.6**	**0.82**
Hexachlorobutadiene	ND	0.40	ND	4.3
n-Hexane	**0.95**	**0.20**	**3.3 J**	**0.70**
2,2,4-Trimethylpentane	ND	0.20	ND	0.93
Isopropylbenzene	ND	0.16	ND	0.79
Methylene chloride	**1.0**	**0.20**	**3.6**	**0.69**
2-Methylnaphthalene	ND	1.0	ND	5.8
Naphthalene	**0.22**	**0.20**	**1.1**	**1.0**
Benzene	**0.23**	**0.080**	**0.73**	**0.26**
n-Octane	**0.39**	**0.16**	**1.8**	**0.75**
Pentane	**0.94**	**0.40**	**2.8**	**1.2**
Styrene	ND	0.080	ND	0.34
1,1,2,2-Tetrachloroethane	ND	0.080	ND	0.55
Tetrachloroethene	ND	0.080	ND	0.54
Toluene	**1.1**	**0.080**	**4.3**	**0.30**
1,2,4-Trichlorobenzene	ND	0.40	ND	3.0
1,1,1-Trichloroethane	ND	0.080	ND	0.44
1,1,2-Trichloroethane	ND	0.080	ND	0.44
Trichloroethene	**0.082**	**0.040**	**0.44**	**0.21**
1,2,4-Trimethylbenzene	**0.65**	**0.080**	**3.2**	**0.39**
1,3,5-Trimethylbenzene	**0.27**	**0.080**	**1.3**	**0.39**
Vinyl chloride	ND	0.080	ND	0.20
o-Xylene	**2.3**	**0.080**	**10**	**0.35**
1-Methylnaphthalene	ND	1.0	ND	5.8
Methyl tert-butyl ether	ND	0.40	ND	1.4
n-Decane	**0.86**	**0.40**	**5.0**	**2.3**
n-Dodecane	**0.52**	**0.40**	**3.6**	**2.8**
n-Undecane	**0.51**	**0.40**	**3.2**	**2.6**
1,1,2-Trichlorotrifluoroethane	**0.080**	**0.080**	**0.62**	**0.61**
Nonane	**0.42**	**0.20**	**2.2**	**1.0**
m-Xylene & p-Xylene	**6.5**	**0.080**	**28**	**0.35**
1,2-Dibromoethane (EDB)	ND	0.080	ND	0.61
n-Butane	**2.0**	**0.16**	**4.8**	**0.38**
Bromomethane	ND	0.080	ND	0.31
Indene	ND	0.16	ND	0.76
Thiophene	ND	0.080	ND	0.28

ARCADIS U.S., Inc.

Client Sample ID: SS-1-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 001 Work Order # LC99T1AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Carbon tetrachloride	**0.11**	**0.080**	**0.70**	**0.50**
Chlorobenzene	ND	0.080	ND	0.37
1,2,3-Trimethylbenzene	**0.27**	**0.080**	**1.3 J**	**0.39**
Chloroethane	**0.13**	**0.080**	**0.36**	**0.21**
Chloroform	**0.29**	**0.080**	**1.4 J**	**0.39**
Chloromethane	**1.1**	**0.20**	**2.3 J**	**0.41**
2-Methylbutane	**0.56**	**0.20**	**1.6**	**0.59**
Indane	ND	0.080	ND	0.39
1,2-Dichlorobenzene	ND	0.080	ND	0.48
1,3-Dichlorobenzene	ND	0.080	ND	0.48
1,4-Dichlorobenzene	**0.21**	**0.080**	**1.3**	**0.48**
Dichlorodifluoromethane	**0.47**	**0.080**	**2.3**	**0.40**
1,1-Dichloroethane	ND	0.080	ND	0.32
1,2-Dichloroethane	ND	0.080	ND	0.32
1,1-Dichloroethene	ND	0.080	ND	0.32
cis-1,2-Dichloroethene	ND	0.080	ND	0.32
1,2-Dichloropropane	ND	0.080	ND	0.37
cis-1,3-Dichloropropene	ND	0.080	ND	0.36

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
Butylcyclohexane	ND	ppb(v/v)
2,3-Dimethylheptane	ND	ppb(v/v)
2,3-Dimethylpentane	ND	ppb(v/v)

