ARCADIS
Infrastructure, environment, buildings

ARCADIS of New York, Inc.
Two Huntington Quadrangle
Suite 1S10
Melville
New York 11747
Tel 631.249.7600
Fax 631.249.7610
www.arcadis-us.com

ENVIRONMENT

Ms. Lisa A. Gorton
Environmental Engineer
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C
625 Broadway
Albany, NY 12233-7014

Subject:
Site Characterization Data Summary Addendum
Former Dangman Park Manufactured Gas Plant Site
Brooklyn, New York
Site No. 224047
Index # A2-0552-0606

Date:
May 5, 2010

Contact:
Steven M. Feldman

Phone:
(631) 391-5244

Email:
Steven.Feldman@arcadis-us.com

Our ref:
B0036704.0000.00003

Dear Ms. Gorton:

On behalf of Brooklyn Union Gas d/b/a National Grid NY (National Grid), ARCADIS has prepared this Site Characterization (SC) Data Summary Addendum (SC Data Summary Addendum) for the former Dangman Park Manufactured Gas Plant (MGP) site (Site) located at 486 Neptune Avenue, Brooklyn, New York. As discussed in the April 8, 2010 Site Characterization Data Summary (SC Data Summary), a SC Data Summary Addendum was to be submitted to include a summary of the vapor intrusion (VI) investigation data (sub-slab soil vapor, ambient air, and indoor air) that were collected in February and March 2010.

The VI investigation activities outlined in the SC Work Plan Addendum – Vapor Intrusion Investigation, dated February 22, 2010, provided data to address the following objectives:

- Determine if MGP-related and/or non-MGP-related chemical constituents are present in sub-slab soil vapor and/or indoor air at the Site.
- Assess the potential for soil vapor intrusion.
- Evaluate, to the extent practicable, whether there are complete exposure pathways of soil vapor to indoor air (i.e., determine if vapors from MGP-related constituents are migrating through various pathways into on-site buildings at concentrations that may result in an unacceptable human health risk).

VI Investigation Field Activities

This section of the SC Data Summary Addendum describes the field activities that were conducted during the VI Investigation. The VI investigation included the installation of temporary sub-slab soil vapor points and the characterization of sub-slab soil vapor quality and indoor air quality.

Indoor Air Quality and Ambient Air Quality Sampling

The VI investigation consisted of collecting indoor air quality samples (IA-1 through IA-7) in seven (7) tenant spaces in the shopping center that overlie the former MGP structures and one (1) ambient air quality sample (along the sidewalk outside the shopping center). The indoor air quality samples and ambient air quality sample were collected on February 22, 2010 in accordance with the methods and procedures described in the Field Sampling Plan (FSP). The approximate sample locations and the individual tenant spaces cross referenced as Stores 1 through 9 are shown on Figure 1. Indoor air quality samples were collected in Stores 2 through 8. Indoor Air (Canister) and Ambient Air (Canister) Sample Collection Field Forms are provided in Appendix A of this SC Data Summary Addendum.

Prior to collecting the indoor air quality samples, a partial building survey and chemical inventory was conducted to assess potential indoor air sources that may contain the same compounds as MGP-related volatile constituents. Based on an initial building survey/inspection in the tenant spaces, the chemical inventory was primarily focused in the dry cleaners identified as Store 6, where chemical usage was apparent. Six (6) Material Safety Data Sheets (MSDSs) were obtained from Store 6. Store 6 currently uses ExxonMobil DF-2000 Fluid as a dry cleaning fluid. The DF-2000 Fluid MSDS indicates that the product is an aliphatic hydrocarbon. The MSDSs indicate that the other chemicals are used as stain removal agents. The Picrin stain removal agent contains trichloroethene (TCE). The HYDROCLENE P.O.G. stain removal agent contains hydrocarbons with the same Chemical Abstracts Service (CAS) Registry Number (64742-48-9) as the DF-2000 Fluid; CAS Registry Number 64742-48-9 corresponds to hydrotreated heavy naphtha (petroleum). The Pyratex stain removal agent contains <15% aliphatic ketone. 4-methyl-2-pentanone (also known as methyl isobutyl ketone [MIBK]) is an aliphatic ketone and was detected above its typical background indoor air concentration of 6.0 micrograms per cubic meter ($\mu g/m^3$) in the Store 6 indoor air quality sample (IA-5 [19.5 $\mu g/m^3$]). The MSDSs are provided in Appendix B of this SC Data Summary Addendum.

The indoor air quality and ambient air quality samples were submitted to the laboratory for the analysis of volatile organic compounds (VOCs) using EPA Method

TO-15. Table 1 summarizes the indoor air quality and ambient air quality sample analytical data. Samples were submitted to Alpha Analytical, Inc., a New York State Department of Health (NYSDOH) accredited laboratory certified for the analyses. The analytical methods, sample handling, and laboratory protocols that are outlined in the Quality Assurance Project Plan (QAPP) and QAPP Addendum were followed. Analytical results for the indoor air quality and ambient air quality samples were reported using NYSDEC Analytical Services Protocol (ASP) Category B data deliverables.

Sub-Slab Soil Vapor Sampling

The VI investigation consisted of advancing seven (7) temporary sub-slab soil vapor points (SSSV-1 through SSSV-7) through the floor slab in three (3) tenant spaces (Store 3, Store 6, and Store 8) in the shopping center that overlie the former MGP structures. The temporary sub-slab soil vapor points were drilled by ZEBRA Environmental Corp. (ZEBRA) between February 24 and March 1, 2010 under the oversight of ARCADIS in accordance with the methods and procedures described in the FSP. The approximate locations of the temporary sub-slab soil vapor points are shown on Figure 1. Sub-Slab Vapor (Canister) Sample Collection Field Forms are provided in Appendix A of this SC Data Summary Addendum.

The sub-slab soil vapor samples were submitted to the laboratory for the analysis of VOCs using EPA Method TO-15. Table 2 summarizes the sub-slab soil vapor sample analytical data. Samples were submitted to Alpha Analytical, Inc., a NYSDOH accredited laboratory certified for the analyses. The analytical methods, sample handling, and laboratory protocols that are outlined in the QAPP and QAPP Addendum were followed. Analytical results for the sub-slab soil vapor samples were reported using NYSDEC ASP Category B data deliverables.

Air monitoring was conducted inside the tenant spaces during implementation of the sub-slab soil vapor sampling activities. The air was monitored using a photoionization detector (PID), a real-time aerosol monitor, and a multi-gas meter. The air monitoring data indicate that no readings were recorded above background levels.

Nature of Constituents in Media

This section of the SC Data Summary Addendum discusses the analytical data for samples collected from indoor air and sub-slab soil vapor at the Site. The nature of the constituents is described in the following sections.

Summary of Data Usability

This section of the SC Data Summary Addendum provides a summary of VI Investigation data quality based on the data validation that was performed and usability toward meeting data quality objectives (DQOs) for the Site. Data Usability Summary Reports (DUSRs) are provided in Appendix C of this SC Data Summary Addendum.

ARCADIS prepared Data Validation Checklists for the sample data that was collected during the VI Investigation. The analytical data underwent a review process following NYSDEC DUSR guidelines. The analytical method (TO-15) utilized was an acceptable EPA method, as specified in the NYSDEC-approved SC Work Plan Addendum. Data validation was conducted by ARCADIS. NYSDEC ASP Category B deliverables for indoor air quality and sub-slab soil vapor analytical samples associated with the VI Investigation are provided in Appendix D of this SC Data Summary Addendum.

Three sample delivery groups (SDGs) were associated with the VI Investigation data. The data were determined to be acceptable and usable with the exception of the SSSV-4 sub-slab soil vapor sample. The final vacuum (i.e., receipt at lab vacuum) of the SSSV-4 SUMMA® canister was less than 1 inch of mercury (Hg). Based on this receipt vacuum reading, compounds that were not detected above the laboratory reported detection limit in the SSSV-4 sample were qualified as unusable ("R" qualifier [result rejected]). Compounds that were detected above the laboratory reported detection limit in the SSSV-4 sample were qualified as estimated ("J" qualifier).

It is the opinion of the data reviewer that the analytical data generated from samples collected and analyzed as part of the VI Investigation underwent a thorough data review process in accordance with QAPP requirements. Based on the data validation, the DQOs were met.

Nature of Constituents in Indoor Air

This section of the SC Data Summary Addendum provides an evaluation of the nature of constituents in indoor air. The laboratory analytical results of indoor air quality samples are summarized in Table 1 and provided in Appendix D of this SC Data Summary Addendum.

The analytical results indicate that potential MGP-related constituents detected in indoor air were below typical background indoor air concentrations for all indoor air quality samples. A number of non-MGP-related constituents detected in indoor air

(2-butanone [methyl ethyl ketone], dichlorodifluoromethane (Freon 12), 4-methyl-2-pentanone [MIBK], and PCE) were above typical background indoor air concentrations in a number of indoor air quality samples (IA-1, IA-3, IA-5, and IA-6). PCE was detected above its typical background indoor air concentration of 15.9 µg/m^3 in the IA-5 (16.4 µg/m^3) (Store 6) and IA-6 (18.0 µg/m^3) (Store 7) indoor air quality samples.

A number of potential MGP-related constituents (e.g., benzene) and non-MGP-related constituents (e.g., PCE) were detected in the ambient air sample (AA-1) that was collected along the sidewalk outside the shopping center.

Nature of Constituents in Sub-Slab Soil Vapor

This section of the SC Data Summary Addendum provides an evaluation of the nature of constituents in sub-slab soil vapor. The laboratory analytical results of sub-slab soil vapor samples are summarized in Table 2 and provided in Appendix D of this SC Data Summary Addendum.

The analytical results indicate that potential MGP-related constituents were detected in the majority of the sub-slab soil vapor samples. MGP site indicator compounds such as indane and indene were detected in the SSSV-1 and SSSV-2 sub-slab soil vapor samples (beneath Store 3). However, these compounds, along with thiophene, were not detected in any of the indoor air quality samples.

Non-MGP-related constituents were also detected in the sub-slab soil vapor samples. PCE and other chlorinated VOCs (TCE, cis-1,2-dichloroethene, and vinyl chloride) were detected at elevated concentrations in the SSSV-6 sample (beneath Store 8) (most notably PCE at a concentration of 606,000 µg/m^3).

Table 3 provides the analytical results for a subset of the sub-slab soil vapor and indoor air quality samples that were generally co-located within tenant spaces. The intent of this data presentation is to facilitate a comparison of chemical constituents that were detected in both sub-slab soil vapor and indoor air.

Conclusions

Based on the data presented in this SC Data Summary Addendum, potential MGP-related constituent vapors are not migrating into the shopping center building at concentrations that may result in an unacceptable human health risk. This is evidenced by the fact that potential MGP-related constituents detected in indoor air were below typical background indoor air concentrations for all indoor air quality

samples. Furthermore, the potential MGP-related constituents detected in indoor air may be attributable to other sources (i.e., background sources).

Please contact Andrew Prophete of National Grid at (718) 963-5412 if you have any questions.

Sincerely,

ARCADIS of New York, Inc.

Christopher Keen
Senior Scientist

Steven M. Feldman
Principal Scientist

Copies:
Albert DeMarco - NYSDOH
Andrew Prophete - National Grid
Donald Campbell - National Grid
Tracey Bell - National Grid
Linda Sullivan, Esq. - National Grid

Table 1. Concentrations of Volatile Organic Compounds in Indoor Air Quality Samples,
Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Typical Background Indoor Air Concentrations [1] (ug/m^3)	Sample ID:	IA-1	IA-2	DUP022210	IA-3
		Sample Date:	2/22/2010	2/22/2010	2/22/2010	2/22/2010
		Sample Location:	Radio Shack	Silent Thunder Martial Arts	IA-2 Duplicate	West 5th Medical Supply
		Sample Type:	Indoor Air	Indoor Air	Indoor Air	Indoor Air
Potential MGP-Related Constituents or Other Sources						
1,2,3-Trimethylbenzene	-		<0.983	<0.983	<0.983 J	<0.983
1,2,4-Trimethylbenzene	9.5		<0.982	<0.982	<0.982 J	<0.982
1,2,4,5-Tetramethylbenzene	-		<13.7	<13.7	<13.7 J	<13.7
1,3,5-Trimethylbenzene	3.7		<0.982	<0.982	<0.982 J	<0.982
2,2,4-Trimethylpentane	-		**0.971**	<0.934	<0.934 J	**1.22**
o-Chlorotoluene	-		<1.03	<1.03	<1.03 J	<1.03
4-Ethyltoluene	3.6		<0.982	<0.982	<0.982 J	<0.982
Benzene	9.4		**2.11**	**2.04**	**1.85 J**	**1.90**
Carbon disulfide	4.2		<0.622	<0.622	<0.622 J	<0.622
Cyclohexane	-		<0.688	<0.688	<0.688 J	**0.767**
Ethylbenzene	5.7		**1.14**	**0.928**	**0.876 J**	<0.868
Heptane	-		**0.942**	**1.03**	**1.02 J**	**5.11**
n-Hexane	10.2		**1.76**	**1.87**	**1.80 J**	**8.91**
p/m-Xylene	22.2		**1.66**	**2.13**	**1.94 J**	**2.50**
o-Xylene	7.9		<0.868	**0.872**	**0.868 J**	**0.946**
Naphthalene	5.1		<1.05	<1.05	<1.05 J	<1.05
Styrene	1.9		<0.851	<0.851	<0.851 J	<0.851
Thiophene	-		<0.688	<0.688	<0.688 J	<0.688
Toluene	43.0		**8.27**	**9.51**	**9.41 J**	**35.7**
Indane	-		<0.967	<0.967	<0.967 J	<0.967
Indene	-		<0.950	<0.950	<0.950 J	<0.950
1-Methylnaphthalene	-		<14.5	<14.5	<14.5 J	<14.5
2-Methylnaphthalene	-		<14.5	<14.5	<14.5 J	<14.5
Non-MGP-Related Constituents						
1,1,1-Trichloroethane	20.6		<1.09	<1.09	<1.09 J	<1.09
1,1,2,2-Tetrachloroethane	-		<1.37	<1.37	<1.37 J	<1.37
1,1,2-Trichloroethane	<1.5		<1.09	<1.09	<1.09 J	<1.09
1,1-Dichloroethane	<0.7		<0.809	<0.809	<0.809 J	<0.809
1,1-Dichloroethene	<1.4		<0.792	<0.792	<0.792 J	<0.792
1,2,4-Trichlorobenzene	<6.8		<1.48	<1.48	<1.48 J	<1.48
1,2-Dibromoethane	<1.5		<1.54	<1.54	<1.54 J	<1.54
1,2-Dichlorobenzene	<1.2		<1.20	<1.20	<1.20 J	<1.20
1,2-Dichloroethane	<0.9		<0.809	<0.809	<0.809 J	<0.809
1,2-Dichloropropane	<1.6		<0.924	<0.924	<0.924 J	<0.924
1,3-Butadiene	<3.0		<0.442	<0.442	<0.442 J	<0.442
1,3-Dichlorobenzene	<2.4		<1.20	<1.20	<1.20 J	<1.20
1,4-Dichlorobenzene	5.5		<1.20	<1.20	<1.20 J	<1.20
1,4-Dioxane	-		<0.720	<0.720	<0.720 J	<0.720
2-Butanone	12.0		**1.55**	**4.84**	**4.19 J**	**21.9**
2-Hexanone	-		<0.819	<0.819	<0.819 J	<0.819
3-Chloropropene	-		<0.626	<0.626	<0.626 J	<0.626
Acetone	98.9		<2.37	**22.9**	**18.6 J**	**28.6**
Bromodichloromethane	-		<1.34	<1.34	<1.34 J	<1.34
Bromoform	-		<2.06	<2.06	<2.06 J	<2.06
Bromomethane	<1.7		<0.776	<0.776	<0.776 J	<0.776
Carbon tetrachloride	<1.3		<1.26	<1.26	<1.26 J	<1.26
Chlorobenzene	<0.9		<0.920	<0.920	<0.920 J	<0.920
Chloroethane	<1.1		<0.527	<0.527	<0.527 J	<0.527
Chloroform	1.1		<0.976	<0.976	<0.976 J	<0.976
Chloromethane	3.7		**1.40**	**1.39**	**1.16 J**	**1.55**
cis-1,2-Dichloroethene	<1.9		<0.792	<0.792	<0.792 J	<0.792
cis-1,3-Dichloropropene	<2.3		<0.907	<0.907	<0.907 J	<0.907
Dibromochloromethane	-		<1.70	<1.70	<1.70 J	<1.70
Dichlorodifluoromethane	16.5		**25.6**	**3.08**	**3.01 J**	**2.92**
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.5		<1.53	<1.53	<1.53 J	<1.53
1,2-Dichloro-1,1,2,2-tetrafluoroethane	<6.8		<1.40	<1.40	<1.40 J	<1.40
Hexachlorobutadiene	<6.8		<2.13	<2.13	<2.13 J	<2.13
iso-Propyl Alcohol	250.0		**9.42 J**	**15.6 J**	**14.0 J**	**23.6 J**
Methylene chloride	10.0		<1.74	<1.74	<1.74 J	<1.74
4-Methyl-2-pentanone	6.0		<0.819	**1.07**	**0.904 J**	**1.26**

See footnotes on next page.

Table 1. Concentrations of Volatile Organic Compounds in Indoor Air Quality Samples,
Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Typical Background Indoor Air Concentrations [1] (ug/m^3)	Sample ID:	IA-1	IA-2	DUP022210	IA-3
		Sample Date:	2/22/2010	2/22/2010	2/22/2010	2/22/2010
		Sample Location:	Radio Shack	Silent Thunder Martial Arts	IA-2 Duplicate	West 5th Medical Supply
		Sample Type:	Indoor Air	Indoor Air	Indoor Air	Indoor Air
Non-MGP-Related Constituents (Continued)						
Methyl tert butyl ether	11.5		<0.720	<0.720	<0.720 J	<0.720
tert-Butyl Alcohol	-		<0.606	**0.688**	**0.715 J**	<0.606
Tetrachloroethene	15.9		**2.22**	**2.08**	**2.02 J**	**1.36**
trans-1,2-Dichloroethene	-		<0.792	<0.792	<0.792 J	<0.792
trans-1,3-Dichloropropene	<1.3		<0.907	<0.907	<0.907 J	<0.907
Trichloroethene	4.2		<1.07	<1.07	<1.07 J	<1.07
Trichlorofluoromethane	18.1		**9.85**	**1.68**	**1.52 J**	**1.47**
Vinyl bromide	-		<0.874	<0.874	<0.874 J	<0.874
Vinyl chloride	<1.9		<0.511	<0.511	<0.511 J	<0.511

1	Typical non-residential background indoor air concentrations are equal to the 90th percentile values observed by the USEPA in a study from 1994 through 1996, which are the values recommended for comparison in the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (NYSDOH, October 2006), Table C2.
ug/m^3	Micrograms per cubic meter.
-	Not available.
J	Estimated value.
Bold	Indicates detection above laboratory Reported Detection Limit.
	Compound concentration exceeds background indoor air concentration.