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	101	70 - 130

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: DUP-SS-1-09

GC/MS Volatiles

Lot-Sample #	H9E190105 - 002	**Work Order #**	LC99V1AA	**Matrix.....:**	AIR
Date Sampled...:	05/14/2009	**Date Received..:**	05/16/2009		
Prep Date.....:	05/21/2009	**Analysis Date...**	05/21/2009		
Prep Batch #.....:	9141459				
Dilution Factor.:	1	**Method.....:**	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.080	ND	0.36
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.080	ND	0.56
Ethylbenzene	**1.5**	**0.080**	**6.4**	**0.35**
Trichlorofluoromethane	**0.22**	**0.080**	**1.2**	**0.45**
n-Heptane	**0.34**	**0.20**	**1.4**	**0.82**
Hexachlorobutadiene	ND	0.40	ND	4.3
n-Hexane	**0.35**	**0.20**	**1.2 J**	**0.70**
2,2,4-Trimethylpentane	ND	0.20	ND	0.93
Isopropylbenzene	ND	0.16	ND	0.79
Methylene chloride	**0.63**	**0.20**	**2.2**	**0.69**
2-Methylnaphthalene	ND	1.0	ND	5.8
Naphthalene	**0.21**	**0.20**	**1.1**	**1.0**
Benzene	**0.20**	**0.080**	**0.64**	**0.26**
n-Octane	**0.39**	**0.16**	**1.8**	**0.75**
Pentane	ND	0.40	ND	1.2
Styrene	ND	0.080	ND	0.34
1,1,2,2-Tetrachloroethane	ND	0.080	ND	0.55
Tetrachloroethene	ND	0.080	ND	0.54
Toluene	**1.2**	**0.080**	**4.3**	**0.30**
1,2,4-Trichlorobenzene	ND	0.40	ND	3.0
1,1,1-Trichloroethane	ND	0.080	ND	0.44
1,1,2-Trichloroethane	ND	0.080	ND	0.44
Trichloroethene	**0.067**	**0.040**	**0.36**	**0.21**
1,2,4-Trimethylbenzene	**0.61**	**0.080**	**3.0**	**0.39**
1,3,5-Trimethylbenzene	**0.25**	**0.080**	**1.2**	**0.39**
Vinyl chloride	ND	0.080	ND	0.20
o-Xylene	**2.3**	**0.080**	**9.9**	**0.35**
1-Methylnaphthalene	ND	1.0	ND	5.8
Methyl tert-butyl ether	ND	0.40	ND	1.4
n-Decane	**0.86**	**0.40**	**5.0**	**2.3**
n-Dodecane	**0.58**	**0.40**	**4.1**	**2.8**
n-Undecane	**0.58**	**0.40**	**3.7**	**2.6**
1,1,2-Trichlorotrifluoroethane	ND	0.080	ND	0.61
Nonane	**0.41**	**0.20**	**2.2**	**1.0**
m-Xylene & p-Xylene	**6.4**	**0.080**	**28**	**0.35**
1,2-Dibromoethane (EDB)	ND	0.080	ND	0.61
n-Butane	**1.6**	**0.16**	**3.7**	**0.38**
Bromomethane	ND	0.080	ND	0.31
Indene	ND	0.16	ND	0.76
Thiophene	ND	0.080	ND	0.28

ARCADIS U.S., Inc.

Client Sample ID: DUP-SS-1-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 002 Work Order # LC99V1AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Carbon tetrachloride	ND	0.080	ND	0.50
Chlorobenzene	ND	0.080	ND	0.37
1,2,3-Trimethylbenzene	**0.23**	**0.080**	**1.1 J**	**0.39**
Chloroethane	ND	0.080	ND	0.21
Chloroform	ND	0.080	ND UJ	0.39
Chloromethane	ND	0.20	ND UJ	0.41
2-Methylbutane	**0.48**	**0.20**	**1.4**	**0.59**
Indane	ND	0.080	ND	0.39
1,2-Dichlorobenzene	ND	0.080	ND	0.48
1,3-Dichlorobenzene	ND	0.080	ND	0.48
1,4-Dichlorobenzene	**0.22**	**0.080**	**1.3**	**0.48**
Dichlorodifluoromethane	**0.45**	**0.080**	**2.2**	**0.40**
1,1-Dichloroethane	ND	0.080	ND	0.32
1,2-Dichloroethane	ND	0.080	ND	0.32
1,1-Dichloroethene	ND	0.080	ND	0.32
cis-1,2-Dichloroethene	ND	0.080	ND	0.32
1,2-Dichloropropane	ND	0.080	ND	0.37
cis-1,3-Dichloropropene	ND	0.080	ND	0.36

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
Butylcyclohexane	ND	ppb(v/v)
2,3-Dimethylheptane	ND	ppb(v/v)
2,3-Dimethylpentane	ND	ppb(v/v)

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	103	70 - 130

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: IA-1-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 003 Work Order # LC99W1AA Matrix.....: AIR

Date Sampled...: 05/14/2009 Date Received..: 05/16/2009
Prep Date.....: 05/21/2009 Analysis Date... 05/21/2009
Prep Batch #.....: 9141459
Dilution Factor.: 1 Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.080	ND	0.36
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.080	ND	0.56
Ethylbenzene	**0.14**	**0.080**	**0.60**	**0.35**
Trichlorofluoromethane	**0.25**	**0.080**	**1.4**	**0.45**
n-Heptane	ND	0.20	ND	0.82
Hexachlorobutadiene	ND	0.40	ND	4.3
n-Hexane	**0.23**	**0.20**	**0.82**	**0.70**
2,2,4-Trimethylpentane	ND	0.20	ND	0.93
Isopropylbenzene	ND	0.16	ND	0.79
Methylene chloride	**3.7**	**0.20**	**13**	**0.69**
2-Methylnaphthalene	ND	1.0	ND	5.8
Naphthalene	ND	0.20	ND	1.0
Benzene	**0.18**	**0.080**	**0.56**	**0.26**
n-Octane	ND	0.16	ND	0.75
Pentane	ND	0.40	ND	1.2
Styrene	ND	0.080	ND	0.34
1,1,2,2-Tetrachloroethane	ND	0.080	ND	0.55
Tetrachloroethene	ND	0.080	ND	0.54
Toluene	**0.59**	**0.080**	**2.2**	**0.30**
1,2,4-Trichlorobenzene	ND	0.40	ND	3.0
1,1,1-Trichloroethane	ND	0.080	ND	0.44
1,1,2-Trichloroethane	ND	0.080	ND	0.44
Trichloroethene	ND	0.040	ND	0.21
1,2,4-Trimethylbenzene	ND	0.080	ND	0.39
1,3,5-Trimethylbenzene	ND	0.080	ND	0.39
Vinyl chloride	ND	0.080	ND	0.20
o-Xylene	**0.14**	**0.080**	**0.61**	**0.35**
1-Methylnaphthalene	ND	1.0	ND	5.8
Methyl tert-butyl ether	ND	0.40	ND	1.4
n-Decane	ND	0.40	ND	2.3
n-Dodecane	**0.67**	**0.40**	**4.7**	**2.8**
n-Undecane	ND	0.40	ND	2.6
1,1,2-Trichlorotrifluoroethane	**0.082**	**0.080**	**0.63**	**0.61**
Nonane	ND	0.20	ND	1.0
m-Xylene & p-Xylene	**0.43**	**0.080**	**1.9**	**0.35**
1,2-Dibromoethane (EDB)	ND	0.080	ND	0.61
n-Butane	**11**	**0.16**	**25**	**0.38**
Bromomethane	ND	0.080	ND	0.31
Indene	ND	0.16	ND	0.76

ARCADIS U.S., Inc.

Client Sample ID: IA-1-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 003 Work Order # LC99W1AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Thiophene	ND	0.080	ND	0.28
Carbon tetrachloride	**0.10**	**0.080**	**0.65**	**0.50**
Chlorobenzene	ND	0.080	ND	0.37
1,2,3-Trimethylbenzene	ND	0.080	ND	0.39
Chloroethane	ND	0.080	ND	0.21
Chloroform	ND	0.080	ND	0.39
Chloromethane	**0.47**	**0.20**	**0.97**	**0.41**
2-Methylbutane	**0.58**	**0.20**	**1.7**	**0.59**
Indane	ND	0.080	ND	0.39
1,2-Dichlorobenzene	ND	0.080	ND	0.48
1,3-Dichlorobenzene	ND	0.080	ND	0.48
1,4-Dichlorobenzene	**0.42**	**0.080**	**2.5**	**0.48**
Dichlorodifluoromethane	**0.47**	**0.080**	**2.3**	**0.40**
1,1-Dichloroethane	ND	0.080	ND	0.32
1,2-Dichloroethane	ND	0.080	ND	0.32
1,1-Dichloroethene	ND	0.080	ND	0.32
cis-1,2-Dichloroethene	ND	0.080	ND	0.32
1,2-Dichloropropane	ND	0.080	ND	0.37
cis-1,3-Dichloropropene	ND	0.080	ND	0.36

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
Butylcyclohexane	ND	ppb(v/v)
2,3-Dimethylheptane	ND	ppb(v/v)
2,3-Dimethylpentane	ND	ppb(v/v)

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	99	70 - 130

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: SS-2-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 004 Work Order # LC99X1AA Matrix.....: AIR