Table 1. Concentrations of Volatile Organic Compounds in Indoor Air Quality Samples, Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Typical Background Indoor Air Concentrations [1] (ug/m^3)	Sample ID: / Sample Date: / Sample Location: / Sample Type:	IA-4 2/22/2010 Eastern Chinese Food Indoor Air	IA-5 2/22/2010 Kurt Cleaners Indoor Air	IA-6 2/22/2010 Capital One Bank Indoor Air	IA-7 2/22/2010 CVS Pharmacy Indoor Air
Potential MGP-Related Constituents or Other Sources						
1,2,3-Trimethylbenzene	-		<0.983	**1.42**	<0.983	<0.983
1,2,4-Trimethylbenzene	9.5		**1.16**	**1.86**	**1.14**	<0.982
1,2,4,5-Tetramethylbenzene	-		<13.7	<13.7	<13.7	<13.7
1,3,5-Trimethylbenzene	3.7		<0.982	<0.982	<0.982	<0.982
2,2,4-Trimethylpentane	-		**0.990**	**1.08**	<0.934	<0.934
o-Chlorotoluene	-		<1.03	<1.03	<1.03	<1.03
4-Ethyltoluene	3.6		<0.982	**1.06**	<0.982	<0.982
Benzene	9.4		**2.93**	**1.82**	**2.03**	**1.94**
Carbon disulfide	4.2		<0.622	<0.622	<0.622	<0.622
Cyclohexane	-		<0.688	<0.688	**0.722**	<0.688
Ethylbenzene	5.7		<0.868	<0.868	<0.868	**1.17**
Heptane	-		**1.56**	**0.962**	**1.40**	**0.913**
n-Hexane	10.2		**2.47**	**3.53**	**1.60**	**0.983**
p/m-Xylene	22.2		**2.37**	**1.85**	**1.58**	**2.76**
o-Xylene	7.9		**0.950**	<0.868	<0.868	**1.14**
Naphthalene	5.1		<1.05	<1.05	<1.05	<1.05
Styrene	1.9		<0.851	<0.851	<0.851	<0.851
Thiophene	-		<0.688	<0.688	<0.688	<0.688
Toluene	43.0		**8.94**	**4.91**	**4.30**	**5.31**
Indane	-		<0.967	<0.967	<0.967	<0.967
Indene	-		<0.950	<0.950	<0.950	<0.950
1-Methylnaphthalene	-		<14.5	<14.5	<14.5	<14.5
2-Methylnaphthalene	-		<14.5	<14.5	<14.5	<14.5
Non-MGP-Related Constituents						
1,1,1-Trichloroethane	20.6		<1.09	<1.09	<1.09	<1.09
1,1,2,2-Tetrachloroethane	-		<1.37	<1.37	<1.37	<1.37
1,1,2-Trichloroethane	<1.5		<1.09	<1.09	<1.09	<1.09
1,1-Dichloroethane	<0.7		<0.809	<0.809	<0.809	<0.809
1,1-Dichloroethene	<1.4		<0.792	<0.792	<0.792	<0.792
1,2,4-Trichlorobenzene	<6.8		<1.48	<1.48	<1.48	<1.48
1,2-Dibromoethane	<1.5		<1.54	<1.54	<1.54	<1.54
1,2-Dichlorobenzene	<1.2		<1.20	<1.20	<1.20	<1.20
1,2-Dichloroethane	<0.9		<0.809	<0.809	<0.809	<0.809
1,2-Dichloropropane	<1.6		<0.924	<0.924	<0.924	<0.924
1,3-Butadiene	<3.0		**0.840**	<0.442	<0.442	<0.442
1,3-Dichlorobenzene	<2.4		<1.20	<1.20	<1.20	<1.20
1,4-Dichlorobenzene	5.5		<1.20	<1.20	<1.20	<1.20
1,4-Dioxane	-		<0.720	<0.720	<0.720	<0.720
2-Butanone	12.0		**3.98**	**4.84**	**1.56**	**1.28**
2-Hexanone	-		<0.819	<0.819	<0.819	<0.819
3-Chloropropene	-		<0.626	<0.626	<0.626	<0.626
Acetone	98.9		**26.8**	**41.1**	**24.4**	**22.3**
Bromodichloromethane	-		<1.34	<1.34	<1.34	<1.34
Bromoform	-		<2.06	<2.06	<2.06	<2.06
Bromomethane	<1.7		<0.776	<0.776	<0.776	<0.776
Carbon tetrachloride	<1.3		<1.26	<1.26	<1.26	<1.26
Chlorobenzene	<0.9		<0.920	<0.920	<0.920	<0.920
Chloroethane	<1.1		<0.527	<0.527	<0.527	<0.527
Chloroform	1.1		<0.976	<0.976	<0.976	<0.976
Chloromethane	3.7		**1.40**	**1.34**	**1.31**	**1.33**
cis-1,2-Dichloroethene	<1.9		<0.792	<0.792	<0.792	<0.792
cis-1,3-Dichloropropene	<2.3		<0.907	<0.907	<0.907	<0.907
Dibromochloromethane	-		<1.70	<1.70	<1.70	<1.70
Dichlorodifluoromethane	16.5		**4.38**	**3.01**	**3.85**	**3.86**
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.5		<1.53	<1.53	<1.53	<1.53
1,2-Dichloro-1,1,2,2-tetrafluoroethane	<6.8		<1.40	<1.40	<1.40	<1.40
Hexachlorobutadiene	<6.8		<2.13	<2.13	<2.13	<2.13
iso-Propyl Alcohol	250.0		**25.9 J**	**57.4 J**	**39.0 J**	**63.6 J**
Methylene chloride	10.0		**1.76**	<1.74	<1.74	<1.74
4-Methyl-2-pentanone	6.0		**3.93**	**19.5**	**3.32**	<0.819

See footnotes on next page.

Table 1. Concentrations of Volatile Organic Compounds in Indoor Air Quality Samples,
Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Typical Background Indoor Air Concentrations [1] (ug/m^3)	Sample ID: / Sample Date: / Sample Location: / Sample Type:	IA-4 2/22/2010 Eastern Chinese Food Indoor Air	IA-5 2/22/2010 Kurt Cleaners Indoor Air	IA-6 2/22/2010 Capital One Bank Indoor Air	IA-7 2/22/2010 CVS Pharmacy Indoor Air
Non-MGP-Related Constituents (Continued)						
Methyl tert butyl ether	11.5		<0.720	<0.720	<0.720	<0.720
tert-Butyl Alcohol	-		**0.788**	**0.624**	<0.606	<0.606
Tetrachloroethene	15.9		**6.08**	**16.4**	**18.0**	**10.4**
trans-1,2-Dichloroethene	-		<0.792	<0.792	<0.792	<0.792
trans-1,3-Dichloropropene	<1.3		<0.907	<0.907	<0.907	<0.907
Trichloroethene	4.2		<1.07	**1.43**	<1.07	<1.07
Trichlorofluoromethane	18.1		**2.09**	**1.60**	**1.89**	**1.99**
Vinyl bromide	-		<0.874	<0.874	<0.874	<0.874
Vinyl chloride	<1.9		<0.511	<0.511	<0.511	<0.511

1	Typical non-residential background indoor air concentrations are equal to the 90th percentile values observed by the USEPA in a study from 1994 through 1996, which are the values recommended for comparison in the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (NYSDOH, October 2006), Table C2.
ug/m^3	Micrograms per cubic meter.
-	Not available.
J	Estimated value.
Bold	Indicates detection above laboratory Reported Detection Limit.
	Compound concentration exceeds background indoor air concentration.

Table 1. Concentrations of Volatile Organic Compounds in Indoor Air Quality Samples,
Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Typical Background Indoor Air Concentrations [1] (ug/m^3)	Sample ID:	AA-1
		Sample Date:	2/22/2010
		Sample Location:	Parking Lot
		Sample Type:	Ambient Air
Potential MGP-Related Constituents or Other Sources			
1,2,3-Trimethylbenzene	-		<0.983
1,2,4-Trimethylbenzene	9.5		<0.982
1,2,4,5-Tetramethylbenzene	-		<13.7
1,3,5-Trimethylbenzene	3.7		<0.982
2,2,4-Trimethylpentane	-		<0.934
o-Chlorotoluene	-		<1.03
4-Ethyltoluene	3.6		<0.982
Benzene	9.4		**1.85**
Carbon disulfide	4.2		<0.622
Cyclohexane	-		<0.688
Ethylbenzene	5.7		<0.868
Heptane	-		<0.819
n-Hexane	10.2		**0.905**
p/m-Xylene	22.2		**1.61**
o-Xylene	7.9		<0.868
Naphthalene	5.1		<1.05
Styrene	1.9		<0.851
Thiophene	-		<0.688
Toluene	43.0		**3.68**
Indane	-		<0.967
Indene	-		<0.950
1-Methylnaphthalene	-		<14.5
2-Methylnaphthalene	-		<14.5
Non-MGP-Related Constituents			
1,1,1-Trichloroethane	20.6		<1.09
1,1,2,2-Tetrachloroethane	-		<1.37
1,1,2-Trichloroethane	<1.5		<1.09
1,1-Dichloroethane	<0.7		<0.809
1,1-Dichloroethene	<1.4		<0.792
1,2,4-Trichlorobenzene	<6.8		<1.48
1,2-Dibromoethane	<1.5		<1.54
1,2-Dichlorobenzene	<1.2		<1.20
1,2-Dichloroethane	<0.9		<0.809
1,2-Dichloropropane	<1.6		<0.924
1,3-Butadiene	<3.0		<0.442
1,3-Dichlorobenzene	<2.4		<1.20
1,4-Dichlorobenzene	5.5		<1.20
1,4-Dioxane	-		<0.720
2-Butanone	12.0		**0.695**
2-Hexanone	-		<0.819
3-Chloropropene	-		<0.626
Acetone	98.9		**4.48**
Bromodichloromethane	-		<1.34
Bromoform	-		<2.06
Bromomethane	<1.7		<0.776
Carbon tetrachloride	<1.3		<1.26
Chlorobenzene	<0.9		<0.920
Chloroethane	<1.1		<0.527
Chloroform	1.1		<0.976
Chloromethane	3.7		**1.18**
cis-1,2-Dichloroethene	<1.9		<0.792
cis-1,3-Dichloropropene	<2.3		<0.907
Dibromochloromethane	-		<1.70
Dichlorodifluoromethane	16.5		**2.64**
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.5		<1.53
1,2-Dichloro-1,1,2,2-tetrafluoroethane	<6.8		<1.40
Hexachlorobutadiene	<6.8		<2.13
iso-Propyl Alcohol	250.0		**1.58 J**
Methylene chloride	10.0		<1.74
4-Methyl-2-pentanone	6.0		<0.819

See footnotes on next page.

Table 1. Concentrations of Volatile Organic Compounds in Indoor Air Quality Samples,
Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Typical Background Indoor Air Concentrations [1] (ug/m^3)	Sample ID:	AA-1
		Sample Date:	2/22/2010
		Sample Location:	Parking Lot
		Sample Type:	Ambient Air
Non-MGP-Related Constituents (Continued)			
Methyl tert butyl ether	11.5		<0.720
tert-Butyl Alcohol	-		<0.606
Tetrachloroethene	15.9		**2.14**
trans-1,2-Dichloroethene	-		<0.792
trans-1,3-Dichloropropene	<1.3		<0.907
Trichloroethene	4.2		<1.07
Trichlorofluoromethane	18.1		**1.34**
Vinyl bromide	-		<0.874
Vinyl chloride	<1.9		<0.511

1	Typical non-residential background indoor air concentrations are equal to the 90th percentile values observed by the USEPA in a study from 1994 through 1996, which are the values recommended for comparison in the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (NYSDOH, October 2006), Table C2.
ug/m^3	Micrograms per cubic meter.
-	Not available.
J	Estimated value.
Bold	Indicates detection above laboratory Reported Detection Limit.
	Compound concentration exceeds background indoor air concentration.

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Table 2. Concentrations of Volatile Organic Compounds in Sub-Slab Soil Vapor Quality Samples, Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Sample ID:	SSSV-1	DUP022510	SSSV-2	SSSV-3	SSSV-4 [2]
	Sample Date:	2/25/2010	2/25/2010	2/25/2010	2/24/2010	2/24/2010
	Sample Location:	Silent Thunder Martial Arts	SSSV-1 Duplicate	Silent Thunder Martial Arts	Kurt Cleaners	Kurt Cleaners
	Sample Type:	Sub-Slab	Sub-Slab	Sub-Slab	Sub-Slab	Sub-Slab
Potential MGP-Related Constituents or Other Sources						
1,2,3-Trimethylbenzene		**2.71**	<4.92	<4.92	<4.92	R
1,2,4-Trimethylbenzene		**5.59**	<4.91	<4.91	<4.91	**5.28 J**
1,2,4,5-Tetramethylbenzene		<13.7 J	<68.6 J	<68.6 J	<68.6 J	R
1,3,5-Trimethylbenzene		**1.40 J**	<4.91 J	<4.91	<4.91	R
2,2,4-Trimethylpentane		**2.27**	<4.67	<4.67	<4.67	R
o-Chlorotoluene		<1.03	<5.17	<5.17	<5.17	R
4-Ethyltoluene		**1.51 J**	<4.91 J	<4.91	<4.91	R
Benzene		**114**	**104**	<3.19	**92.0**	**3.99 J**
Carbon disulfide		**2.95**	<3.11	**3.17**	**6.47**	R
Cyclohexane		**2.58**	<3.44	<3.44	<3.44	**8.36 J**
Ethylbenzene		**5.04**	<4.34	<4.34	<4.34	R
Heptane		**11.0**	**9.36**	**4.12**	**9.42**	**11.3 J**
n-Hexane		**19.5**	**19.1**	**7.61**	**13.3**	**14.3 J**
p/m-Xylene		**13.0 J**	**9.13 J**	<4.34	**4.75**	**8.74 J**
o-Xylene		**7.34**	**5.16**	<4.34	<4.34	R
Naphthalene		**18.3 J**	**10.7 J**	**27.0**	<5.24	R
Styrene		**4.23**	<4.26	<4.26	<4.26	R
Thiophene		<0.688	<3.44	<3.44	<3.44	R
Toluene		**60.8**	**47.1**	**7.10**	**12.3**	**8.58 J**
Indane		**5.29**	<4.83	**7.49**	<4.83	R
Indene		**11.7 J**	**6.01 J**	<4.75	<4.75	R
1-Methylnaphthalene		<14.5	<72.7	<72.7	<72.7	R
2-Methylnaphthalene		<14.5 J	<72.7 J	<72.7 J	<72.7 J	R
Non-MGP-Related Constituents						
1,1,1-Trichloroethane		<1.09	<5.45	<5.45	<5.45	R
1,1,2,2-Tetrachloroethane		<1.37	<6.86	<6.86	<6.86	R
1,1,2-Trichloroethane		<1.09	<5.45	<5.45	<5.45	R
1,1-Dichloroethane		<0.809	<4.04	<4.04	<4.04	R
1,1-Dichloroethene		<0.792	<3.96	<3.96	<3.96	R
1,2,4-Trichlorobenzene		<1.48 J	<7.42 J	<7.42 J	<7.42 J	R
1,2-Dibromoethane		<1.54	<7.68	<7.68	<7.68	R
1,2-Dichlorobenzene		<1.20	<6.01	<6.01	<6.01	R
1,2-Dichloroethane		<0.809	<4.04	<4.04	<4.04	R
1,2-Dichloropropane		<0.924	<4.62	<4.62	<4.62	R
1,3-Butadiene		**1.49**	<2.21	**2.41**	**14.0**	**4.64 J**
1,3-Dichlorobenzene		<1.20	<6.01	<6.01	<6.01	R
1,4-Dichlorobenzene		**1.27 J**	<6.01 J	<6.01	<6.01	R
1,4-Dioxane		<0.72	<3.60	<3.60	<3.60	R
2-Butanone		**30.4**	**24.7**	**14.1**	**37.7**	**18.7 J**
2-Hexanone		**3.33**	<4.10	<4.10	**8.42**	R
3-Chloropropene		<0.626	<3.13	<3.13	<3.13	R
Acetone		**111**	**93.7**	**58.7**	**152**	**53.6 J**
Bromodichloromethane		<1.34	<6.70	<6.70	<6.70	R
Bromoform		<2.06	<10.3	<10.3	<10.3	R
Bromomethane		<0.776	<3.88	<3.88	<3.88	R
Carbon tetrachloride		<1.26	<6.29	<6.29	<6.29	R
Chlorobenzene		<0.92	<4.60	<4.60	<4.60	R
Chloroethane		<0.527	<2.64	<2.64	<2.64	R
Chloroform		<0.976	<4.88	<4.88	<4.88	R
Chloromethane		**1.61**	<2.06	<2.06	**4.32**	R
cis-1,2-Dichloroethene		<0.792	<3.96	<3.96	<3.96	R
cis-1,3-Dichloropropene		<0.907	<4.53	<4.53	<4.53	R
Dibromochloromethane		<1.70	<8.51	<8.51	<8.51	R
Dichlorodifluoromethane		**2.36**	<4.94	<4.94	**7.96**	R
1,1,2-Trichloro-1,2,2-Trifluoroethane		<1.53	<7.66	<7.66	<7.66	R
1,2-Dichloro-1,1,2,2-tetrafluoroethane		<1.40	<6.98	<6.98	<6.98	R
Hexachlorobutadiene		<2.13	<10.6	<10.6	<10.6	R
iso-Propyl Alcohol		**11.5 J**	**10.5 J**	<6.14 J	**23.2 J**	**6.83 J**
Methylene chloride		<1.74	<8.68	<8.68	<8.68	R
4-Methyl-2-pentanone		**2.03**	<4.09	<4.09	**5.81**	**6.61 J**

See footnotes on next page.

Table 2. Concentrations of Volatile Organic Compounds in Sub-Slab Soil Vapor Quality Samples, Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Sample ID:	SSSV-1	DUP022510	SSSV-2	SSSV-3	SSSV-4 [2]
	Sample Date:	2/25/2010	2/25/2010	2/25/2010	2/24/2010	2/24/2010
	Sample Location:	Silent Thunder Martial Arts	SSSV-1 Duplicate	Silent Thunder Martial Arts	Kurt Cleaners	Kurt Cleaners
	Sample Type:	Sub-Slab	Sub-Slab	Sub-Slab	Sub-Slab	Sub-Slab
Non-MGP-Related Constituents (Continued)						
Methyl tert butyl ether		<0.72	<3.60	<3.60	<3.60	R
tert-Butyl Alcohol		**2.06**	<3.03	<3.03	**5.56**	R
Tetrachloroethene		**37.6**	**34.2**	**8.47**	**39.9**	**306 J**
trans-1,2-Dichloroethene		<0.792	<3.96	<3.96	<3.96	R
trans-1,3-Dichloropropene		<0.907	<4.53	<4.53	<4.53	R
Trichloroethene		<1.07	<5.37	<5.37	<5.37	R
Trichlorofluoromethane		**1.32**	<5.61	<5.61	<5.61	R
Vinyl bromide		<0.874	<4.37	<4.37	<4.37	R
Vinyl chloride		<0.511	<2.55	<2.55	<2.55	R

2	R qualifier applied only to Non-Detect compounds.
ug/m^3	Micrograms per cubic meter.
D	Compound quantitated at a secondary dilution.
J	Estimated value.
R	Result rejected.
Bold	Indicates detection above laboratory Reported Detection Limit.