Date Sampled...: 05/14/2009 Date Received..: 05/16/2009
Prep Date.....: 05/22/2009 Analysis Date... 05/22/2009
Prep Batch #.....: 9143081
Dilution Factor.: 1 Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.080	ND	0.36
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.080	ND	0.56
Ethylbenzene	**0.63**	**0.080**	**2.8**	**0.35**
Trichlorofluoromethane	**0.28**	**0.080**	**1.5**	**0.45**
n-Heptane	**8.3**	**0.20**	**34**	**0.82**
Hexachlorobutadiene	ND	0.40	ND	4.3
n-Hexane	**8.3**	**0.20**	**29**	**0.70**
2,2,4-Trimethylpentane	ND	0.20	ND	0.93
Isopropylbenzene	ND	0.16	ND	0.79
Methylene chloride	**0.44**	**0.20**	**1.5**	**0.69**
2-Methylnaphthalene	ND	1.0	ND	5.8
Naphthalene	ND	0.20	ND	1.0
Benzene	**0.28**	**0.080**	**0.88**	**0.26**
n-Octane	**7.5**	**0.16**	**35**	**0.75**
Pentane	**3.6**	**0.40**	**11**	**1.2**
Styrene	ND	0.080	ND	0.34
1,1,2,2-Tetrachloroethane	ND	0.080	ND	0.55
Tetrachloroethene	**0.45**	**0.080**	**3.1**	**0.54**
Toluene	**1.7**	**0.080**	**6.3**	**0.30**
1,2,4-Trichlorobenzene	ND	0.40	ND	3.0
1,1,1-Trichloroethane	**0.44**	**0.080**	**2.4**	**0.44**
1,1,2-Trichloroethane	ND	0.080	ND	0.44
Trichloroethene	ND	0.040	ND	0.21
1,2,4-Trimethylbenzene	**0.35**	**0.080**	**1.7**	**0.39**
1,3,5-Trimethylbenzene	**0.23**	**0.080**	**1.1**	**0.39**
Vinyl chloride	ND	0.080	ND	0.20
o-Xylene	**1.3**	**0.080**	**5.6**	**0.35**
1-Methylnaphthalene	ND	1.0	ND	5.8
Methyl tert-butyl ether	ND	0.40	ND	1.4
n-Decane	**1.6**	**0.40**	**9.1** J	**2.3**
n-Dodecane	ND	0.40	ND	2.8
n-Undecane	ND	0.40	ND	2.6
1,1,2-Trichlorotrifluoroethane	**0.083**	**0.080**	**0.63**	**0.61**
Nonane	**3.5**	**0.20**	**18**	**1.0**
m-Xylene & p-Xylene	**4.1**	**0.080**	**18**	**0.35**
1,2-Dibromoethane (EDB)	ND	0.080	ND	0.61
n-Butane	**2.6**	**0.16**	**6.3**	**0.38**
Bromomethane	ND	0.080	ND	0.31
Indene	ND	0.16	ND	0.76
Thiophene	ND	0.080	ND	0.28

ARCADIS U.S., Inc.

Client Sample ID: SS-2-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 004 Work Order # LC99X1AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Carbon tetrachloride	**0.097**	**0.080**	**0.61 J**	**0.50**
Chlorobenzene	ND	0.080	ND	0.37
1,2,3-Trimethylbenzene	**0.11**	**0.080**	**0.53 J**	**0.39**
Chloroethane	ND	0.080	ND	0.21
Chloroform	**0.085**	**0.080**	**0.41**	**0.39**
Chloromethane	**0.20**	**0.20**	**0.41**	**0.41**
2-Methylbutane	**4.8**	**0.20**	**14**	**0.59**
Indane	ND	0.080	ND	0.39
1,2-Dichlorobenzene	ND	0.080	ND	0.48
1,3-Dichlorobenzene	ND	0.080	ND	0.48
1,4-Dichlorobenzene	**0.21**	**0.080**	**1.3**	**0.48**
Dichlorodifluoromethane	**0.49**	**0.080**	**2.4**	**0.40**
1,1-Dichloroethane	ND	0.080	ND	0.32
1,2-Dichloroethane	ND	0.080	ND	0.32
1,1-Dichloroethene	ND	0.080	ND	0.32
cis-1,2-Dichloroethene	ND	0.080	ND	0.32
1,2-Dichloropropane	ND	0.080	ND	0.37
cis-1,3-Dichloropropene	ND	0.080	ND	0.36

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
Butylcyclohexane	ND	ppb(v/v)
2,3-Dimethylheptane	ND	ppb(v/v)
2,3-Dimethylpentane	1.3 NJ	ppb(v/v)

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	96	70 - 130

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: IA-2-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 005 Work Order # LC9901AA Matrix.....: AIR

Date Sampled...: 05/14/2009 Date Received..: 05/16/2009
Prep Date.....: 05/21/2009 Analysis Date... 05/21/2009
Prep Batch #.....: 9141459
Dilution Factor.: 1 Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.080	ND	0.36
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.080	ND	0.56
Ethylbenzene	**0.16**	**0.080**	**0.70**	**0.35**
Trichlorofluoromethane	**0.23**	**0.080**	**1.3**	**0.45**
n-Heptane	ND	0.20	ND	0.82
Hexachlorobutadiene	ND	0.40	ND	4.3
n-Hexane	ND	0.20	ND	0.70
2,2,4-Trimethylpentane	ND	0.20	ND	0.93
Isopropylbenzene	ND	0.16	ND	0.79
Methylene chloride	**0.90**	**0.20**	**3.1**	**0.69**
2-Methylnaphthalene	ND	1.0	ND	5.8
Naphthalene	ND	0.20	ND	1.0
Benzene	**0.18**	**0.080**	**0.57**	**0.26**
n-Octane	ND	0.16	ND	0.75
Pentane	ND	0.40	ND	1.2
Styrene	ND	0.080	ND	0.34
1,1,2,2-Tetrachloroethane	ND	0.080	ND	0.55
Tetrachloroethene	ND	0.080	ND	0.54
Toluene	**0.63**	**0.080**	**2.4**	**0.30**
1,2,4-Trichlorobenzene	ND	0.40	ND	3.0
1,1,1-Trichloroethane	ND	0.080	ND	0.44
1,1,2-Trichloroethane	ND	0.080	ND	0.44
Trichloroethene	ND	0.040	ND	0.21
1,2,4-Trimethylbenzene	**0.11**	**0.080**	**0.56**	**0.39**
1,3,5-Trimethylbenzene	ND	0.080	ND	0.39
Vinyl chloride	ND	0.080	ND	0.20
o-Xylene	**0.17**	**0.080**	**0.73**	**0.35**
1-Methylnaphthalene	ND	1.0	ND	5.8
Methyl tert-butyl ether	ND	0.40	ND	1.4
n-Decane	ND	0.40	ND	2.3
n-Dodecane	**1.4**	**0.40**	**9.6**	**2.8**
n-Undecane	**0.41**	**0.40**	**2.7**	**2.6**
1,1,2-Trichlorotrifluoroethane	ND	0.080	ND	0.61
Nonane	ND	0.20	ND	1.0
m-Xylene & p-Xylene	**0.51**	**0.080**	**2.2**	**0.35**
1,2-Dibromoethane (EDB)	ND	0.080	ND	0.61
n-Butane	**8.6**	**0.16**	**21**	**0.38**
Bromomethane	ND	0.080	ND	0.31
Indene	ND	0.16	ND	0.76

ARCADIS U.S., Inc.

Client Sample ID: IA-2-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 005 Work Order # LC9901AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Thiophene	ND	0.080	ND	0.28
Carbon tetrachloride	**0.11**	**0.080**	**0.68**	**0.50**
Chlorobenzene	ND	0.080	ND	0.37
1,2,3-Trimethylbenzene	**0.086**	**0.080**	**0.42** J	**0.39**
Chloroethane	ND	0.080	ND	0.21
Chloroform	ND	0.080	ND	0.39
Chloromethane	**0.41**	**0.20**	**0.84**	**0.41**
2-Methylbutane	**0.48**	**0.20**	**1.4**	**0.59**
Indane	ND	0.080	ND	0.39
1,2-Dichlorobenzene	ND	0.080	ND	0.48
1,3-Dichlorobenzene	ND	0.080	ND	0.48
1,4-Dichlorobenzene	**0.49**	**0.080**	**2.9**	**0.48**
Dichlorodifluoromethane	**0.48**	**0.080**	**2.4**	**0.40**
1,1-Dichloroethane	ND	0.080	ND	0.32
1,2-Dichloroethane	ND	0.080	ND	0.32
1,1-Dichloroethene	ND	0.080	ND	0.32
cis-1,2-Dichloroethene	ND	0.080	ND	0.32
1,2-Dichloropropane	ND	0.080	ND	0.37
cis-1,3-Dichloropropene	ND	0.080	ND	0.36

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
Butylcyclohexane	ND	ppb(v/v)
2,3-Dimethylheptane	ND	ppb(v/v)
2,3-Dimethylpentane	ND	ppb(v/v)

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	101	70 - 130

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: SS-3-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 006 Work Order # LC9931AA Matrix.....: AIR