Table 2. Concentrations of Volatile Organic Compounds in Sub-Slab Soil Vapor Quality Samples, Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Sample ID:	SSSV-5	SSSV-6	SSSV-7
	Sample Date:	3/1/2010	3/1/2010	3/1/2010
	Sample Location:	CVS Pharmacy	CVS Pharmacy	CVS Pharmacy
	Sample Type:	Sub-Slab	Sub-Slab	Sub-Slab
Potential MGP-Related Constituents or Other Sources				
1,2,3-Trimethylbenzene		<9.83	<224	<1.97
1,2,4-Trimethylbenzene		<9.82	<224	<1.96
1,2,4,5-Tetramethylbenzene		<137 J	<3,120 J	<27.4 J
1,3,5-Trimethylbenzene		<9.82	<224	<1.96
2,2,4-Trimethylpentane		<9.34	<212	<1.87
o-Chlorotoluene		<10.3	<236	<2.07
4-Ethyltoluene		<9.82	<224	<1.96
Benzene		**52.4**	<145	<1.28
Carbon disulfide		**9.61**	<142	<1.24
Cyclohexane		**531**	<157	<1.38
Ethylbenzene		<8.68	<198	<1.74
Heptane		**401**	<186	**1.98**
n-Hexane		**1,420**	<160	**7.04**
p/m-Xylene		<8.68	<198	<1.74
o-Xylene		<8.68	<198	<1.74
Naphthalene		**12.4**	<238	<2.10
Styrene		<8.51	<194	**42.9**
Thiophene		<6.88	<157	<1.38
Toluene		**10.6**	<171	<1.51
Indane		<9.67	<220	<1.93
Indene		<9.50	<216	<1.90
1-Methylnaphthalene		<145	<3,310	<29.1
2-Methylnaphthalene		<145 J	<3,310 J	<29.1 J
Non-MGP-Related Constituents				
1,1,1-Trichloroethane		<10.9	<248	<2.18
1,1,2,2-Tetrachloroethane		<13.7	<312	<2.74
1,1,2-Trichloroethane		<10.9	<248	<2.18
1,1-Dichloroethane		<8.09	<184	<1.62
1,1-Dichloroethene		<7.92	<180	<1.58
1,2,4-Trichlorobenzene		<14.8 J	<338 J	<2.97 J
1,2-Dibromoethane		<15.4	<350	<3.07
1,2-Dichlorobenzene		<12.0	<274	<2.40
1,2-Dichloroethane		<8.09	<184	<1.62
1,2-Dichloropropane		<9.24	<210	<1.85
1,3-Butadiene		<4.42	<101	<0.884
1,3-Dichlorobenzene		<12.0	<274	<2.40
1,4-Dichlorobenzene		<12.0	<274	<2.40
1,4-Dioxane		<7.20	<164	<1.44
2-Butanone		**73.4**	<134	**4.89**
2-Hexanone		<8.19	<186	<1.64
3-Chloropropene		<6.26	<142	<1.25
Acetone		**191**	<540	**13.4**
Bromodichloromethane		<13.4	<305	<2.68
Bromoform		<20.6	<470	<4.13
Bromomethane		<7.76	<177	<1.55
Carbon tetrachloride		<12.6	<286	<2.51
Chlorobenzene		<9.20	<209	<1.84
Chloroethane		<5.27	<120	<1.05
Chloroform		<9.76	<222	**7.80**
Chloromethane		<4.13	<94	<0.825
cis-1,2-Dichloroethene		<7.92	**1,700**	<1.58
cis-1,3-Dichloropropene		<9.07	<206	<1.81
Dibromochloromethane		<17.0	<388	**3.44**
Dichlorodifluoromethane		<9.88	<225	**2.21**
1,1,2-Trichloro-1,2,2-Trifluoroethane		<15.3	<349	<3.06
1,2-Dichloro-1,1,2,2-tetrafluoroethane		<14.0	<318	<2.79
Hexachlorobutadiene		<21.3	<485	<4.26
iso-Propyl Alcohol		<12.3 J	<280 J	<2.46 J
Methylene chloride		**21.2**	<395	<3.47
4-Methyl-2-pentanone		<8.19	<186	<1.64

See footnotes on next page.

Table 2. Concentrations of Volatile Organic Compounds in Sub-Slab Soil Vapor Quality Samples, Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Sample ID:	SSSV-5	SSSV-6	SSSV-7
	Sample Date:	3/1/2010	3/1/2010	3/1/2010
	Sample Location:	CVS Pharmacy	CVS Pharmacy	CVS Pharmacy
	Sample Type:	Sub-Slab	Sub-Slab	Sub-Slab
Non-MGP-Related Constituents (Continued)				
Methyl tert butyl ether		<7.20	<164	<1.44
tert-Butyl Alcohol		<6.06	<138	<1.21
Tetrachloroethene		<13.6	**606,000 D**	**38.4**
trans-1,2-Dichloroethene		<7.92	<180	<1.58
trans-1,3-Dichloropropene		<9.07	<206	<1.81
Trichloroethene		<10.7	**28,000**	<2.15
Trichlorofluoromethane		<11.2	<256	**2.26**
Vinyl bromide		<8.74	<199	<1.75
Vinyl chloride		<5.11	**210**	<1.02

2	R qualifier applied only to Non-Detect compounds.
ug/m^3	Micrograms per cubic meter.
D	Compound quantitated at a secondary dilution.
J	Estimated value.
R	Result rejected.
Bold	Indicates detection above laboratory Reported Detection Limit.

Table 3. Concentrations of Volatile Organic Compounds in Generally Co-Located Sub-Slab Soil Vapor Samples and Indoor Air Quality Samples, Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Typical Background Indoor Air Concentrations [1] (ug/m^3)	Sample ID: / Sample Date: / Sample Type:	Silent Thunder Martial Arts SSSV-1 2/25/2010 Sub-Slab	SSSV-2 2/25/2010 Sub-Slab	IA-2 2/22/2010 Indoor Air
Potential MGP-Related Constituents or Other Sources					
1,2,3-Trimethylbenzene	-		**2.71**	<4.92	<0.983
1,2,4-Trimethylbenzene	9.5		**5.59**	<4.91	<0.982
1,2,4,5-Tetramethylbenzene	-		<13.7 J	<68.6 J	<13.7
1,3,5-Trimethylbenzene	3.7		**1.40 J**	<4.91	<0.982
2,2,4-Trimethylpentane	-		**2.27**	<4.67	<0.934
o-Chlorotoluene	-		<1.03	<5.17	<1.03
4-Ethyltoluene	3.6		**1.51 J**	<4.91	<0.982
Benzene	9.4		**114**	<3.19	**2.04**
Carbon disulfide	4.2		**2.95**	**3.17**	<0.622
Cyclohexane	-		**2.58**	<3.44	<0.688
Ethylbenzene	5.7		**5.04**	<4.34	**0.928**
Heptane	-		**11.0**	**4.12**	**1.03**
n-Hexane	10.2		**19.5**	**7.61**	**1.87**
p/m-Xylene	22.2		**13.0 J**	<4.34	**2.13**
o-Xylene	7.9		**7.34**	<4.34	**0.872**
Naphthalene	5.1		**18.3 J**	**27.0**	<1.05
Styrene	1.9		**4.23**	<4.26	<0.851
Thiophene	-		<0.688	<3.44	<0.688
Toluene	43.0		**60.8**	**7.10**	**9.51**
Indane	-		**5.29**	**7.49**	<0.967
Indene	-		**11.7 J**	<4.75	<0.950
1-Methylnaphthalene	-		<14.5	<72.7	<14.5
2-Methylnaphthalene	-		<14.5 J	<72.7 J	<14.5
Non-MGP-Related Constituents					
1,1,1-Trichloroethane	20.6		<1.09	<5.45	<1.09
1,1,2,2-Tetrachloroethane	-		<1.37	<6.86	<1.37
1,1,2-Trichloroethane	<1.5		<1.09	<5.45	<1.09
1,1-Dichloroethane	<0.7		<0.809	<4.04	<0.809
1,1-Dichloroethene	<1.4		<0.792	<3.96	<0.792
1,2,4-Trichlorobenzene	<6.8		<1.48 J	<7.42 J	<1.48
1,2-Dibromoethane	<1.5		<1.54	<7.68	<1.54
1,2-Dichlorobenzene	<1.2		<1.20	<6.01	<1.20
1,2-Dichloroethane	<0.9		<0.809	<4.04	<0.809
1,2-Dichloropropane	<1.6		<0.924	<4.62	<0.924
1,3-Butadiene	<3.0		**1.49**	**2.41**	<0.442
1,3-Dichlorobenzene	<2.4		<1.20	<6.01	<1.20
1,4-Dichlorobenzene	5.5		**1.27 J**	<6.01	<1.20
1,4-Dioxane	-		<0.72	<3.60	<0.720
2-Butanone	12.0		**30.4**	**14.1**	**4.84**
2-Hexanone	-		**3.33**	<4.10	<0.819
3-Chloropropene	-		<0.626	<3.13	<0.626
Acetone	98.9		**111**	**58.7**	**22.9**
Bromodichloromethane	-		<1.34	<6.70	<1.34
Bromoform	-		<2.06	<10.3	<2.06
Bromomethane	<1.7		<0.776	<3.88	<0.776
Carbon tetrachloride	<1.3		<1.26	<6.29	<1.26
Chlorobenzene	<0.9		<0.92	<4.60	<0.920
Chloroethane	<1.1		<0.527	<2.64	<0.527
Chloroform	1.1		<0.976	<4.88	<0.976
Chloromethane	3.7		**1.61**	<2.06	**1.39**
cis-1,2-Dichloroethene	<1.9		<0.792	<3.96	<0.792
cis-1,3-Dichloropropene	<2.3		<0.907	<4.53	<0.907
Dibromochloromethane	-		<1.70	<8.51	<1.70
Dichlorodifluoromethane	16.5		**2.36**	<4.94	**3.08**
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.5		<1.53	<7.66	<1.53
1,2-Dichloro-1,1,2,2-tetrafluoroethane	<6.8		<1.40	<6.98	<1.40
Hexachlorobutadiene	<6.8		<2.13	<10.6	<2.13
iso-Propyl Alcohol	250.0		**11.5 J**	<6.14 J	**15.6 J**
Methylene chloride	10.0		<1.74	<8.68	<1.74

See footnotes on next page.

Table 3. Concentrations of Volatile Organic Compounds in Generally Co-Located Sub-Slab Soil Vapor Samples and Indoor Air Quality Samples, Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Typical Background Indoor Air Concentrations [1] (ug/m^3)	Sample ID:	Silent Thunder Martial Arts SSSV-1	SSSV-2	IA-2
		Sample Date:	2/25/2010	2/25/2010	2/22/2010
		Sample Type:	Sub-Slab	Sub-Slab	Indoor Air
Non-MGP-Related Constituents (Continued)					
4-Methyl-2-pentanone	6.0		**2.03**	<4.09	**1.07**
Methyl tert butyl ether	11.5		<0.72	<3.60	<0.720
tert-Butyl Alcohol	-		**2.06**	<3.03	**0.688**
Tetrachloroethene	15.9		**37.6**	**8.47**	**2.08**
trans-1,2-Dichloroethene	-		<0.792	<3.96	<0.792
trans-1,3-Dichloropropene	<1.3		<0.907	<4.53	<0.907
Trichloroethene	4.2		<1.07	<5.37	<1.07
Trichlorofluoromethane	18.1		**1.32**	<5.61	**1.68**
Vinyl bromide	-		<0.874	<4.37	<0.874
Vinyl chloride	<1.9		<0.511	<2.55	<0.511

1	Typical non-residential background indoor air concentrations are equal to the 90th percentile values observed by the USEPA in a study from 1994 through 1996, which are the values recommended for comparison in the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (NYSDOH, October 2006), Table C2.
2	R qualifier applied only to Non-Detect compounds.
ug/m^3	Micrograms per cubic meter.
D	Compound quantitated at a secondary dilution.
J	Estimated value.
R	Result rejected.
Bold	Indicates detection above laboratory Reported Detection Limit.
	Compound concentration exceeds background indoor air concentration.

Table 3. Concentrations of Volatile Organic Compounds in Generally Co-Located Sub-Slab Soil Vapor Samples and Indoor Air Quality Samples, Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Typical Background Indoor Air Concentrations [1] (ug/m^3)	Sample ID:	Kurt Cleaners SSSV-3	Kurt Cleaners SSSV-4 [2]	Kurt Cleaners IA-5
		Sample Date:	2/24/2010	2/24/2010	2/22/2010
		Sample Type:	Sub-Slab	Sub-Slab	Indoor Air
Potential MGP-Related Constituents or Other Sources					
1,2,3-Trimethylbenzene	-		<4.92	R	**1.42**
1,2,4-Trimethylbenzene	9.5		<4.91	**5.28 J**	**1.86**
1,2,4,5-Tetramethylbenzene	-		<68.6 J	R	<13.7
1,3,5-Trimethylbenzene	3.7		<4.91	R	<0.982
2,2,4-Trimethylpentane	-		<4.67	R	**1.08**
o-Chlorotoluene	-		<5.17	R	<1.03
4-Ethyltoluene	3.6		<4.91	R	**1.06**
Benzene	9.4		**92.0**	**3.99 J**	**1.82**
Carbon disulfide	4.2		**6.47**	R	<0.622
Cyclohexane	-		<3.44	**8.36 J**	<0.688
Ethylbenzene	5.7		<4.34	R	<0.868
Heptane	-		**9.42**	**11.3 J**	**0.962**
n-Hexane	10.2		**13.3**	**14.3 J**	**3.53**
p/m-Xylene	22.2		**4.75**	**8.74 J**	**1.85**
o-Xylene	7.9		<4.34	R	<0.868
Naphthalene	5.1		<5.24	R	<1.05
Styrene	1.9		<4.26	R	<0.851
Thiophene	-		<3.44	R	<0.688
Toluene	43.0		**12.3**	**8.58 J**	**4.91**
Indane	-		<4.83	R	<0.967
Indene	-		<4.75	R	<0.950
1-Methylnaphthalene	-		<72.7	R	<14.5
2-Methylnaphthalene	-		<72.7 J	R	<14.5
Non-MGP-Related Constituents					
1,1,1-Trichloroethane	20.6		<5.45	R	<1.09
1,1,2,2-Tetrachloroethane	-		<6.86	R	<1.37
1,1,2-Trichloroethane	<1.5		<5.45	R	<1.09
1,1-Dichloroethane	<0.7		<4.04	R	<0.809
1,1-Dichloroethene	<1.4		<3.96	R	<0.792
1,2,4-Trichlorobenzene	<6.8		<7.42 J	R	<1.48
1,2-Dibromoethane	<1.5		<7.68	R	<1.54
1,2-Dichlorobenzene	<1.2		<6.01	R	<1.20
1,2-Dichloroethane	<0.9		<4.04	R	<0.809
1,2-Dichloropropane	<1.6		<4.62	R	<0.924
1,3-Butadiene	<3.0		**14.0**	**4.64 J**	<0.442
1,3-Dichlorobenzene	<2.4		<6.01	R	<1.20
1,4-Dichlorobenzene	5.5		<6.01	R	<1.20
1,4-Dioxane	-		<3.60	R	<0.720
2-Butanone	12.0		**37.7**	**18.7 J**	**4.84**
2-Hexanone	-		**8.42**	R	<0.819
3-Chloropropene	-		<3.13	R	<0.626
Acetone	98.9		**152**	**53.6 J**	**41.1**
Bromodichloromethane	-		<6.70	R	<1.34
Bromoform	-		<10.3	R	<2.06
Bromomethane	<1.7		<3.88	R	<0.776
Carbon tetrachloride	<1.3		<6.29	R	<1.26
Chlorobenzene	<0.9		<4.60	R	<0.920
Chloroethane	<1.1		<2.64	R	<0.527
Chloroform	1.1		<4.88	R	<0.976
Chloromethane	3.7		**4.32**	R	**1.34**
cis-1,2-Dichloroethene	<1.9		<3.96	R	<0.792
cis-1,3-Dichloropropene	<2.3		<4.53	R	<0.907
Dibromochloromethane	-		<8.51	R	<1.70
Dichlorodifluoromethane	16.5		**7.96**	R	**3.01**
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.5		<7.66	R	<1.53
1,2-Dichloro-1,1,2,2-tetrafluoroethane	<6.8		<6.98	R	<1.40
Hexachlorobutadiene	<6.8		<10.6	R	<2.13
iso-Propyl Alcohol	250.0		**23.2 J**	**6.83 J**	**57.4 J**
Methylene chloride	10.0		<8.68	R	<1.74

See footnotes on next page.

Table 3. Concentrations of Volatile Organic Compounds in Generally Co-Located Sub-Slab Soil Vapor Samples and Indoor Air Quality Samples, Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Typical Background Indoor Air Concentrations [1] (ug/m^3)	Sample ID:	Kurt Cleaners SSSV-3	Kurt Cleaners SSSV-4 [2]	Kurt Cleaners IA-5
		Sample Date:	2/24/2010	2/24/2010	2/22/2010
		Sample Type:	Sub-Slab	Sub-Slab	Indoor Air
Non-MGP-Related Constituents (Continued)					
4-Methyl-2-pentanone	6.0		**5.81**	**6.61 J**	**19.5**
Methyl tert butyl ether	11.5		<3.60	R	<0.720
tert-Butyl Alcohol	-		**5.56**	R	**0.624**
Tetrachloroethene	15.9		**39.9**	**306 J**	**16.4**
trans-1,2-Dichloroethene	-		<3.96	R	<0.792
trans-1,3-Dichloropropene	<1.3		<4.53	R	<0.907
Trichloroethene	4.2		<5.37	R	**1.43**
Trichlorofluoromethane	18.1		<5.61	R	**1.60**
Vinyl bromide	-		<4.37	R	<0.874
Vinyl chloride	<1.9		<2.55	R	<0.511

1	Typical non-residential background indoor air concentrations are equal to the 90th percentile values observed by the USEPA in a study from 1994 through 1996, which are the values recommended for comparison in the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (NYSDOH, October 2006), Table C2.
2	R qualifier applied only to Non-Detect compounds.
ug/m^3	Micrograms per cubic meter.
D	Compound quantitated at a secondary dilution.
J	Estimated value.
R	Result rejected.
Bold	Indicates detection above laboratory Reported Detection Limit.
	Compound concentration exceeds background indoor air concentration.