Date Sampled...: 05/14/2009 Date Received..: 05/16/2009
Prep Date.....: 05/21/2009 Analysis Date... 05/21/2009
Prep Batch #....: 9141459
Dilution Factor.: 1 Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.080	ND	0.36
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.080	ND	0.56
Ethylbenzene	**0.41**	**0.080**	**1.8**	**0.35**
Trichlorofluoromethane	**0.24**	**0.080**	**1.4**	**0.45**
n-Heptane	**0.26**	**0.20**	**1.1**	**0.82**
Hexachlorobutadiene	ND	0.40	ND	4.3
n-Hexane	**0.26**	**0.20**	**0.92**	**0.70**
2,2,4-Trimethylpentane	ND	0.20	ND	0.93
Isopropylbenzene	ND	0.16	ND	0.79
Methylene chloride	**2.8**	**0.20**	**9.8**	**0.69**
2-Methylnaphthalene	ND	1.0	ND	5.8
Naphthalene	ND	0.20	ND	1.0
Benzene	**0.20**	**0.080**	**0.63**	**0.26**
n-Octane	ND	0.16	ND	0.75
Pentane	ND	0.40	ND	1.2
Styrene	**0.11**	**0.080**	**0.45**	**0.34**
1,1,2,2-Tetrachloroethane	ND	0.080	ND	0.55
Tetrachloroethene	ND	0.080	ND	0.54
Toluene	**1.0**	**0.080**	**3.8**	**0.30**
1,2,4-Trichlorobenzene	ND	0.40	ND	3.0
1,1,1-Trichloroethane	ND	0.080	ND	0.44
1,1,2-Trichloroethane	ND	0.080	ND	0.44
Trichloroethene	ND	0.040	ND	0.21
1,2,4-Trimethylbenzene	**0.23**	**0.080**	**1.1**	**0.39**
1,3,5-Trimethylbenzene	ND	0.080	ND	0.39
Vinyl chloride	ND	0.080	ND	0.20
o-Xylene	**0.57**	**0.080**	**2.5**	**0.35**
1-Methylnaphthalene	ND	1.0	ND	5.8
Methyl tert-butyl ether	ND	0.40	ND	1.4
n-Decane	**0.97**	**0.40**	**5.6**	**2.3**
n-Dodecane	**16**	**0.40**	**110**	**2.8**
n-Undecane	**2.7**	**0.40**	**17**	**2.6**
1,1,2-Trichlorotrifluoroethane	**0.083**	**0.080**	**0.63**	**0.61**
Nonane	**0.46**	**0.20**	**2.4**	**1.0**
m-Xylene & p-Xylene	**1.6**	**0.080**	**6.9**	**0.35**
1,2-Dibromoethane (EDB)	ND	0.080	ND	0.61
n-Butane	~~71~~ 320	~~0.16~~ 4.0	~~170~~ 770 ED	~~0.38~~ 9.5
Bromomethane	ND	0.080	ND	0.31
Indene	ND	0.16	ND	0.76
Thiophene	ND	0.080	ND	0.28

ARCADIS U.S., Inc.

Client Sample ID: SS-3-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 006 Work Order # LC9931AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Carbon tetrachloride	**0.092**	**0.080**	**0.58**	**0.50**
Chlorobenzene	ND	0.080	ND	0.37
1,2,3-Trimethylbenzene	**0.17**	**0.080**	**0.84 J**	**0.39**
Chloroethane	ND	0.080	ND	0.21
Chloroform	ND	0.080	ND	0.39
Chloromethane	**0.43**	**0.20**	**0.90**	**0.41**
2-Methylbutane	**0.96**	**0.20**	**2.8**	**0.59**
Indane	ND	0.080	ND	0.39
1,2-Dichlorobenzene	ND	0.080	ND	0.48
1,3-Dichlorobenzene	ND	0.080	ND	0.48
1,4-Dichlorobenzene	**0.10**	**0.080**	**0.60**	**0.48**
Dichlorodifluoromethane	**0.44**	**0.080**	**2.2**	**0.40**
1,1-Dichloroethane	ND	0.080	ND	0.32
1,2-Dichloroethane	ND	0.080	ND	0.32
1,1-Dichloroethene	ND	0.080	ND	0.32
cis-1,2-Dichloroethene	ND	0.080	ND	0.32
1,2-Dichloropropane	ND	0.080	ND	0.37
cis-1,3-Dichloropropene	ND	0.080	ND	0.36

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
Butylcyclohexane	ND	ppb(v/v)
2,3-Dimethylheptane	ND	ppb(v/v)
2,3-Dimethylpentane	ND	ppb(v/v)

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	103	70 - 130

Qualifiers

E Estimated result. Result concentration exceeds the calibration range.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: SS-3-09

GC/MS Volatiles

Lot-Sample #	H9E190105 - 006	**Work Order #**	LC9932AA	**Matrix.....:**	AIR
Date Sampled...:	05/14/2009	**Date Received..:**	05/16/2009		
Prep Date.....:	05/22/2009	**Analysis Date...**	05/23/2009		
Prep Batch #.....:	9143043				
Dilution Factor.:	25	**Method.....:**	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
n-Butane	**320**	**4.0**	**770**	**D**	**9.5**

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	107	70 - 130

Qualifiers

D Result was obtained from the analysis of a dilution.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: IA-3-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 007 Work Order # LC9941AA Matrix.....: AIR

Date Sampled...: 05/14/2009 Date Received..: 05/16/2009
Prep Date.....: 05/21/2009 Analysis Date... 05/21/2009
Prep Batch #....: 9141459
Dilution Factor.: 1 Method.....: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.080	ND	0.36
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.080	ND	0.56
Ethylbenzene	**0.18**	**0.080**	**0.76**	**0.35**
Trichlorofluoromethane	**0.25**	**0.080**	**1.4**	**0.45**
n-Heptane	ND	0.20	ND	0.82
Hexachlorobutadiene	ND	0.40	ND	4.3
n-Hexane	ND	0.20	ND	0.70
2,2,4-Trimethylpentane	ND	0.20	ND	0.93
Isopropylbenzene	ND	0.16	ND	0.79
Methylene chloride	**2.3**	**0.20**	**8.0**	**0.69**
2-Methylnaphthalene	ND	1.0	ND	5.8
Naphthalene	ND	0.20	ND	1.0
Benzene	**0.18**	**0.080**	**0.58**	**0.26**
n-Octane	ND	0.16	ND	0.75
Pentane	ND	0.40	ND	1.2
Styrene	**0.11**	**0.080**	**0.45**	**0.34**
1,1,2,2-Tetrachloroethane	ND	0.080	ND	0.55
Tetrachloroethene	ND	0.080	ND	0.54
Toluene	**0.72**	**0.080**	**2.7**	**0.30**
1,2,4-Trichlorobenzene	ND	0.40	ND	3.0
1,1,1-Trichloroethane	ND	0.080	ND	0.44
1,1,2-Trichloroethane	ND	0.080	ND	0.44
Trichloroethene	ND	0.040	ND	0.21
1,2,4-Trimethylbenzene	**0.16**	**0.080**	**0.76**	**0.39**
1,3,5-Trimethylbenzene	ND	0.080	ND	0.39
Vinyl chloride	ND	0.080	ND	0.20
o-Xylene	**0.20**	**0.080**	**0.87**	**0.35**
1-Methylnaphthalene	ND	1.0	ND	5.8
Methyl tert-butyl ether	ND	0.40	ND	1.4
n-Decane	**0.69**	**0.40**	**4.0**	**2.3**
n-Dodecane	**9.2**	**0.40**	**64**	**2.8**
n-Undecane	**1.7**	**0.40**	**11**	**2.6**
1,1,2-Trichlorotrifluoroethane	**0.081**	**0.080**	**0.62**	**0.61**
Nonane	**0.35**	**0.20**	**1.8**	**1.0**
m-Xylene & p-Xylene	**0.57**	**0.080**	**2.5**	**0.35**
1,2-Dibromoethane (EDB)	ND	0.080	ND	0.61
n-Butane	~~53~~ 140	~~0.16~~ 1.6	~~120~~ 340 ND	~~0.38~~ 3.8
Bromomethane	ND	0.080	ND	0.31
Indene	ND	0.16	ND	0.76
Thiophene	ND	0.080	ND	0.28

ARCADIS U.S., Inc.

Client Sample ID: IA-3-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 007 Work Order # LC9941AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Carbon tetrachloride	**0.096**	**0.080**	**0.60**	**0.50**
Chlorobenzene	ND	0.080	ND	0.37
1,2,3-Trimethylbenzene	**0.12**	**0.080**	**0.60** J	**0.39**
Chloroethane	ND	0.080	ND	0.21
Chloroform	ND	0.080	ND	0.39
Chloromethane	**0.53**	**0.20**	**1.1**	**0.41**
2-Methylbutane	**0.60**	**0.20**	**1.8**	**0.59**
Indane	ND	0.080	ND	0.39
1,2-Dichlorobenzene	ND	0.080	ND	0.48
1,3-Dichlorobenzene	ND	0.080	ND	0.48
1,4-Dichlorobenzene	**0.081**	**0.080**	**0.49**	**0.48**
Dichlorodifluoromethane	**0.45**	**0.080**	**2.2**	**0.40**
1,1-Dichloroethane	ND	0.080	ND	0.32
1,2-Dichloroethane	ND	0.080	ND	0.32
1,1-Dichloroethene	ND	0.080	ND	0.32
cis-1,2-Dichloroethene	ND	0.080	ND	0.32
1,2-Dichloropropane	ND	0.080	ND	0.37
cis-1,3-Dichloropropene	ND	0.080	ND	0.36

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
Butylcyclohexane	ND	ppb(v/v)
2,3-Dimethylheptane	ND	ppb(v/v)
2,3-Dimethylpentane	ND	ppb(v/v)

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	100	70 - 130

Qualifiers

E Estimated result. Result concentration exceeds the calibration range.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: 1A-3-09

GC/MS Volatiles

Lot-Sample #	H9E190105 - 007	**Work Order #**	LC9942AA	**Matrix.....:**	AIR
Date Sampled....:	05/14/2009	**Date Received..:**	05/16/2009		
Prep Date.....:	05/22/2009	**Analysis Date...**	05/22/2009		
Prep Batch #.....:	9143043				
Dilution Factor.:	10	**Method.....:**	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
n-Butane	140	1.6	340	D	3.8