Table 3. Concentrations of Volatile Organic Compounds in Generally Co-Located Sub-Slab Soil Vapor Samples and Indoor Air Quality Samples, Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Typical Background Indoor Air Concentrations [1] (ug/m^3)	Sample ID:	CVS Pharmacy SSSV-5	CVS Pharmacy SSSV-6	CVS Pharmacy SSSV-7	CVS Pharmacy IA-7
		Sample Date:	3/1/2010	3/1/2010	3/1/2010	2/22/2010
		Sample Type:	Sub-Slab	Sub-Slab	Sub-Slab	Indoor Air
Potential MGP-Related Constituents or Other Sources						
1,2,3-Trimethylbenzene	-		<9.83	<224	<1.97	<0.983
1,2,4-Trimethylbenzene	9.5		<9.82	<224	<1.96	<0.982
1,2,4,5-Tetramethylbenzene	-		<137 J	<3,120 J	<27.4 J	<13.7
1,3,5-Trimethylbenzene	3.7		<9.82	<224	<1.96	<0.982
2,2,4-Trimethylpentane	-		<9.34	<212	<1.87	<0.934
o-Chlorotoluene	-		<10.3	<236	<2.07	<1.03
4-Ethyltoluene	3.6		<9.82	<224	<1.96	<0.982
Benzene	9.4		**52.4**	<145	<1.28	**1.94**
Carbon disulfide	4.2		**9.61**	<142	<1.24	<0.622
Cyclohexane	-		**531**	<157	<1.38	<0.688
Ethylbenzene	5.7		<8.68	<198	<1.74	**1.17**
Heptane	-		**401**	<186	**1.98**	**0.913**
n-Hexane	10.2		**1,420**	<160	**7.04**	**0.983**
p/m-Xylene	22.2		<8.68	<198	<1.74	**2.76**
o-Xylene	7.9		<8.68	<198	<1.74	**1.14**
Naphthalene	5.1		**12.4**	<238	<2.10	<1.05
Styrene	1.9		<8.51	<194	**42.9**	<0.851
Thiophene	-		<6.88	<157	<1.38	<0.688
Toluene	43.0		**10.6**	<171	<1.51	**5.31**
Indane	-		<9.67	<220	<1.93	<0.967
Indene	-		<9.50	<216	<1.90	<0.950
1-Methylnaphthalene	-		<145	<3,310	<29.1	<14.5
2-Methylnaphthalene	-		<145 J	<3,310 J	<29.1 J	<14.5
Non-MGP-Related Constituents						
1,1,1-Trichloroethane	20.6		<10.9	<248	<2.18	<1.09
1,1,2,2-Tetrachloroethane	-		<13.7	<312	<2.74	<1.37
1,1,2-Trichloroethane	<1.5		<10.9	<248	<2.18	<1.09
1,1-Dichloroethane	<0.7		<8.09	<184	<1.62	<0.809
1,1-Dichloroethene	<1.4		<7.92	<180	<1.58	<0.792
1,2,4-Trichlorobenzene	<6.8		<14.8 J	<338 J	<2.97 J	<1.48
1,2-Dibromoethane	<1.5		<15.4	<350	<3.07	<1.54
1,2-Dichlorobenzene	<1.2		<12.0	<274	<2.40	<1.20
1,2-Dichloroethane	<0.9		<8.09	<184	<1.62	<0.809
1,2-Dichloropropane	<1.6		<9.24	<210	<1.85	<0.924
1,3-Butadiene	<3.0		<4.42	<101	<0.884	<0.442
1,3-Dichlorobenzene	<2.4		<12.0	<274	<2.40	<1.20
1,4-Dichlorobenzene	5.5		<12.0	<274	<2.40	<1.20
1,4-Dioxane	-		<7.20	<164	<1.44	<0.720
2-Butanone	12.0		**73.4**	<134	**4.89**	**1.28**
2-Hexanone	-		<8.19	<186	<1.64	<0.819
3-Chloropropene	-		<6.26	<142	<1.25	<0.626
Acetone	98.9		**191**	<540	**13.4**	**22.3**
Bromodichloromethane	-		<13.4	<305	<2.68	<1.34
Bromoform	-		<20.6	<470	<4.13	<2.06
Bromomethane	<1.7		<7.76	<177	<1.55	<0.776
Carbon tetrachloride	<1.3		<12.6	<286	<2.51	<1.26
Chlorobenzene	<0.9		<9.20	<209	<1.84	<0.920
Chloroethane	<1.1		<5.27	<120	<1.05	<0.527
Chloroform	1.1		<9.76	<222	**7.80**	<0.976
Chloromethane	3.7		<4.13	<94	<0.825	**1.33**
cis-1,2-Dichloroethene	<1.9		<7.92	**1,700**	<1.58	<0.792
cis-1,3-Dichloropropene	<2.3		<9.07	<206	<1.81	<0.907
Dibromochloromethane	-		<17.0	<388	**3.44**	<1.70
Dichlorodifluoromethane	16.5		<9.88	<225	**2.21**	**3.86**
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.5		<15.3	<349	<3.06	<1.53
1,2-Dichloro-1,1,2,2-tetrafluoroethane	<6.8		<14.0	<318	<2.79	<1.40
Hexachlorobutadiene	<6.8		<21.3	<485	<4.26	<2.13
iso-Propyl Alcohol	250.0		<12.3 J	<280 J	<2.46 J	**63.6 J**
Methylene chloride	10.0		**21.2**	<395	<3.47	<1.74

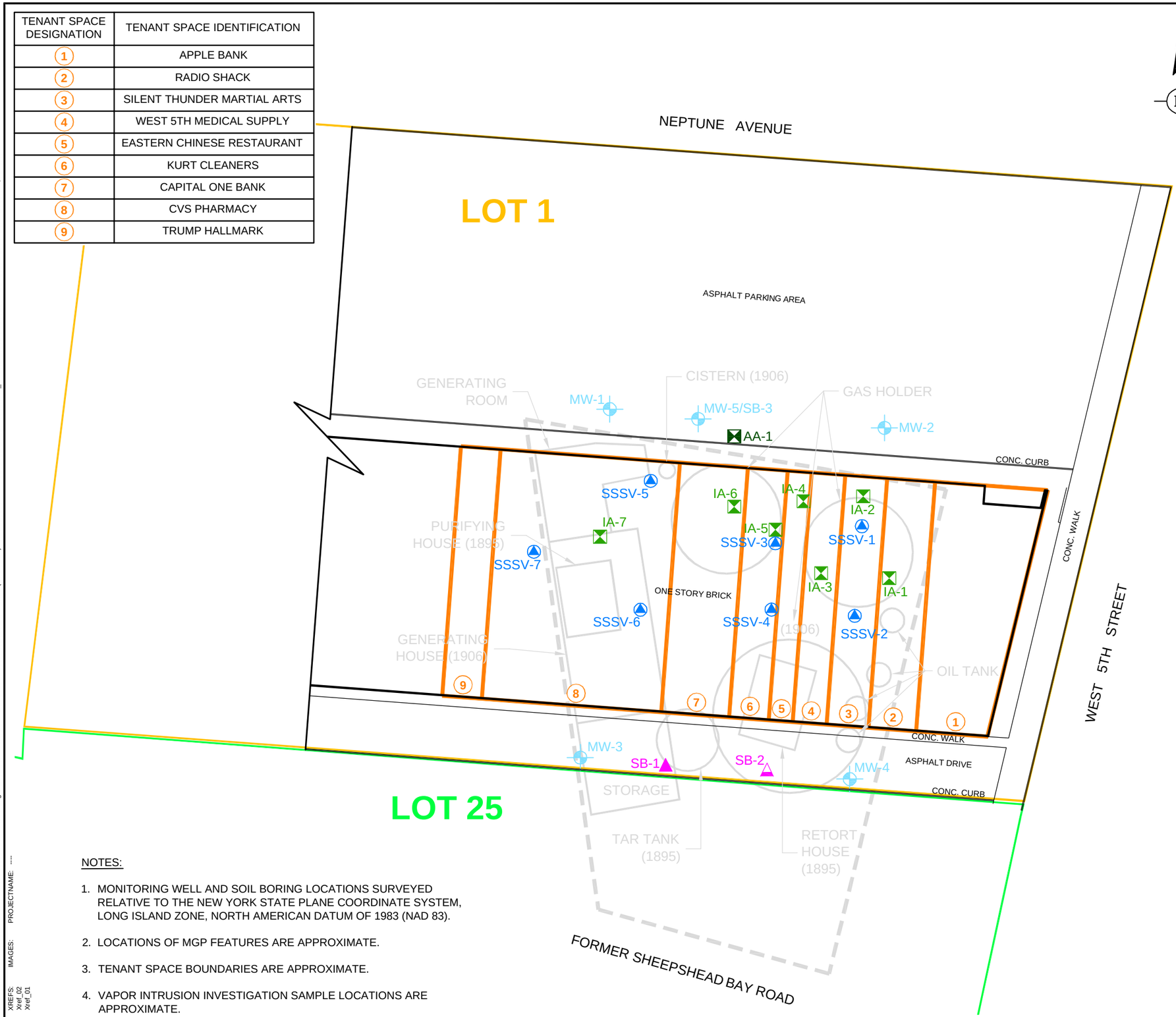
See footnotes on next page.

Table 3. Concentrations of Volatile Organic Compounds in Generally Co-Located Sub-Slab Soil Vapor Samples and Indoor Air Quality Samples, Former Dangman Park MGP Site, Brooklyn, New York.

Compound (Units in ug/m^3)	Typical Background Indoor Air Concentrations [1] (ug/m^3)		CVS Pharmacy			
		Sample ID:	SSSV-5	SSSV-6	SSSV-7	IA-7
		Sample Date:	3/1/2010	3/1/2010	3/1/2010	2/22/2010
		Sample Type:	Sub-Slab	Sub-Slab	Sub-Slab	Indoor Air
Non-MGP-Related Constituents (Continued)						
4-Methyl-2-pentanone	6.0		<8.19	<186	<1.64	<0.819
Methyl tert butyl ether	11.5		<7.20	<164	<1.44	<0.720
tert-Butyl Alcohol	-		<6.06	<138	<1.21	<0.606
Tetrachloroethene	15.9		<13.6	**606,000 D**	**38.4**	**10.4**
trans-1,2-Dichloroethene	-		<7.92	<180	<1.58	<0.792
trans-1,3-Dichloropropene	<1.3		<9.07	<206	<1.81	<0.907
Trichloroethene	4.2		<10.7	**28,000**	<2.15	<1.07
Trichlorofluoromethane	18.1		<11.2	<256	**2.26**	**1.99**
Vinyl bromide	-		<8.74	<199	<1.75	<0.874
Vinyl chloride	<1.9		<5.11	**210**	<1.02	<0.511

1	Typical non-residential background indoor air concentrations are equal to the 90th percentile values observed by the USEPA in a study from 1994 through 1996, which are the values recommended for comparison in the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (NYSDOH, October 2006), Table C2.
2	R qualifier applied only to Non-Detect compounds.
ug/m^3	Micrograms per cubic meter.
D	Compound quantitated at a secondary dilution.
J	Estimated value.
R	Result rejected.
Bold	Indicates detection above laboratory Reported Detection Limit.
	Compound concentration exceeds background indoor air concentration.

TENANT SPACE DESIGNATION	TENANT SPACE IDENTIFICATION
1	APPLE BANK
2	RADIO SHACK
3	SILENT THUNDER MARTIAL ARTS
4	WEST 5TH MEDICAL SUPPLY
5	EASTERN CHINESE RESTAURANT
6	KURT CLEANERS
7	CAPITAL ONE BANK
8	CVS PHARMACY
9	TRUMP HALLMARK



LEGEND:

- APPROXIMATE BOUNDARY OF BLOCK 7273, LOT 1
- APPROXIMATE BOUNDARY OF BLOCK 7273, LOT 25
- APPROXIMATE FORMER MGP BOUNDARY
- FORMER MGP FEATURE (1895 AND/OR 1906 SANBORN FIRE INSURANCE MAPS)
- TENANT SPACE BOUNDARY
- 1 — TENANT SPACE DESIGNATION
- SB-1 — SOIL BORING LOCATION
- SB-2 — SOIL BORING/GEOPROBE GROUNDWATER SAMPLING LOCATION
- MW-1 — MONITORING WELL LOCATION
- SSSV-1 — SUB-SLAB SOIL VAPOR SAMPLE LOCATION
- IA-1 — INDOOR AIR QUALITY SAMPLE LOCATION
- AA-1 — AMBIENT AIR QUALITY SAMPLE LOCATION

0 50’ 100’

SCALE IN FEET

NOTES:

1. MONITORING WELL AND SOIL BORING LOCATIONS SURVEYED RELATIVE TO THE NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND ZONE, NORTH AMERICAN DATUM OF 1983 (NAD 83).
2. LOCATIONS OF MGP FEATURES ARE APPROXIMATE.
3. TENANT SPACE BOUNDARIES ARE APPROXIMATE.
4. VAPOR INTRUSION INVESTIGATION SAMPLE LOCATIONS ARE APPROXIMATE.

NATIONAL GRID USA
FORMER DANGMAN PARK MGP SITE
BROOKLYN, NEW YORK
SITE CHARACTERIZATION DATA SUMMARY ADDENDUM

VAPOR INTRUSION INVESTIGATION SAMPLE LOCATIONS

ARCADIS

FIGURE 1

nationalgrid

Indoor Air (Canister) Sample Collection Field Form

Project # B0036704.0000.00005 Consultant Arcadis

Project Name Former Dansville Park MGP site Collector Pat Prezoorski

Sample ID IA-1

Vacuum gauge "zero" ("Hg) yes

Start Date/Time 2/22/10 9:38AM Start Pressure ("Hg) -28.5

End Date/Time 2/22/10 1500 End Pressure ("Hg) -7

Canister ID 1667 End pressure > "zero"? yes

Flow controller ID 0176 Sampling duration (intended) 8hr

Associated ambient air sample ID AA-1 Associated sub-slab vapor sample ID

Tubing type used NA Length of tubing NA cm Tubing volume NA cc

Volume purged NA cc @ min 1 to 3 volumes purged @ < 200cc/min? NA

Weather Conditions at Start of Sampling: outdoor

Air temperature (°F) 36 Rainfall Wind direction North

Barometric pressure 29.99 Relative humidity % 50 Wind speed (mph) 6.9

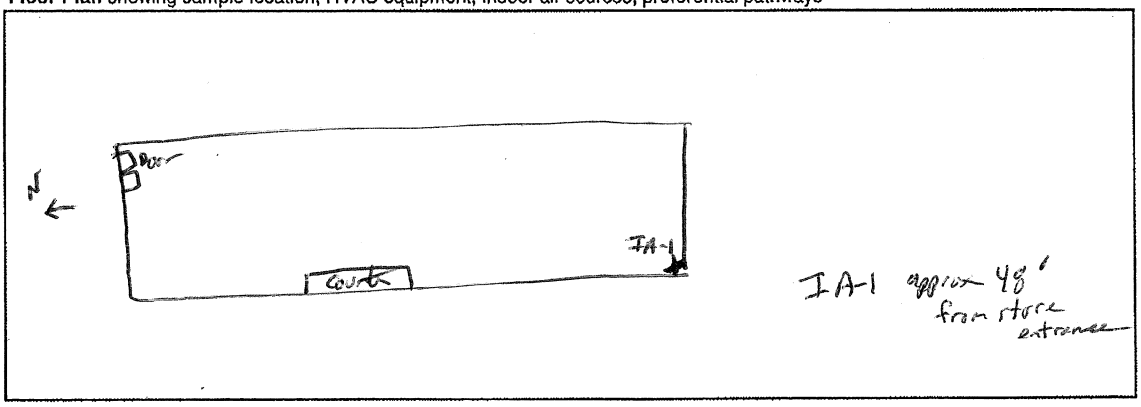
Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F) 63.5 Indoor relative humidity (%) 39.7

Building Survey and Chemical Inventory Form Completed? No * Photograph IDs

* Staff occupied with customers. Several attempts made to obtain chemical use list.

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways



Comments: Midpt check at 1350 -12" Hg (63.3F, 35.1% relative humidity)

At 1433 -9" Hg

At 1500 -7" Hg (64.3°F, 32.6% Relative Humidity)

Flow controller 9.9 ml/min

nationalgrid

Indoor Air (Canister) Sample Collection Field Form

Project # B00036704.0000.00005 Consultant Arcadis

Project Name Former Dangler Park MGP site Collector Pat Prezorski

Sample ID IA-2

Vacuum gauge "zero" ("Hg) ~~Yes~~

Start Date/Time 2/22/16 9:13 AM Start Pressure ("Hg) -29

End Date/Time 2/22/16 1600 End Pressure ("Hg) -7

Canister ID 16098 End pressure > "zero"? ~~Yes~~

Flow controller ID 0441 Sampling duration (intended) 9hrs

Associated ambient air sample ID AA-1 Associated sub-slab vapor sample ID

Tubing type used NA Length of tubing NA cm Tubing volume NA cc

Volume purged NA cc @ min 1 to 3 volumes purged @ < 200cc/min?

Weather Conditions at Start of Sampling: Indoor

Air temperature (°F) 35 Rainfall Wind direction North

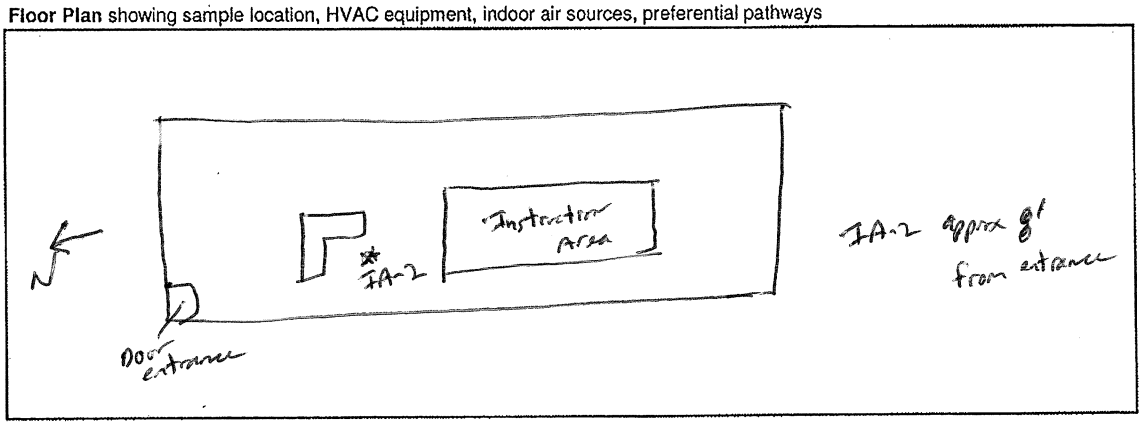
Barometric pressure 29.99 Relative humidity % 50 Wind speed (mph) 6.9

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F) 59.2 Indoor relative humidity (%) 40.6

Building Survey and Chemical Inventory Form Completed? Photograph IDs

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways



Comments: At 1433 -12" Hg

At 1600 -7" Hg (34.4 % relative Humidity, 69.9F)

Flow controller 9.8 ml/min

nationalgrid

Indoor Air (Canister) Sample Collection Field Form

Project #	B0036704.0000.00005	Consultant	Arcadis
Project Name	Former Parsonage Park MGP Site	Collector	Pat Prezorski

Sample ID	Dup022210	Vacuum gauge "zero" ("Hg)	No. Reading -4.5
Start Date/Time	2/22/10 9:14AM	Start Pressure ("Hg)	greater than -30
End Date/Time	2/22/10 1600	End Pressure ("Hg)	-9
Canister ID	1680	End pressure > "zero"?	yes
Flow controller ID	0023	Sampling duration (intended)	8 hrs
Associated ambient air sample ID	AA-1	Associated sub-slab vapor sample ID	

Tubing type used NA Length of tubing NA cm Tubing volume NA cc

Volume purged NA cc @ ______ min 1 to 3 volumes purged @ < 200cc/min? ______

Weather Conditions at Start of Sampling: outdoor

Air temperature (°F)	35	Rainfall		Wind direction	North
Barometric pressure	29.99	Relative humidity %	50	Wind speed (mph)	6.9

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F)	59.2	Indoor relative humidity (%)	40.6
Building Survey and Chemical Inventory Form Completed?		Photograph IDs	

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways

See IA-2

Comments: Vacuum gauge not at zero. Reading -4.5.
Sample end time at -9" Hg

At 1433 -15" Hg
At 1600 -9" Hg (34.4% relative Humidity, 69.9 F)

No Flow rate (ml/min) stated on controller.

Dup022210 is IA-2

nationalgrid

Indoor Air (Canister) Sample Collection Field Form

Project # B00367Y.0000.00005 Consultant Arcadis

Project Name Former Dansman Park MGP site Collector Pat Prezorski

Sample ID IA-3

Start Date/Time 2/22/10 9:03 AM Vacuum gauge "zero" ("Hg) yes

End Date/Time 2/22/10 1621 Start Pressure ("Hg) -29.5

Canister ID 1036 End Pressure ("Hg) -7

Flow controller ID 0324 End pressure > "zero"? yes

Associated ambient air sample ID AA-1 Sampling duration (intended) 8 hrs

Associated sub-slab vapor sample ID

Tubing type used NA Length of tubing NA cm Tubing volume NA cc

Volume purged NA cc @ min 1 to 3 volumes purged @ < 200cc/min?