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	103	70 - 130

Qualifiers

D Result was obtained from the analysis of a dilution.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: AA-1-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 008 **Work Order #** LC9951AA **Matrix.....:** AIR

Date Sampled...: 05/14/2009 **Date Received..:** 05/16/2009
Prep Date.....: 05/22/2009 **Analysis Date...** 05/22/2009
Prep Batch #....: 9143081
Dilution Factor.: 1 **Method.....:** TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.080	ND UJ	0.36
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.080	ND	0.56
Ethylbenzene	**0.11**	**0.080**	**0.47** J	**0.35**
Trichlorofluoromethane	**0.29**	**0.080**	**1.6**	**0.45**
n-Heptane	ND	0.20	ND UJ	0.82
Hexachlorobutadiene	ND	0.40	ND	4.3
n-Hexane	ND	0.20	ND	0.70
2,2,4-Trimethylpentane	ND	0.20	ND	0.93
Isopropylbenzene	ND	0.16	ND	0.79
Methylene chloride	**1.0**	**0.20**	**3.5** UJ	**0.69**
2-Methylnaphthalene	ND	1.0	ND UJ	5.8
Naphthalene	ND	0.20	ND	1.0
Benzene	**0.20**	**0.080**	**0.65** J	**0.26**
n-Octane	ND	0.16	ND UJ	0.75
Pentane	ND	0.40	ND	1.2
Styrene	ND	0.080	ND	0.34
1,1,2,2-Tetrachloroethane	ND	0.080	ND	0.55
Tetrachloroethene	**0.43**	**0.080**	**2.9** J	**0.54**
Toluene	**0.78**	**0.080**	**2.9**	**0.30**
1,2,4-Trichlorobenzene	ND	0.40	ND UJ	3.0
1,1,1-Trichloroethane	ND	0.080	ND	0.44
1,1,2-Trichloroethane	ND	0.080	ND	0.44
Trichloroethene	**0.20**	**0.040**	**1.1** J	**0.21**
1,2,4-Trimethylbenzene	**0.092**	**0.080**	**0.45** J	**0.39**
1,3,5-Trimethylbenzene	ND	0.080	ND UJ	0.39
Vinyl chloride	ND	0.080	ND	0.20
o-Xylene	**0.12**	**0.080**	**0.53** J	**0.35**
1-Methylnaphthalene	ND	1.0	ND UJ	5.8
Methyl tert-butyl ether	ND	0.40	ND	1.4
n-Decane	ND	0.40	ND UJ	2.3
n-Dodecane	ND	0.40	ND	2.8
n-Undecane	ND	0.40	ND	2.6
1,1,2-Trichlorotrifluoroethane	**0.087**	**0.080**	**0.67** J	**0.61**
Nonane	ND	0.20	ND UJ	1.0
m-Xylene & p-Xylene	**0.36**	**0.080**	**1.5** J	**0.35**
1,2-Dibromoethane (EDB)	ND	0.080	ND UJ	0.61
n-Butane	**0.28**	**0.16**	**0.67** J	**0.38**
Bromomethane	ND	0.080	ND UJ	0.31
Indene	ND	0.16	ND	0.76

ARCADIS U.S., Inc.

Client Sample ID: AA-1-09

GC/MS Volatiles

Lot-Sample # H9E190105 - 008 Work Order # LC9951AA Matrix.....: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Thiophene	ND	0.080	ND UJ	0.28
Carbon tetrachloride	**0.11**	**0.080**	**0.67** J	**0.50**
Chlorobenzene	ND	0.080	ND UJ	0.37
1,2,3-Trimethylbenzene	ND	0.080	ND	0.39
Chloroethane	ND	0.080	ND	0.21
Chloroform	ND	0.080	ND	0.39
Chloromethane	**0.55**	**0.20**	**1.1** J	**0.41**
2-Methylbutane	**0.33**	**0.20**	**0.96** J	**0.59**
Indane	ND	0.080	ND UJ	0.39
1,2-Dichlorobenzene	ND	0.080	ND	0.48
1,3-Dichlorobenzene	ND	0.080	ND	0.48
1,4-Dichlorobenzene	ND	0.080	ND	0.48
Dichlorodifluoromethane	**0.49**	**0.080**	**2.4** J	**0.40**
1,1-Dichloroethane	ND	0.080	ND UJ	0.32
1,2-Dichloroethane	ND	0.080	ND	0.32
1,1-Dichloroethene	ND	0.080	ND	0.32
cis-1,2-Dichloroethene	ND	0.080	ND	0.32
1,2-Dichloropropane	ND	0.080	ND	0.37
cis-1,3-Dichloropropene	ND	0.080	ND	0.36

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
Butylcyclohexane	ND	ppb(v/v)
2,3-Dimethylheptane	ND	ppb(v/v)
2,3-Dimethylpentane	ND	ppb(v/v)

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	97	70 - 130

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)