Weather Conditions at Start of Sampling: outdoor

Air temperature (°F) 34 Rainfall Wind direction North

Barometric pressure 29.99 Relative humidity % 54 Wind speed (mph) 11.5

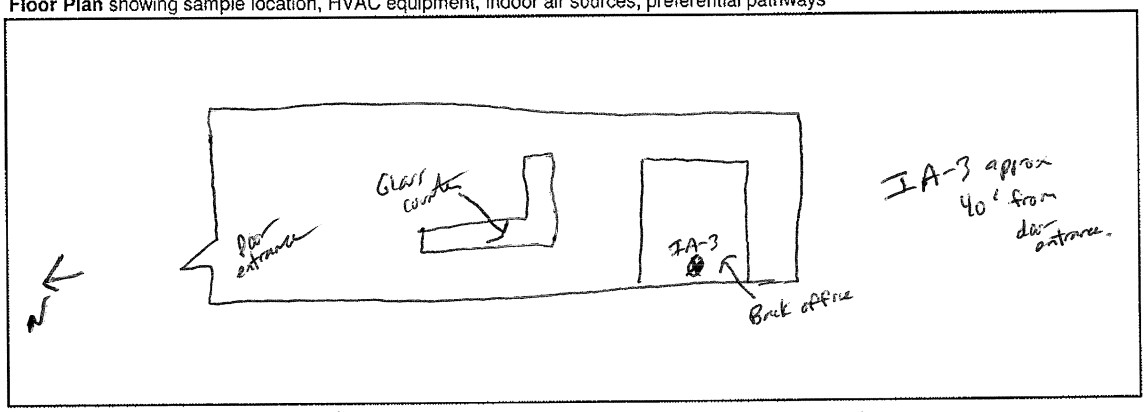
Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F) 67.9 Indoor relative humidity (%) 30.2

Building Survey and Chemical Inventory Form Completed? Photograph IDs

All staff on phone during attempts.
Able to find out flue cleaner + cutoff used.

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways



Comments: Mid pt check 1333 -16 "Hg (38.6% RH, 63.6 F)
At 1552 -9
At 1621 -7 (70.3 F, 36.2% RH)

Flow controller 9.6 ml/min

nationalgrid

Indoor Air (Canister) Sample Collection Field Form

Project #	B00036704.0000.00005	Consultant	Arcadis
Project Name	Former Dansmer Park MGP Site	Collector	Pat Prezorski

Sample ID	IA-4	Vacuum gauge "zero" ("Hg)	yes
Start Date/Time	2/22/10 1114AM	Start Pressure ("Hg)	-28.75
End Date/Time	2/22/10 1904	End Pressure ("Hg)	-7
Canister ID	991	End pressure > "zero"?	yes
Flow controller ID	0273	Sampling duration (intended)	8hr
Associated ambient air sample ID	AA-1	Associated sub-slab vapor sample ID	

Tubing type used	NA	Length of tubing	NA	cm	Tubing volume	NA	cc
Volume purged	NA	cc @		min	1 to 3 volumes purged @ < 200cc/min?		

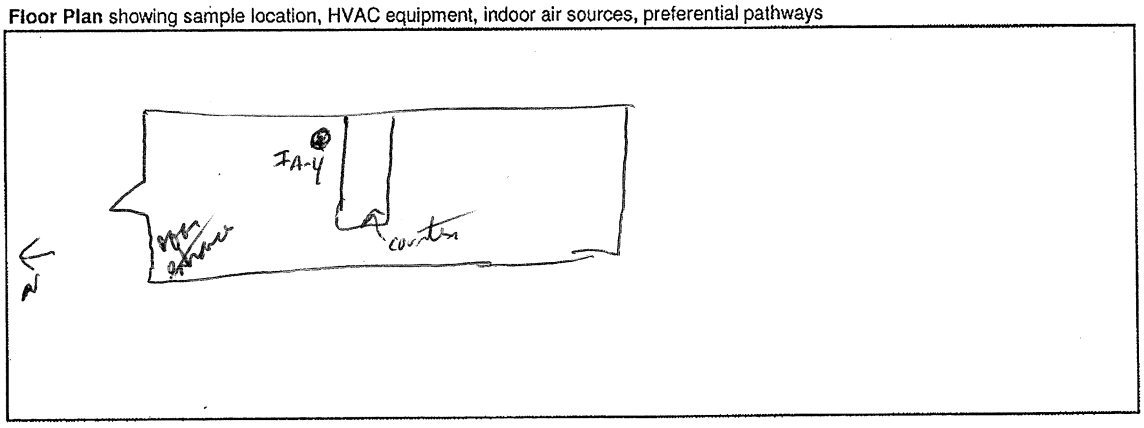
Weather Conditions at Start of Sampling: outdoor

Air temperature (°F)	40	Rainfall		Wind direction	North
Barometric pressure	29.99	Relative humidity %	45	Wind speed (mph)	6.9

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F)	57.8	Indoor relative humidity (%)	49.5
Building Survey and Chemical Inventory Form Completed?		Photograph IDs	

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways



Comments: At 1537 -17"Hg (51.2% relative Humidity, 56.7F)
At 1702 -13"Hg, 1744 -11"Hg, 1811 -9.5"Hg, 1935 -8.5"Hg, 1951 -8"Hg

At 1904 -7"Hg (51.1% relative Humidity, 63.4°F)

Flow controller 9.4 ml/min

nationalgrid

Indoor Air (Canister) Sample Collection Field Form

Project # B0036704.0000.00005 Consultant Arcadis

Project Name Former Dansman Park MGP site Collector Pat Prezorski

Sample ID IA-5

Start Date/Time 2/22/10 8:56AM Vacuum gauge "zero" ("Hg) yes

End Date/Time 2/22/10 1616 Start Pressure ("Hg) Greater than -30

Canister ID 1542 End Pressure ("Hg) -7

Flow controller ID 0276 End pressure > "zero"? yes

Associated ambient air sample ID AA-1 Sampling duration (intended) 8hr

Associated sub-slab vapor sample ID

Tubing type used NA Length of tubing NA cm Tubing volume NA cc

Volume purged NA cc @ min 1 to 3 volumes purged @ < 200cc/min?

Weather Conditions at Start of Sampling: outside

Air temperature (°F) 34 Rainfall Wind direction North

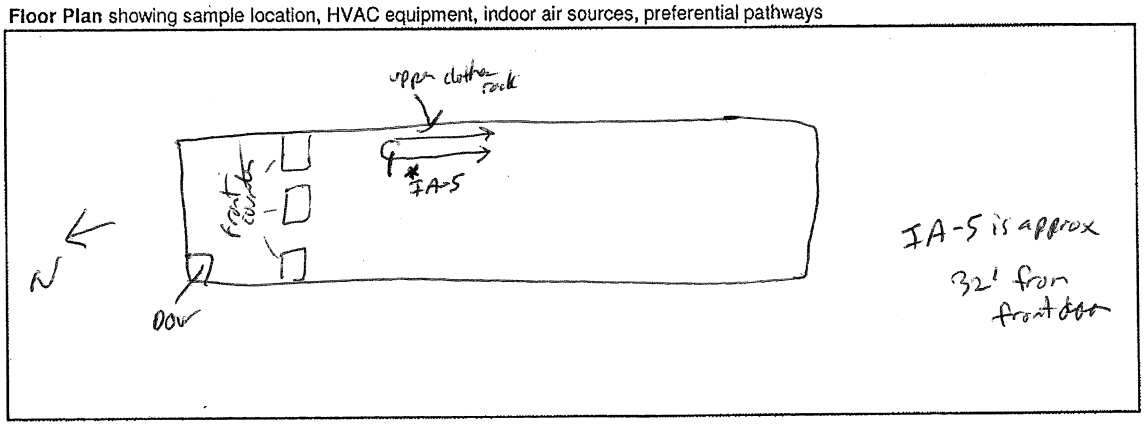
Barometric pressure 29.99 Relative humidity 54 Wind speed (mph) 11.5

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

At Mid-pt Indoor air temp (°F) 59.2 At Mid pt Indoor relative humidity (%) 65.6

Building Survey and Chemical Inventory Form Completed? Photograph IDs

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways



Comments: Mid pt check at 1325 -16.5" Hg

At 1536 -9" Hg

At 1616 -7" Hg (68.9°F) (41.9% relative humidity)

No flow (ml/min) or controller

nationalgrid

Indoor Air (Canister) Sample Collection Field Form

Project # B0036704.0000.00005 Consultant Arcadis

Project Name Dashmore Park former MGP site Collector Pat Prezorski

Sample ID IA-6

Start Date/Time 2/22/10 8:47 AM Vacuum gauge "zero" ("Hg) Yes

End Date/Time 2/22/10 1541 Start Pressure ("Hg) -29

Canister ID 609 End Pressure ("Hg) -7

Flow controller ID 0175 End pressure > "zero"? Yes

Associated ambient air sample ID AA-1 Sampling duration (intended) 8 hr

Associated sub-slab vapor sample ID

Tubing type used NA Length of tubing NA cm Tubing volume NA cc

Volume purged NA cc @ NA min 1 to 3 volumes purged @ < 200cc/min? NA

Weather Conditions at Start of Sampling: outdoor

Air temperature (°F) 34 Rainfall Wind direction North

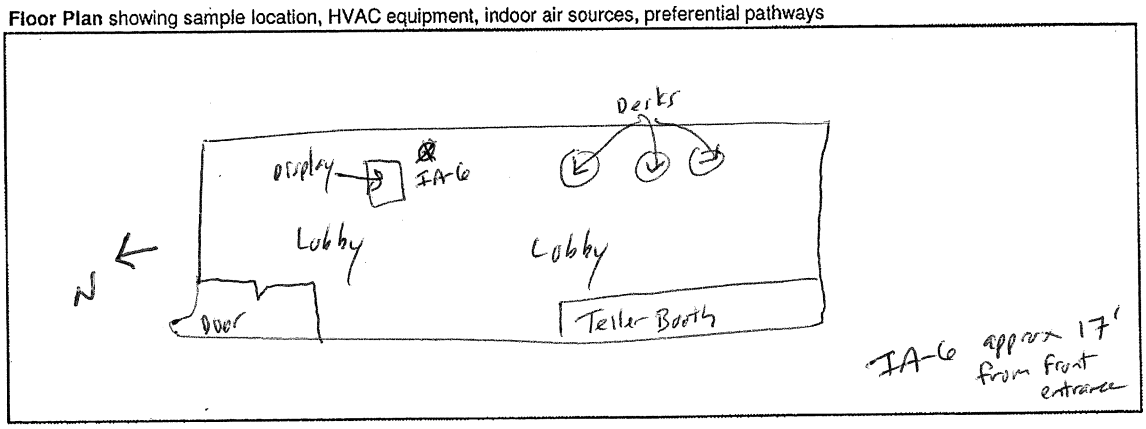
Barometric pressure 29.99 Relative humidity % 54 Wind speed (mph) 11.5

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F) 67.0 Indoor relative humidity (%) 29.9

Building Survey and Chemical Inventory Form Completed? Photograph IDs

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways



Comments: Mid pt check at 12:55 -16" Hg

At 1436 -11" Hg

At 1532 -7.75" Hg

At 1541 -7" Hg (66.3°F) (37.2% Relative Humidity)

No rate (ml/min) on flow controller.

nationalgrid

Indoor Air (Canister) Sample Collection Field Form

Project # B00 36704.0000.00005 Consultant Arcadis

Project Name Former Dansman Park MGP site Collector Pat Prezoski

Sample ID IA-7

Vacuum gauge "zero" ("Hg) Yes

Start Date/Time 2/22/10 9:29 AM Start Pressure ("Hg) greater than -30

End Date/Time 2/22/10 1705 End Pressure ("Hg) -7

Canister ID 1545 End pressure > "zero"? Yes

Flow controller ID 0282 Sampling duration (intended) 8 hrs

Associated ambient air sample ID AA-1 Associated sub-slab vapor sample ID

Tubing type used NA Length of tubing NA cm Tubing volume NA cc

Volume purged NA cc @ min 1 to 3 volumes purged @ < 200cc/min?

Weather Conditions at Start of Sampling: Outdoor

Air temperature (°F) 36 Rainfall Wind direction North

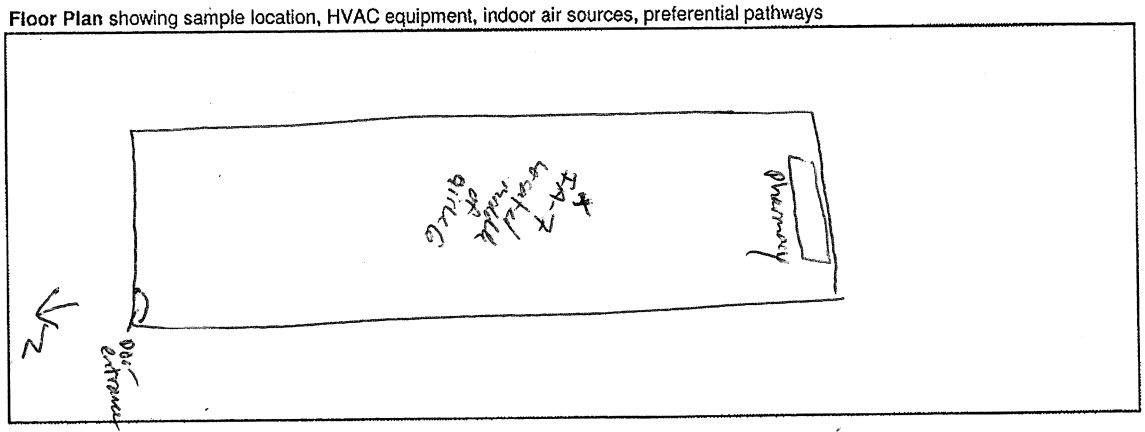
Barometric pressure 29.99 Relative humidity % 50 Wind speed (mph) 6.9

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F) 61.3 Indoor relative humidity (%)

Building Survey and Chemical Inventory Form Completed? Photograph IDs

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways



Comments: Mid-pt check at 1340 -8" Hg (35.3% relative Humidity, 62.7°F)
At 1550 -11" Hg, 1628 -9" Hg, 1647 -8" Hg

At 1705 -7" Hg (73.1 F, 27.0% relative humidity)

No flow ml/min on controller

nationalgrid

Ambient Air (Canister) Sample Collection Field Form

Project #	B0036704.0000.00005	Consultant	Arcadis
Project Name	Former Dangman Park MGP Site	Collector	Pat Prezant

Sample ID	AA-1		
		Vacuum gauge "zero" ("Hg)	yes
Start Date/Time	2/22/10 9:59 AM	Start Pressure ("Hg)	-29.5
End Date/Time	2/22/10 1521	End Pressure ("Hg)	-7
Canister ID	1530	End pressure > "zero"?	yes
Flow controller ID	0369	Sampling duration (intended)	8 hrs

Tubing type used: NA Length of tubing: NA cm Tubing volume: NA cc

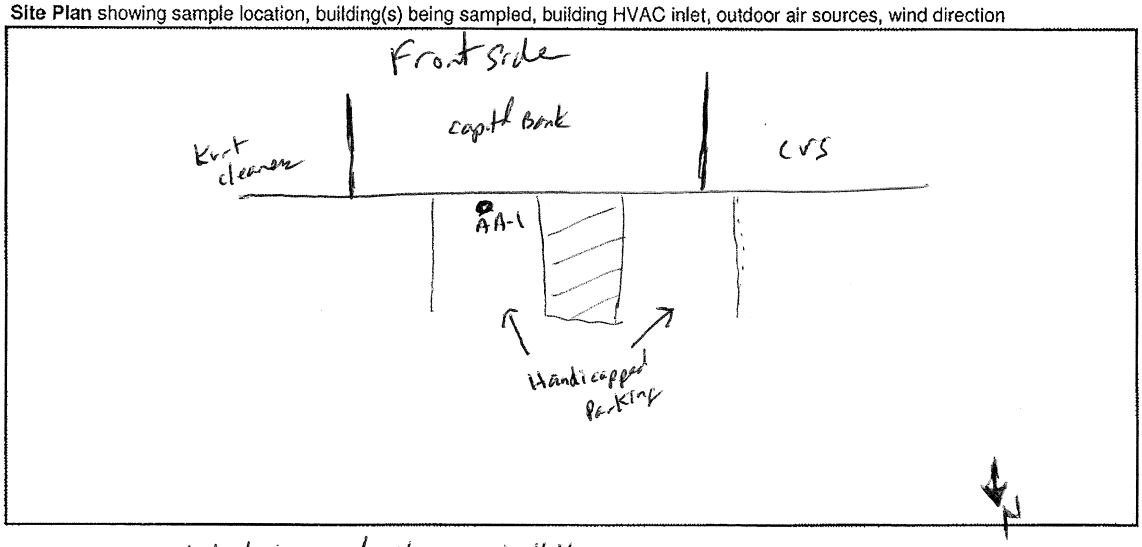
Volume purged: NA cc @ _____ min 1 to 3 volumes purged @ < 200cc/min? _____

Weather Conditions at Start of Sampling:

Air temperature (°F)	37	Rainfall		Wind direction	North
Barometric pressure	29.99	Relative humidity	50	Wind speed (mph)	6.9

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Site Plan showing sample location, building(s) being sampled, building HVAC inlet, outdoor air sources, wind direction



Comments: Mid-pt check at 1410 -12" Hg
At 1435 -10.25" Hg
At 1510 -8" Hg
At 1521 -7" Hg

Flow controller 9.9 ml/min

nationalgrid

Sub-slab Vapor (Canister) Sample Collection Field Form

Project #	B0036704.0000.00005	Consultant	Arcadis
Project Name	Former Daregman Park MGP site	Collector	Pat Perzotti

Sample ID	SSSV-1	Vacuum gauge "zero" ("Hg)	yes
Start Date/Time	2/25/10 12:14	Start Pressure ("Hg)	-28.5
End Date/Time	2/25/10 12:43	End Pressure ("Hg)	-6
Canister ID	1679	End pressure > "zero"?	yes
Flow controller ID	0368	Sampling duration (intended)	approx 38 minutes
Associated indoor air sample ID	IA-2	Associated ambient air sample ID	AA-1

Tubing type used: teflon Length of tubing: 168 cm Tubing volume: ______ cc

Volume purged: ______ cc @ 156ml/ min 1 to 3 volumes purged @ < 200cc/min? yes

Weather Conditions at Start of Sampling: outside

Air temperature (°F): 33.8 Rainfall: light rain/snow Wind direction: NNW

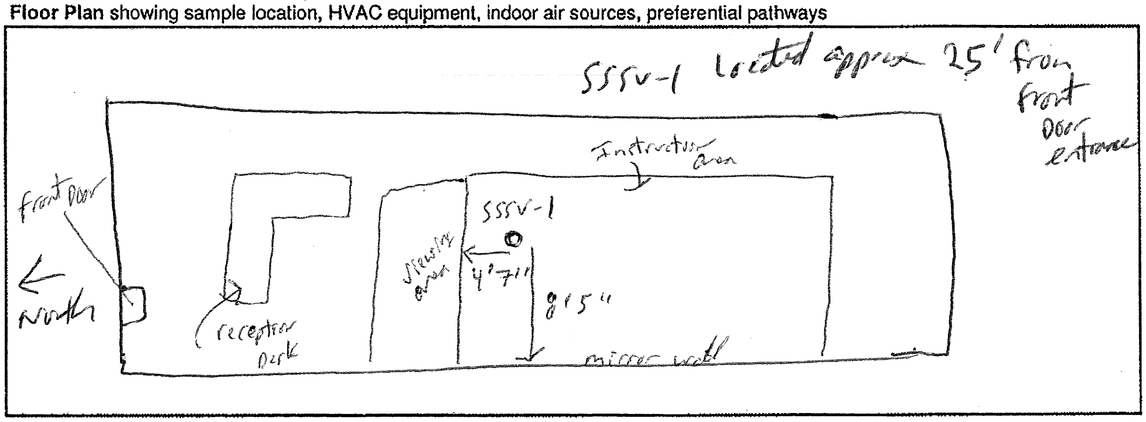
Barometric pressure: 29.41 Wind speed (mph): 12.7

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F): 66.5 Indoor relative humidity (%): 54

Building Survey and Chemical Inventory Form Completed? ______ Photograph IDs ______

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways



Comments: SSSV-1 is Dup 022510

Flow controller 159 ml/min

nationalgrid **Sub-slab Vapor (Canister) Sample Collection Field Form**

Project # B0036704.0000.00005 Consultant Arcadis

Project Name Former Dunsmore Park MGP site Collector Pat Prezorski

Sample ID SSSV-2

Vacuum gauge "zero" ("Hg) yes

Start Date/Time 2/25/10 1308 Start Pressure ("Hg) -28.5

End Date/Time 2/25/10 1338 End Pressure ("Hg) -7

Canister ID 1638 End pressure > "zero"? yes

Flow controller ID 0358 Sampling duration (intended) Approx 30 minutes

Associated indoor air sample ID IA-2 Associated ambient air sample ID AA-1

Tubing type used teflon Length of tubing 168 cm Tubing volume _____ cc

Volume purged _____ cc @ 159 ml/ min 1 to 3 volumes purged @ < 200cc/min? yes

Weather Conditions at Start of Sampling: outside

Air temperature (°F) 34 Rainfall Light Rain/Snow Wind direction North

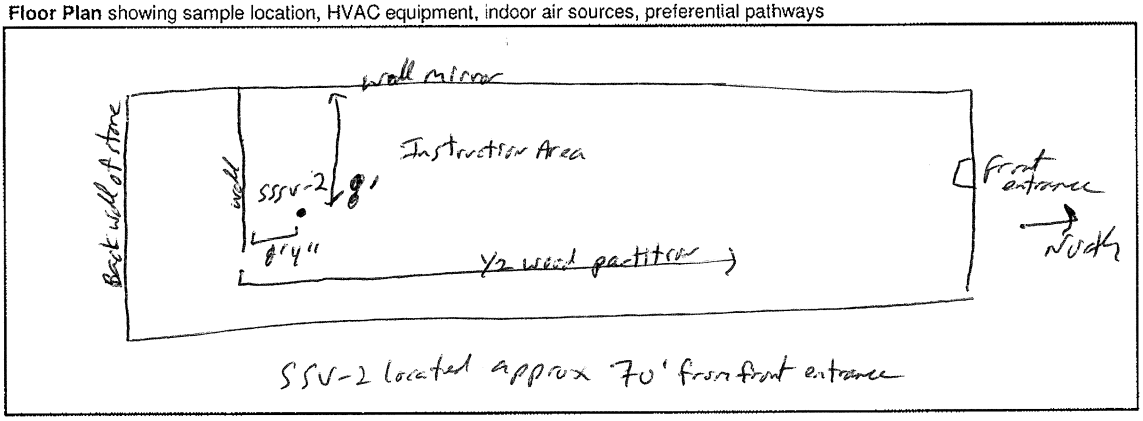
Barometric pressure 29.37 Wind speed (mph) 12.7

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F) 66.9 Indoor relative humidity (%) 47.1

Building Survey and Chemical Inventory Form Completed? _____ Photograph IDs _____

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways



Comments:

Flow controller 153 ml/min

nationalgrid **Sub-slab Vapor (Canister) Sample Collection Field Form**

Project # B00 36704.0000.00005 Consultant Arcadis

Project Name Former Dangler Park MGP site Collector Pat Prezorki

Sample ID Dup022510

Vacuum gauge "zero" ("Hg) Yes

Start Date/Time 2/25/10 1215 Start Pressure ("Hg) -28

End Date/Time 2/25/10 1243 End Pressure ("Hg) -6

Canister ID 705 End pressure > "zero"? Yes

Flow controller ID 0267 Sampling duration (intended) approx 30 minutes

Associated indoor air sample ID IA-2 Associated ambient air sample ID AA-1

Tubing type used Teflon Length of tubing 168 cm Tubing volume _____ cc

Volume purged _____ cc @ 156 ml/min 1 to 3 volumes purged @ < 200cc/min? Yes

Weather Conditions at Start of Sampling: outside

Air temperature (°F) 33.8 Rainfall Light rain/snow Wind direction WNW

Barometric pressure 29.41 Wind speed (mph) 12.7

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F) 66.5 Indoor relative humidity (%) 54

Building Survey and Chemical Inventory Form Completed? _____ Photograph IDs _____

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways

See SSSV-1

Comments:

Dup 022510 is SSSV-1

Flow controller 158 ml/min

nationalgrid **Sub-slab Vapor (Canister) Sample Collection Field Form**

Project # B0036704.0000.00005 Consultant Arcadis

Project Name Former Dansgrove Park MGP site Collector Pat Prezorski

Sample ID SSSV-3

Start Date/Time 2/24/10 1252 Vacuum gauge "zero" ("Hg) yes

End Date/Time 2/24/10 1325 Start Pressure ("Hg) -29

Canister ID 979 End Pressure ("Hg) -7

Flow controller ID 0048 End pressure > "zero"? yes

Associated indoor air sample ID IA-5 Sampling duration (intended) approx 38 minutes

Associated ambient air sample ID AA-1

Tubing type used teflon Length of tubing 168 cm Tubing volume _____ cc

Volume purged _____ cc @ 152 ml/min 1 to 3 volumes purged @ < 200cc/min? yes

Weather Conditions at Start of Sampling: outside

Air temperature (°F) 39 Rainfall Light Drizzle Wind direction WNW

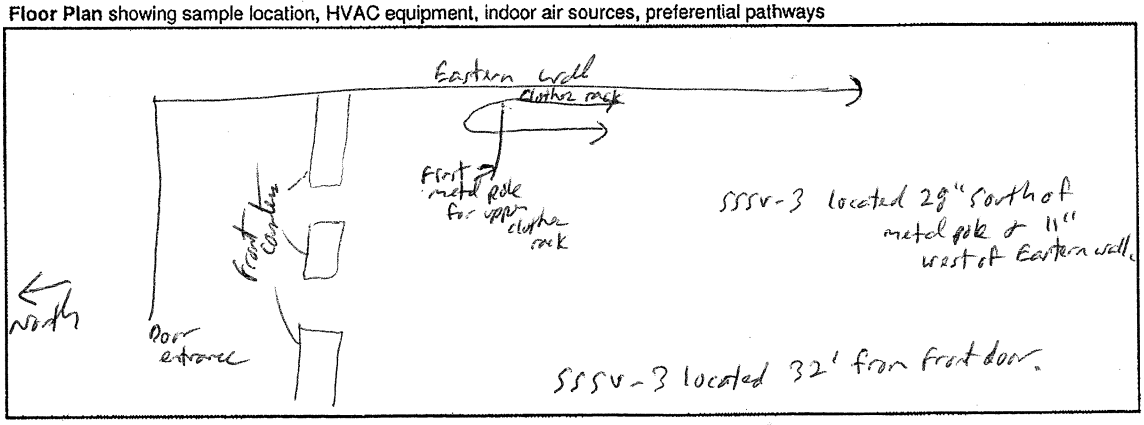
Barometric pressure 29.73 relative humidity % 93 Wind speed (mph) 13.8

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F) 62.8 Indoor relative humidity (%) 52.7

Building Survey and Chemical Inventory Form Completed? yes Photograph IDs _____

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways



Comments: Purge 1147-1248 @ 152 ml/min

Flow controller 159 ml/min

nationalgrid **Sub-slab Vapor (Canister) Sample Collection Field Form**

Project # B00036704.0000.00005 Consultant Arcadis

Project Name Former Dangman Park MGP site Collector Pat Prezioti

Sample ID SSSV-4

Start Date/Time 2/24/10 1346 Vacuum gauge "zero" ("Hg) yes

End Date/Time 2/24/10 1454 Start Pressure ("Hg) -29

Canister ID 923 End Pressure ("Hg) -7

Flow controller ID 0252 End pressure > "zero"? yes

Associated indoor air sample ID IA-5 Sampling duration (intended) approx 38 minutes

Associated ambient air sample ID AA-1

Tubing type used teflon Length of tubing 168 cm Tubing volume _____ cc

Volume purged _____ cc @ 155 ml/ min 1 to 3 volumes purged @ < 200cc/min? yes

Weather Conditions at Start of Sampling: outside overcast

Air temperature (°F) 41 Rainfall None Wind direction NNW

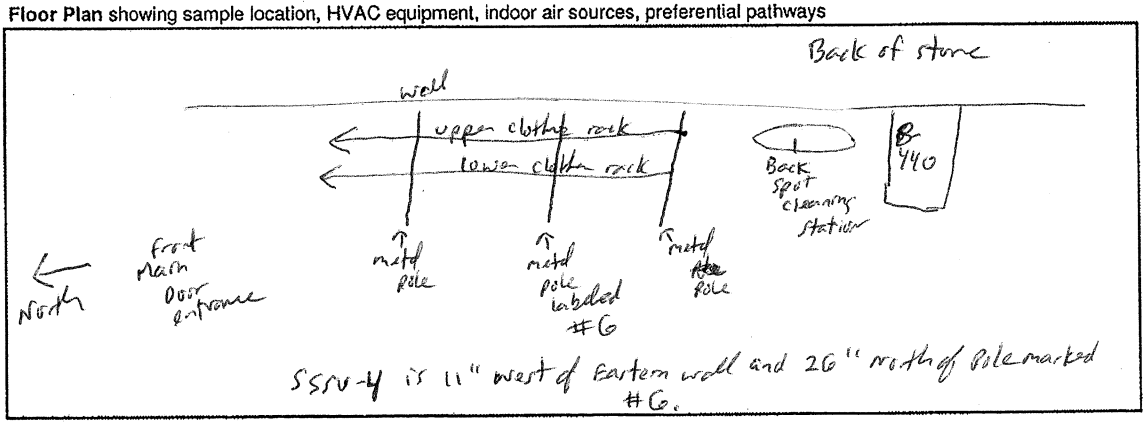
Barometric pressure 29.71 Relative Humidity % 89 Wind speed (mph) 15

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F) 67.5 Indoor relative humidity (%) 53.3

Building Survey and Chemical Inventory Form Completed? yes Photograph IDs _____

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways



SSSV-4 is located 7' from front door.

Comments: Purge 1328 - 1330 at 155 ml/min

Flow controller 159 ml/min

nationalgrid **Sub-slab Vapor (Canister) Sample Collection Field Form**

Project # B0036704.0000.00005 Consultant Arcadis

Project Name Former Dunham Park MGP site Collector Pat Brzoski

Sample ID SSSV-5

Vacuum gauge "zero" ("Hg) yes

Start Date/Time 3/1/10 7:47AM Start Pressure ("Hg) -28

End Date/Time 3/1/10 8:12 AM End Pressure ("Hg) -7

Canister ID 652 End pressure > "zero"? yes

Flow controller ID 0269 Sampling duration (intended) approx 30 minutes

Associated indoor air sample ID IA-7 Associated ambient air sample ID AA-1

Tubing type used Teflon Length of tubing 168 cm Tubing volume _____ cc

Volume purged _____ cc @ 159 ml/ min 1 to 3 volumes purged @ < 200cc/min? yes

Weather Conditions at Start of Sampling: outside

Air temperature (°F) 39 Rainfall None Wind direction NW

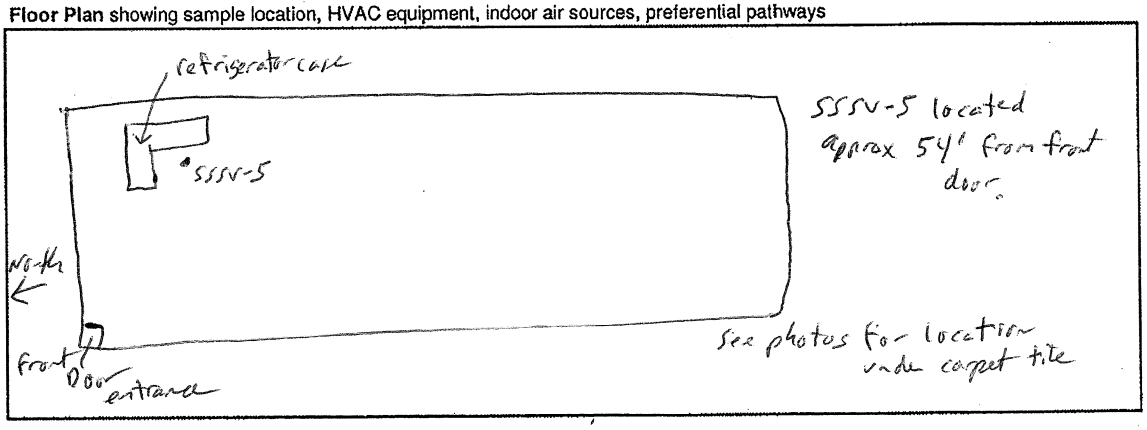
Barometric pressure 29.66 Wind speed (mph) 21.9

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F) 0665 Indoor relative humidity (%) 35.0

Building Survey and Chemical Inventory Form Completed? _____ Photograph IDs _____

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways



Comments: Purge 7:43AM - 7:45AM

nationalgrid

Sub-slab Vapor (Canister) Sample Collection Field Form

Project #	B0036704.0000.00005	Consultant	Arcadis
Project Name	Former Daugman Park MGP Site	Collector	Pat Prezocki

Sample ID	SSSV-6	Vacuum gauge "zero" ("Hg)	No Reading -4
Start Date/Time	3/1/10 9:25 AM	Start Pressure ("Hg)	Greater than -30
End Date/Time	3/1/10 9:54 AM	End Pressure ("Hg)	-12
Canister ID	1635	End pressure > "zero"?	yes
Flow controller ID	0287	Sampling duration (intended)	approx 38 minutes
Associated indoor air sample ID	IA-7	Associated ambient air sample ID	AA-1

Tubing type used: teflon Length of tubing: 168 cm Tubing volume: ______ cc

Volume purged: ______ cc @ 158 ml/min 1 to 3 volumes purged @ < 200cc/min? yes

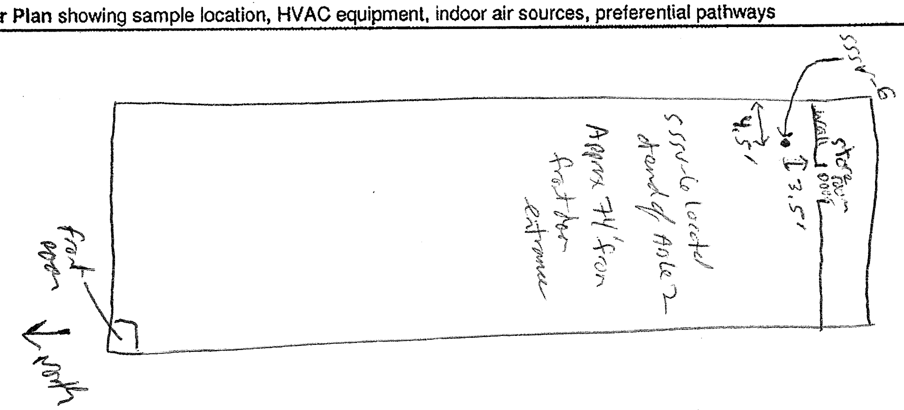
Weather Conditions at Start of Sampling: outside

Air temperature (°F)	40	Rainfall	None	Wind direction	NW
Barometric pressure	29.67			Wind speed (mph)	2-3

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F)	66	Indoor relative humidity (%)	36.4
Building Survey and Chemical Inventory Form Completed?		Photograph IDs	

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways



Comments: Purge 9:20-9:22 AM

No cap on Summa can

At 9:44 AM -20" Hg

Flow controller 158 ml/min

nationalgrid

Sub-slab Vapor (Canister) Sample Collection Field Form

Project #	B0036704.0000.00005	Consultant	Arcadis
Project Name	Former Dangman Park MGP site	Collector	Pat Prezorski

Sample ID	SSSV-7	Vacuum gauge "zero" ("Hg)	No Reading -4
Start Date/Time	3/1/10 11:32 AM	Start Pressure ("Hg)	Greater than -30
End Date/Time	3/1/10 12:00	End Pressure ("Hg)	-12
Canister ID	963	End pressure > "zero"?	Yes
Flow controller ID	0327	Sampling duration (intended)	Approx 38 minutes
Associated indoor air sample ID	IA-7	Associated ambient air sample ID	AA-1

Tubing type used: teflon   Length of tubing: 168 cm   Tubing volume: ______ cc

Volume purged: ______ cc @ 158 ml/min   1 to 3 volumes purged @ < 200cc/min? yes

Weather Conditions at Start of Sampling: outside

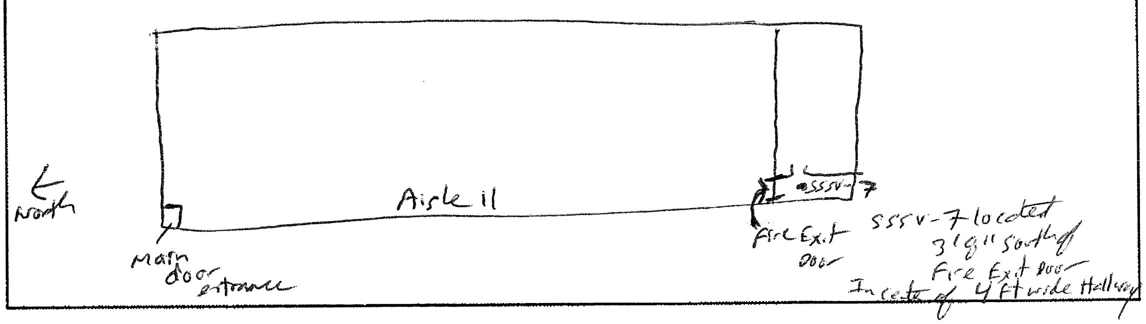
Air temperature (°F)	46	Rainfall	None	Wind direction	NNW
Barometric pressure	29.70	Relative Humidity %	47	Wind speed (mph)	24.2

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F)	64.7	Indoor relative humidity (%)	37.2
Building Survey and Chemical Inventory Form Completed?		Photograph IDs	

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways

SSSV-7 located 48' south of front door



Comments: 11:29 AM - 11:31 purge

Flow controller 155 ml/min

(1)

ExxonMobil Chemical

MATERIAL SAFETY DATA SHEET

ExxonMobil Chemical Company

A Division of Exxon Mobil Corporation

DF-2000 FLUID

DATE PREPARED: JUN 16, 2000
MSDS NO.: 92842583

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: DF-2000 FLUID
CHEMICAL NAME:
Synthetic Aliphatic Hydrocarbon, Hydrotreated CAS 64742-48-9
CHEMICAL FAMILY:
Aliphatic Hydrocarbon
PRODUCT DESCRIPTION:
Clear colorless liquid.

CONTACT ADDRESS:
ExxonMobil Chemical Company
P.O. Box 3272, Houston, Texas 77253-3272

** EMERGENCY TELEPHONE NUMBERS: (24 Hours) **
** CHEMTREC (800) 424-9300 **
** ExxonMobil Chemical Company (800) 726-2015 **

NON EMERGENCY TELEPHONE NUMBERS : (8am-5pm M-F)
FOR HEALTH AND SAFETY INFORMATION CALL : (281) 870-6884
FOR GENERAL PRODUCT INFORMATION CALL : (281) 870-6000

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

This product is hazardous as defined in 29 CFR1910.1200.
OSHA HAZARD
Combustible

SECTION 3 HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

EYE CONTACT:
Slightly irritating but does not injure eye tissue.

SKIN CONTACT:
Low order of toxicity.
Frequent or prolonged contact may irritate and cause dermatitis.
Skin contact may aggravate an existing dermatitis condition.

INHALATION:
High vapor/aerosol concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects, including death.

INGESTION:
Small amounts of this product aspirated into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury, possibly progressing to death.
Minimal toxicity.

Continues on page 2

SECTION 4 FIRST AID MEASURES

EYE CONTACT:
Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

SKIN CONTACT:
Flush with large amounts of water; use soap if available.
Remove grossly contaminated clothing, including shoes, and launder before reuse.

INHALATION:
Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.

INGESTION:
If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

SECTION 5 FIRE-FIGHTING MEASURES

FLASH POINT:	147 Deg F, METHOD: TCC ASTM D56	NOTE: Typical
FLAMMABLE LIMITS:	LEL: 1.3 UEL: 8.8 @ 77 Deg F.	NOTE: Approximate
AUTOIGNITION TEMPERATURE:	640 Deg F. NOTE: Approxiamte	

GENERAL HAZARD
Combustible Liquid, can form combustible mixtures at temperatures at or above the flashpoint.
Static Discharge, material can accumulate static charges which can cause an incendiary electrical discharge .
"Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.
Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or properly disposed of.

FIRE FIGHTING
Use water spray to cool fire exposed surfaces and to protect personnel.
Isolate "fuel" supply from fire.
Use foam, dry chemical, or water spray to extinguish fire.
Avoid spraying water directly into storage containers due to danger of boilover.
This liquid is volatile and gives off invisible vapors. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS
No unusual

Continues on page 3

SECTION 6 ACCIDENTAL RELEASE MEASURES

LAND SPILL

Eliminate sources of ignition. Prevent additional discharge of material, if possible to do so without hazard. For small spills implement cleanup procedures; for large spills implement cleanup procedures and, if in public area, keep public away and advise authorities. Also, if this product is subject to CERCLA reporting (see Section 15 REGULATORY INFORMATION) notify the National Response Center.
Prevent liquid from entering sewers, watercourses, or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust.
Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent.
Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

WATER SPILL

Eliminate sources of ignition. Warn occupants and shipping in surrounding and downwind areas of fire and explosion hazard and request all to stay clear.
Remove from surface by skimming or with suitable adsorbents. If allowed by local authorities and environmental agencies, sinking and/or suitable dispersants may be used in non-confined waters.
Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

SECTION 7 STORAGE AND HANDLING

ELECTROSTATIC ACCUMULATION HAZARD:

Yes, use proper bonding and/or grounding procedure.
Additional information regarding safe handling of products with static accumulation potential can be ordered by contacting the American Petroleum Institute (API) for API Recommended Practice 2003, entitled "Protection Against Ignitions Arising Out of Static, Lighting, and Stray Currents" (American Petroleum Institute, 1220 L Street Northwest, Washington, DC 20005), or the National Fire Protection Association (NFPA) for NFPA 77 entitled "Static Electricity" (National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101).

STORAGE TEMPERATURE, °F:
Ambient

LOADING/UNLOADING TEMPERATURE, °F:
Ambient

STORAGE/TRANSPORT PRESSURE, mmHg:
Atmospheric

LOADING/UNLOADING VISCOSITY, cSt:
2.0

STORAGE AND HANDLING:

Keep container closed. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials.
Do NOT handle or store near an open flame, heat or other sources of ignition. Protect material from direct sunlight.
Material will accumulate static charges which may cause an electrical

Continues on page 4

spark (ignition source). Use proper bonding and/or grounding procedures. Do NOT pressurize, cut, heat, or weld containers. Empty product containers may contain product residue. Do NOT reuse empty containers without commercial cleaning or reconditioning.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE CONTROLS
The use of local exhaust ventilation is recommended to control process emissions near the source. Laboratory samples should be handled in a lab hood. Provide mechanical ventilation of confined spaces. See respiratory protection recommendations.

PERSONAL PROTECTION
For open systems where contact is likely, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.
Where contact may occur, wear safety glasses with side shields.
Where concentrations in air may exceed the limits given in this Section and engineering, work practice or other means of exposure reduction are not adequate, NIOSH/MSHA approved respirators may be necessary to prevent overexposure by inhalation.

WORKPLACE EXPOSURE GUIDELINES
ExxonMobil RECOMMENDS THE FOLLOWING OCCUPATIONAL EXPOSURE LIMITS:
a TWA of 1200 mg/m3 (171 ppm) based on total hydrocarbon.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

SPECIFIC GRAVITY, at °F:
0.77 at 60
SOLUBILITY IN WATER, wt. % at °F:
Less than 0.01 at 77
SP. GRAV. OF VAPOR, at 1 atm (Air=1):
5.90 Calculated
EVAPORATION RATE, n-Bu Acetate=1:
Less than 0.1
VAPOR PRESSURE, mmHg at °F:
1 at 68 Approximate
VISCOSITY OF LIQUID, cSt at °F:
2.1 at 77 Approximate
FREEZING/MELTING POINT, °F:
Less than -76
BOILING POINT, °F:
376 to 401

SECTION 10 STABILITY AND REACTIVITY

STABILITY:
Stable
CONDITIONS TO AVOID INSTABILITY:
Not Applicable
HAZARDOUS POLYMERIZATION:
Will not occur
CONDITIONS TO AVOID HAZARDOUS POLYMERIZATION:
Not Applicable

Continues on page 5

MATERIAL SAFETY DATA SHEET

ExxonMobil Chemical Company

A Division of Exxon Mobil Corporation

MATERIALS AND CONDITIONS TO AVOID INCOMPATIBILITY:
Strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS:
None

SECTION 11 TOXICOLOGICAL INFORMATION

Please refer to Section 3 for available information on potential health effects.

SECTION 12 ECOLOGICAL INFORMATION

No specific ecological data are available for this product. Please refer to Section 6 for information regarding accidental releases and Section 15 for regulatory reporting information.

SECTION 13 DISPOSAL CONSIDERATIONS

Please refer to Sections 5, 6, and 15 for disposal and regulatory information.

SECTION 14 TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (DOT):
DOT SHIPPING DESCRIPTION: PETROLEUM DISTILLATE, N.O.S., COMBUSTIBLE LIQUID, UN 1268, III
Note: In containers of 119 gallons capacity or less this product is not regulated by DOT.

SECTION 15 REGULATORY INFORMATION

TSCA:
This product is listed on the TSCA Inventory at CAS Registry Number 64742-48-9
Clean Water Act/Oil Pollution Act:
This product is classified as an oil under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Act of 1990. Discharge or spills which produce a visible sheen on either surface water, or in waterways/sewers which lead to surface water, must be reported to the National Response Center at 800-424-8802.
CERCLA:
If this product is accidentally spilled, it is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). We recommend you contact local authorities to determine if there may be other local reporting requirements.
SARA TITLE III:
Under the provisions of Title III, Sections 311/312 of the Superfund Amendments and Reauthorization Act, this product is classified into the following hazard categories: Fire.
This information may be subject to the provisions of the Community Right-to-Know Reporting Requirements (40 CFR 370) if threshold quantity criteria are met.

Continues on page 6

MATERIAL SAFETY DATA SHEET

ExxonMobil Chemical Company

A Division of Exxon Mobil Corporation

DF-2000 FLUID

SECTION 16 OTHER INFORMATION

NOTES:

Care must be taken to ensure garments cleaned with solvents are completely dry before being worn. Drycleaning solvent not totally removed from adsorbent clothing (e.g., shoulder pads, waist bands, etc.) that remains in contact with the skin for prolonged periods may cause skin irritation including redness, swelling and possibly blistering.

Contains approximately 10 ppm BHT as an antioxidant to protect product quality.

HAZARD RATING SYSTEMS:

This information is for people trained in:
National Paint & Coatings Association's (NPCA)
Hazardous Materials Identification System (HMIS)
National Fire Protection Association (NFPA 704)
Identification of the Fire Hazards of Materials

	NPCA-HMIS	NFPA 704
HEALTH	1	1
FLAMMABILITY	2	2
REACTIVITY	0	0

KEY
4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

REVISION SUMMARY:

Since April 1, 2000 this MSDS has been revised in Section(s):
8

REFERENCE NUMBER:
HDHA-C-25233

SUPERSEDES ISSUE DATE:
April 1, 2000

(3)

Material Safety Data Sheet

Date Prepared: 04-20-04 MSDS No. G151001-2

Section I Material Identification And Use

Product/Tradename: **HYDROCLENE P.O.G.**

NFPA Designation: Health 2 Flammability 2 Reactivity 0
0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Manufacturer's Name: Caled Chemical Emergency Telephone: (Chemtrec) 1-800-424-9300
Address: 26 Hanes Drive, Wayne, NJ 07470 Working Hours (973) 696-7575

Chemical Name: Mixture Chemical Family: Spot remover

Formula: Mixture Material Use: Stain Remover

Section II Hazardous Ingredients

Hazardous Ingredients	Cas Number	Approx. Percent	Exposure Limits	Other
2-butoxy ethanol	111-76 -2	10-15	25 PPM OSHA (PEL)TWA (SKIN) 20PPM ACGIH	ORAL LD 50 SKIN 530MG/KG DERMAL LD50
OSHA HAZ. COMBUSTIBLE COMPONENT: HYDROCARBON	64742-47-8	10-15	NO LISTING OSHA, ACGIH 200PPM TWA (SUPPLIER)	
OSHA HAZ. COMBUST. COMPONENT:HYDROCARBON	64742-48-9	10-30	171PPM BASED ON TOTAL HYDROCARBON SUPPLIER	

Section III Physical Data

Physical State: Liquid | Odor And Appearance: clear, pale yellow, mild solvent odor

Specific Gravity	Vapor Pressure(Mm)	Vapor Density(Air=1)	Ph
0.880	Nd	Nd	7.0 – 8.0

Evaporation Rate (Butyl Ace=1)	Boiling Point(F)	% Volatile(Vol)	Water Solubility
slower	ND	60	Dispersable

Section IV Fire And Explosion Hazard Data

Flash Point(F) Method: 150 F

Flammable Limits In Air % By Volume: Upper: Nd Lower: Nd

Extinquishing Media: Water /Fog Foam Carbon Dioxide Dry Chemical

HYDROCLENE P. O. G.

Special Fire Fighting Procedures:
Use Self Contained Breathing Apparatus Use water to cool containers.

Unusual Fire And Explosion Hazards: **NONE KNOWN.**

Section V Reactivity Data

Stability	Unstable	Conditions To Avoid:
	X Stable	None Known

Incompatibility (Materials To Avoid): Oxidizing Agents Metals

Hazardous Decomposition Products: Burning may produce carbon monoxide.

Hazardous Polymerization	May Occur	Conditions To Avoid
	X Will Not Occur	None Known

Section VI Health And Toxicological Data

Route Of Entry
Skin Contact: X Skin Absorption: Eye Contact: X
Inhalation Acute: X Inhalation Chronic: Ingestion: X

Effects Of Acute Exposure
INHALATION Headache, dizziness, nausea and loss of consciousness. Acutely toxic in high concentrations and can cause hemolysis, liver and kidney injury based on 2-butoxy ethanol, although this is unlikely due to the Small amounts in the formulation.
SKIN & EYES: May cause eye irritation and skin deffatting. 2-butoxy ethanol is absorbed through the skin To produce effects similar to inhalation.
INGESTION: vomiting, gastric upset and pain. 2-butoxy ethanol is moderately toxic by ingestion.

Effects Of Chronic Exposure: Preexisting eye, skin and lung disorder may be aggravated. 2-butoxy ethanol Has caused cell hemolysis, liver and kidney damage with overexposure in test animals.
Carcinogenicity, Reproductive, Teratogenicity, Mutagenicity
No Component Is Listed As A Carcinogen By Ntp, Iarc, Or Osha. Not mutagenic. 2-butoxy ethanol has shown Some lethality to animals fetuses in concentration well above the TLV. No Reproductive or teratogenic properties are known or expected.

EMERGENCY AND FIRST AID PROCEDURES:
Skin and Eyes: Remove contaminated clothing and flush affected areas with water. Get medical attention if irritation persits.
Inhalation: Remove to fresh air. .Apply artificial respiration if not breathing. Get medical attention
Ingestion: do not induce vomiting. Dilute with water or milk. Get medical attention.

HYDROCLENE P. O. G.

Section VII Spill or Leaks Information

Steps To Be Taken If Material Is Released Or Spilled:
If locally permitted small spills can be flushed with water. Large spills should be dammed or vacuumed Into a close drum for disposal. Do not allow to flow into open waterway or ground water.

Waste Disposal Methods: **In Accordance With Federal, State and Local Regulations.**

Section VIII Special Protection Information

Respiratory Protection (Specify): Self contained breathing apparatus at high vapor concentration.

Ventilation (Mechanical - General, Local, Special)
Mechanical-General: Use with adequate ventilation.

Gloves (Specify): Neoprene Eye (Specify): Eye Goggles

Other Protective Equipment: **Eye Wash Station and safety shower.**

Section IX Special Precautions

Precautions To Be Taken In Handling And Storing
Do not freeze. Keep container closed when not in use. Do not store near open flame. Avoid excessive contact with skin and eyes. Do not inhale mists or vapor. Wash after use.

Special Shipping Information
Dot: Not regulated
Un: Not regulated

Sara Title III, Section 313 Release Reporting And Other Covered Regulations
2-Butoxy Ethanol Is Listed Under Sara Title III, Section 313 Release Reporting.

Na = Not Applicable Nd = No Data Available Ne = Not Established < = Less Than > = Greater Than

Each Customer Is Encouraged To Study This MSDS Carefully To Become Aware Of And Understand The Associated Material Hazards. Proper Reference Works Should Be Consulted, As Necessary, To Use And Understand The Contained Data.

This MSDS Should Be Properly Routed To All Individuals Who Use Or May Come In Contact With This Product. Understand And Follow All Pertinent Employee And Community Right To Know Regulations. We Believe That The Statements, Technical Information And Recommendations Contained Herein Are Reliable, But Given Without Warranty Or Guarantee Of Any Kind, Express Or Implied, And We Assume No Responsibility For Any Loss, Damage, Or Expense, Direct Or Consequential, Arising From Their Use.

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Pyratex®
GENERAL USE: For professional drycleaning use only.
PRODUCT DESCRIPTION: Stain Removal Agent

MANUFACTURER
R. R. Street & Co. Inc.
184 Shuman Boulevard
Naperville, IL 60563
Phone: 800-323-7206

24 HR. EMERGENCY TELEPHONE NUMBERS
Medical Emergency: 800-228-5635
Transportation Emergency: 800-424-9300

2. COMPOSITION / INFORMATION ON INGREDIENTS

The specific identity of the component(s) of this product is withheld as a trade secret.

Chemical Name	Wt.%	CAS#	EINECS#
(trade secret #1)	-	-	-
(trade secret #2)	-	-	-
(trade secret #3)	-	-	-
(trade secret #4)	-	-	-

COMMENTS:
#1 = aliphatic carboxylic ester
#2 = glycol ether, <30%
#3 = aliphatic ketone, <15%

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS
EYES: Substance may cause substantial eye irritation and possible damage.
SKIN: May cause skin irritation.
SKIN ABSORPTION: May penetrate skin readily resulting in absorption of potentially harmful amounts.
INGESTION: Moderately toxic. May be absorbed and cause central nervous system depression; in extreme cases unconsciousness and death. May cause vomiting.
INHALATION: Extreme concentrations may cause unconsciousness or death.

SIGNS AND SYMPTOMS OF OVEREXPOSURE
EYES: Severe irritation.
SKIN: Irritation.
SKIN ABSORPTION: No data available.
INGESTION: Headache, dizziness, nausea, vomiting, fatigue and diarrhea; digestive tract irritation.
INHALATION: Headache, dizziness, nausea, narcosis and irritation of the respiratory tract.

ACUTE TOXICITY: If ingested, vomiting may occur; vomit may be aspirated into lungs causing chemical pneumonia.
CHRONIC: Prolonged or repeated contact may cause dermatitis.
CARCINOGENICITY: Not applicable.
MUTAGENICITY: Not applicable.

OTHER EFFECTS
REPRODUCTIVE EFFECTS: See section 11.
TERATOGENIC EFFECTS: Not applicable.

3. HAZARDS IDENTIFICATION (continued)

MEDICAL CONDITIONS AGGRAVATED: Pre-existing eye, skin and respiratory disorders.
ROUTES OF ENTRY: Inhalation and skin.
TARGET ORGAN STATEMENT: See section 11.
CANCER STATEMENT: Does not contain any substance(s) listed as carcinogenic.
SENSITIZATION: Not applicable.

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.
SKIN: Remove contaminated clothing. Wash with soap and water.
INGESTION: Get immediate medical attention. Do not induce vomiting unless instructed to do so by poison center or physician.
INHALATION: Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.
ADDITIONAL INFORMATION: After emergency actions, call the emergency medical information number on page 1 or a physician immediately.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: 40°C (104°F)COC
FLAMMABLE LIMITS: 1-2 to 7.5-15
AUTOIGNITION TEMPERATURE: 244°C (471°F) to 449°C (840°F)
FLAMMABLE CLASS: NFPA Class IC
EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, foam, water spray or fog.
HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, carbon monoxide.
FIRE FIGHTING EQUIPMENT: As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Absorb the liquid and scrub the area with detergent and water.
LARGE SPILL: Extinguish all ignition sources. Avoid breathing vapor. Contain spill. Clean up spills immediately with absorbent material, observing precautions in the Protective Equipment section. Place absorbed material in closed containers for disposal. Do not flush to sewer. Avoid contamination of ground and surface waters.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Keep away from heat, sparks and flame.
HANDLING: Follow all MSDS/label precautions even after container is emptied because it may retain product residues.
STORAGE: Store in labeled, tightly sealed containers in a cool, well ventilated area.
SHELF LIFE: 1 year, minimum.
ELECTROSTATIC ACCUMULATION HAZARD: Ground and bond containers when transferring material.

(SEE NEXT PAGE FOR SECTION 8.)

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:
OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		Supplier OEL	
		ppm	mg/m³	ppm	mg/m³	ppm	mg/m³
(trade secret #1)	TWA	150		150			
	STEL	NE[1]		200			
(trade secret #2)	TWA	50*[2]		20			
	STEL	NE		NE			
(trade secret #3)	TWA	100		50			
	STEL	NE		75			
(trade secret #4)	TWA	NE		NE			
	STEL	NE		C 25			

OSHA TABLE COMMENTS: **1.** NE=Not established. **2.** * = Skin
The specific identity of the component(s) of this product is withheld as a trade secret.

ENGINEERING CONTROLS: Local exhaust may be required to control vapor concentration.

PERSONAL PROTECTIVE EQUIPMENT
EYES AND FACE: Wear safety glasses with side shields (or goggles) and a face shield.
SKIN: Wear butyl or Barrier™ gloves.
RESPIRATORY: NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.
PROTECTIVE CLOTHING: Where contact is likely, wear chemical resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield.
WORK HYGIENIC PRACTICES: Wash thoroughly after handling. Do not smoke in presence of vapor. Do not eat or drink in work area.
OTHER USE PRECAUTIONS: Have eye wash station available. Do not wear contact lenses without eye protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid.
ODOR: Mild.
APPEARANCE: Clear.
COLOR: Light yellow to amber.
pH: 8
PERCENT VOLATILE: 72
VAPOR PRESSURE: ~8 mm Hg at 20°C
VAPOR DENSITY: ~4 (Air=1)
BOILING POINT: ~110°C (230°F)
FREEZING POINT: <0°C (32°F)
SOLUBILITY IN WATER: Dispersible.
EVAPORATION RATE: ~0.6 Butyl acetate = 1
SPECIFIC GRAVITY: 0.91
COEFF. OIL/WATER: No data available.
ODOR THRESHOLD: 0.1 ppm

COMMENTS:
PERCENT VOLATILE: Approximate.
BOILING POINT: Initial boiling point.

10. STABILITY AND REACTIVITY

STABLE: YES
HAZARDOUS POLYMERIZATION: NO
CONDITIONS TO AVOID: None.
STABILITY: Stable.
POLYMERIZATION: Will not occur.
INCOMPATIBLE MATERIALS: Oxidizing materials.

11. TOXICOLOGICAL INFORMATION

ACUTE
ORAL LD_{50}: ~1600 mg/kg (rat)
INHALATION LC_{50}: ~450-6000 ppm (rat)
TARGET ORGANS: A component of this product has caused hemolysis of blood in rats; not considered relevant to humans. Rats exposed to 1000 ppm of a component of this product for 90 days showed evidence of kidney damage; not considered relevant to humans.

CARCINOGENICITY
IARC: Not listed as a carcinogen.
NTP: Not listed as a carcinogen.
OSHA: Not listed as a carcinogen.

SYNERGISTIC MATERIALS: Possibly haloalkanes.
REPRODUCTIVE EFFECTS: A component of this product showed some fetotoxicity in lab animals exposed to high concentrations.
GENERAL COMMENTS: Refer to Section 3 for additional information on potential health effects.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: The major components have low persistence in the environment and have low aquatic toxicity.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Recovered liquids may be sent to a licensed reclaimer or incineration facility. Contaminated material must be disposed of in a permitted waste management facility. Consult federal, state and local authorities for approved procedures.
EMPTY CONTAINER: Do not cut or weld full or empty drums.
RCRA/EPA WASTE INFORMATION: Contains material(s) listed by RCRA as a hazardous waste.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)
PROPER SHIPPING NAME: Flammable Liquid, NOS
TECHNICAL NAME: Aliphatic carboxylic ester, Aliphatic ketone
PRIMARY HAZARD CLASS/DIVISION: 3
UN/NA NUMBER: UN1993
PACKING GROUP: III
LABEL: Cases of 6 one-gallon cans and individual one-gallon cartons are Limited Quantities. No Flammable Liquid (Class 3) label required when shipped by ground.

CANADA TRANSPORT OF DANGEROUS GOODS
PROPER SHIPPING NAME: Flammable Liquid, NOS
PRIMARY HAZARD CLASS/DIVISION: 3
UN/NA NUMBER: UN1993
PACKING GROUP: III

14. TRANSPORT INFORMATION (continued)

AIR (ICAO/IATA)
PROPER SHIPPING NAME: Flammable Liquid, NOS
PRIMARY HAZARD CLASS/DIVISION: 3
UN/NA NUMBER: UN1993
PACKING GROUP: III
PLACARDS: Consult applicable regulations governing air shipments.
LABEL: Flammable Liquid (Class 3) label required when shipped by air.
IATA NOTE: Consult applicable regulations on packaging requirements and quantity limitations.

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)
311/312 HAZARD CATEGORIES: FIRE: YES **PRESSURE GENERATING:** NO **REACTIVITY:** NO
ACUTE: YES **CHRONIC:** YES
313 REPORTABLE INGREDIENTS: Ingredients 2 and 3 are reportable.

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)
CERCLA RQ: One or more ingredients has an RQ of 5000 lbs.
REPORTABLE SPILL QUANTITY: > 1000 gals
RCRA STATUS: See section 13.

STATE REGULATIONS
MASSACHUSETTS: Contains one or more substances named on the Massachusetts Substance List. Code # 99-013-012.
CALIFORNIA: PROPOSITION 65 STATEMENT: Not applicable.

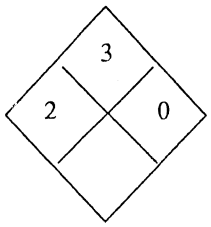
CANADA
WHMIS CLASS: Class B, Division 2 and Class D, Division 2

MEXICO
Regulated for transportation.

16. OTHER INFORMATION

HMIS RATINGS:	
HEALTH:	2
FLAMMABILITY:	3
REACTIVITY:	0
PERSONAL PROTECTION:	H

NFPA RATINGS:



MATERIAL SAFETY DATA SHEET

Date-Issued: 08/04/2000
MSDS Ref. No: P-3
Date-Revised: 08/08/2000
Revision No: New MSDS

Picrin

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Picrin
GENERAL USE: For professional drycleaning use only.
PRODUCT DESCRIPTION: Stain Removal Agent
PRODUCT CODE: PIC-US

MANUFACTURER
R. R. Street & Co. Inc.
184 Shuman Boulevard
Naperville, IL 60563
Product Stewardship: 800-323-7206
Transportation: 800-424-9300

24 HR. EMERGENCY TELEPHONE NUMBERS
Emergency Phone: 800-228-5635

2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS#	EINECS#
Trichloroethylene	~100	79-01-6	

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

EYES: Substance may cause substantial eye irritation and possible damage.

SKIN: May cause skin irritation.

SKIN ABSORPTION: Absorption through skin is possible but not a likely route of significant exposure.

INGESTION: Low to moderate toxicity. May cause vomiting. Can cause adverse health effects as described under INHALATION.

INHALATION: High concentrations can cause central nervous system depression, irregular heartbeat, cardiac arrest, unconsciousness or death.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Irritation and pain.

SKIN: Irritation.

SKIN ABSORPTION: No data available.

INGESTION: Nausea and vomiting.

INHALATION: Headache, nausea, vomiting, dizziness, vertigo, fatigue, lightheadedness and coughing.

ACUTE TOXICITY:
If ingested, vomiting may occur; vomit may be aspirated into lungs causing chemical pneumonia.
CHRONIC:
Exposure can cause intolerance to ethyl alcohol, with small quantities causing inebriation and skin blotches. Prolonged or repeated contact may cause dermatitis.
CARCINOGENICITY:
See section 11.
MUTAGENICITY:
See section 11.
REPRODUCTIVE TOXICITY
REPRODUCTIVE EFFECTS: See section 11.
TERATOGENIC EFFECTS: Not applicable.
MEDICAL CONDITIONS AGGRAVATED: Alcoholism, liver disease, rhythm disorders of the heart, neuritis.
ROUTES OF ENTRY: Inhalation and skin.
TARGET ORGAN STATEMENT: See section 11.
CANCER STATEMENT: See section 11.
SENSITIZATION: Not applicable.

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.
SKIN: Remove contaminated clothing. Wash with soap and water.
INGESTION: Get immediate medical attention. Do not induce vomiting unless instructed to do so by poison center or physician.
INHALATION: Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.
ADDITIONAL INFORMATION: After emergency actions, call the emergency medical information number on page 1 or a physician immediately.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: None.
AUTOIGNITION TEMPERATURE: Not applicable.
FLAMMABLE CLASS: Not applicable.
EXTINGUISHING MEDIA: Not applicable.
HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, carbon monoxide.
OTHER CONSIDERATIONS: Concentrated vapor can be ignited by high-intensity ignition source.
FIRE FIGHTING EQUIPMENT: As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.
FLASHPOINT: (footnote) TCC
HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride, phosgene and chlorine.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL:

Absorb the liquid and scrub the area with detergent and water.

LARGE SPILL:

Contain spill. Avoid breathing vapor. Clean up spills immediately with absorbent material, observing precautions in the Protective Equipment section. Place absorbed material in closed containers for disposal. Do not flush to sewer. Avoid contamination of ground and surface waters.

---

7. HANDLING AND STORAGE

HANDLING:

Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

STORAGE:

Store in labeled, tightly sealed containers in a cool, dry, well ventilated area.

SHELF LIFE: 1 year, minimum.

---

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		Supplier OEL	
		ppm	mg/m³	ppm	mg/m³	ppm	mg/m³
Trichloroethylene	TWA	100		50*[1]			
	STEL	200[2]		100			

OSHA TABLE COMMENTS:

1. * = A5
2. Ceiling concentration. 300 ppm peak concentration allowed once in any 2 hour period.

ENGINEERING CONTROLS: Local exhaust may be required to control vapor concentration.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear safety glasses with side shields (or goggles) and a face shield.

SKIN: Wear Viton(r), PVA, or Barrier(tm) gloves.

RESPIRATORY: NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

PROTECTIVE CLOTHING: Where contact is likely, wear chemical resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield.

WORK HYGIENIC PRACTICES: Wash thoroughly after handling. Do not smoke in presence of vapor. Do not eat or drink in work area.

OTHER USE PRECAUTIONS: Have eye wash station available. Do not wear contact lenses without eye protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid.

ODOR: Ethereal.

APPEARANCE: Clear.

COLOR: Colorless.

pH: Not applicable.

PERCENT VOLATILE: 100

VAPOR PRESSURE: 58 mm Hg at 20°C

VAPOR DENSITY: 4.5 (Air=1)

BOILING POINT: 87°C (188°F)

FREEZING POINT: -85°C (-121°F)

SOLUBILITY IN WATER: Negligible.

EVAPORATION RATE: 4.5 Butyl acetate = 1

SPECIFIC GRAVITY: 1.45

COEFF. OIL/WATER: 2.42

ODOR THRESHOLD: 20 ppm

10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: NO

CONDITIONS TO AVOID: Contact with open flame, electric arcs, other hot surfaces which can cause thermal decomposition.

STABILITY: Stable.

POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride, phosgene and chlorine.

INCOMPATIBLE MATERIALS: Strong alkalies, oxidizers, lithium, aluminum, barium, magnesium, titanium.

---

11. TOXICOLOGICAL INFORMATION

ACUTE

DERMAL LD_{50}: >10000 mg/kg (rabbit)

ORAL LD_{50}: >5000 mg/kg (rat)

INHALATION LC_{50}: >2000 ppm (rat)

TARGET ORGANS: Chronic overexposure to trichloroethylene has caused toxic effects in the liver, lymphatic (one species), kidney and cardiovascular system of experimental animals.

SUBCHRONIC:

Reports have been published associating increased incidences of scleroderma (systemic sclerosis) with exposures to trichloroethylene.

CARCINOGENICITY:

IARC: Trichloroethylene is classified as 2A.

NTP: Trichloroethylene is on the NTP list.

OSHA: Not listed as a carcinogen.

MUTAGENICITY: Evidence for trichloroethylene is equivocal.

SYNERGISTIC MATERIALS: Consumption of alcohol may increase the potential for development of toxic effects resulting from exposure to trichloroethylene.

REPRODUCTIVE EFFECTS: Some transient fetal effects from inhalation of trichloroethylene have been observed in rats.

GENERAL COMMENTS: Refer to Section 3 for additional information on potential health effects.

---

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: Trichloroethylene has moderate persistence in the environment.

---

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Recovered liquids may be sent to a licensed reclaimer or incineration facility. Contaminated material must be disposed of in a permitted waste management facility. Consult federal, state and local authorities for approved procedures.

EMPTY CONTAINER: Do not cut or weld full or empty drums.

RCRA/EPA WASTE INFORMATION: Contains material(s) listed by RCRA as a hazardous waste.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Trichloroethylene

PRIMARY HAZARD CLASS/DIVISION: 6.1

UN/NA NUMBER: UN1710

PACKING GROUP: III

REPORTABLE QUANTITY (RQ) UNDER CERCLA: 8 gal

OTHER SHIPPING INFORMATION: One gallon containers in original packaging are labeled, marked, and approved for ground shipments only. Drums of this product contain a Reportable Quantity of trichloroethylene.

CANADA TRANSPORT OF DANGEROUS GOODS

PROPER SHIPPING NAME: Trichloroethylene

PRIMARY HAZARD CLASS/DIVISION: 6.1

UN/NA NUMBER: UN1710

PACKING GROUP: III

AIR (ICAO/IATA)

PROPER SHIPPING NAME: Trichloroethylene

PRIMARY HAZARD CLASS/DIVISION: 6.1

UN/NA NUMBER: UN1710

PACKING GROUP: III

IATA NOTE: One gallon containers when in original packaging are not approved for air shipment. Consult IATA for quantity limitations.

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES:

FIRE: NO **PRESSURE GENERATING:** NO **REACTIVITY:** NO **ACUTE:** YES **CHRONIC:** YES

313 REPORTABLE INGREDIENTS: Trichloroethylene is reportable.

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA RQ: Trichloroethylene has an RQ of 100 lbs.

REPORTABLE SPILL QUANTITY: 8 gals

RCRA STATUS: See section 13.

CANADA

WHMIS CLASS: Class D, Division 2

MEXICO

Regulated for transportation.

STATE REGULATIONS

MASSACHUSETTS

Contains one or more substances named on the Massachusetts Substance List.

CALIFORNIA

PROPOSITION 65 STATEMENT: Trichloroethylene is on Proposition 65 list.

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16. OTHER INFORMATION

REVISION SUMMARY

New MSDS

NFPA CODES

HEALTH: 2 FIRE: 1 REACTIVITY: 0

HMIS CODES

HEALTH: 3 FIRE: 1 REACTIVITY: 0 PROTECTION: H

(2)

MATERIAL SAFETY DATA SHEET

identity	RustGo®

SECTION I

manufacturer A. L. Wilson Chemical Co. 1050 Harrison Ave. P. O. Box 207 Kearny, NJ 07032	emergency telephone number 800-424-9300
	telephone number for information 201-997-3300
	date prepared April 9, 1999

SECTION II - IMPORTANT INGREDIENTS/IDENTITY INFORMATION

important components	chemical identity	cas#	%	tlv
HYDROFLUORIC ACID *	HF	7664-39-3	12% approx.	3.0 PPM ACGIH
AMMONIUM BIFLUORIDE	NH_4HF_2	1341-49-7	16% approx.	2.4Mg/M³
WATER	H_2O	7732-18-5		
* Subject to SARA, Title III, Section 313 and 40 CFR 372.				

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

boiling point ND	specific gravity (H_2O=1) 1.1 approx.
vapor pressure (mm Hg) ND	melting point NA
vapor density (air=1) ND	evaporation rate (butyl acetate=1) ND
solubility in water 100%	
appearance and odor colorless liquid, sharp odor	

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

flash point NA (method used)	flammable limits NA
extinguishing media water or carbon dioxide "CO_2" for fires in area	
special fire fighting procedures NA	
unusual fire and explosion hazards NA	

SECTION V - REACTIVITY DATA

stability stable	conditions to avoid Avoid contact with strong alkalis, metals or high temperature.
incompatibility (materials to avoid) strong alkalis, metals or other material	
hazardous decomposition products With metals can release potentially dangerous hydrogen gas. At decomposition emits highly corrosive fluoride fumes.	
hazardous polymerization will not occur	

See Page 2 for more information.

SECTION VI - HEALTH HAZARD DATA

effects of overexposure

Eyes: May cause permanent damage.

Skin: May cause severe burns which may not be immediately painful or visible, and may penetrate skin and damage underlying tissue.

Ingestion: May cause throat burns and severe swelling restricting breathing.

Inhalation: Concentration of "F" vapors of 2Mg/M³ or more may cause damage to lungs, respiratory system and pulmonary edema.

first aid
In each case of overexposure, after first aid treatment, see a physician as soon as possible thereafter.

Eyes: Flush immediately with large quantities of clean cool water for at least 15 minutes. (Hold eyelids apart if necessary.)

Skin: Flush immediately with large quantities of water. (Shower if available.) Remove contaminated clothing.

Ingestion: Do not induce vomiting. Immediately drink large quantity of milk or water with added milk of magnesia.

Inhalation: Immediately remove victim from source of exposure.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

steps to be taken in case material is released or spilled
Cover area with sodium bicarbonate to neutralize acid. Scoop up and dispose of as below.

waste disposal method
Dispose of in accordance with federal, state and local regulations.

precautions to be taken in handling and storing Do not get in eyes, on skin or on clothing. Do not breathe vapor. Wash thoroughly after handling.

other precautions
Do not use if pregnant.

SECTION VIII - CONTROL MEASURES

respiratory protection Above 20 ppm of "F" wear OSHA permissible gas mask or cartridge.	ventilation local exhaust
protective gloves PVC or neoprene	eye protection chemical splash goggles
other protective clothing or equipment rubber apron	
work/hygienic practices Wash thoroughly after handling. Do not smoke, eat or drink in work area.	

NA = Not Applicable
ND = Not Determined

See Page 1 for more information.

(2)

MATERIAL SAFETY DATA SHEET

PRODUCT AMYL ACETATE

ADCO INC.

NFPA HAZARD RATINGS*

Health	1	Slight health hazard
Fire	3	Highly Flammable
Reactivity	0	Nonreactive

SECTION 1: PRODUCT INFORMATION

Manufacturer: ADCO, Inc., 900 W. Main, Sedalia, MO 65301 (660) 826-3300
EMERGENCY TELEPHONE NUMBERS: CHEMTREC (800) 424-9300 (24 HRS 7 DAYS A WEEK); ADCO (800) 821-7556 (8-5 M-F)
Intended Product Use: Stain removal agent for drycleaning and laundry
Synonyms: Pentyl acetate, Banana oil

SECTION 2: HAZARDOUS INGREDIENTS

Chemical Name	%	CAS #	OSHA PEL	LD 50
Amyl acetate	99-100	628-63-7	100 ppm TWA	oral: 6500 mg/kg (rat)

SECTION 3: PHYSICAL DATA

Appearance: Clear, colorless liquid
Odor: Banana
Specific Gravity (20° C): 0.876
pH (Water Solution): No data

Boiling Point: 288°F
Solubility in Water: 0.2 wt. %
Vapor Pressure (mm Hg): 4 @ 20°C
Vapor Density: Heavier than air

SECTION 4: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method)(°F): 100 (TOC)
Upper Flammable Limit: 7.1
Lower Flammable Limit: 1.5
Extinguishing Media: Foam, water fog, carbon dioxide or dry chemical
Special Fire Fighting Procedures: Direct water stream may disperse products producing a floating fire hazard.

Unusual Fire and Explosion Hazards: Vapors are heavier than air and may travel along ground to a source of ignition.

SECTION 5: REACTIVITY DATA

Stability: Stable
Conditions to Avoid: Excessive Heat

Incompatibility (materials to avoid): Strong acids, strong alkalis
Hazardous Decomposition Products: None
Hazardous Polymerization: Will not occur

SECTION 6: HEALTH HAZARD DATA

Toxicity (Estimated): Low

Effects of Overexposure
Acute: Eye and skin irritation. Excessive inhalation of vapors can cause nasal and respiratory irritation and central nervous system effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness. Swallowing can cause gastrointestinal irritation, nausea, vomiting and diarrhea
Chronic: No adverse effects anticipated from available information. However, liver abnormalities, lung damage, spleen damage and kidney damage have been reported on massive overexposure of laboratory animals.

Carcinogenicity: None of the ingredients in this product have been identified as a carcinogen or probable carcinogen by ACGIH, IARC, or OSHA

*Hazard ratings and other information are based on latest available information from tests on product or ingredients of mixtures. The data and evaluations are accurate to the best of ADCO's knowledge. No guarantee or liability is expressed or implied.

EXPOSURE LIMITS	IRRITANCY OF PRODUCT	SENSITIZATION TO PRODUCT	CARCINOGENICITY
100 ppm TWA	Mild eye and skin	None reported	No components are listed by ACGIH, IARC or OSHA
TERATOGENICITY	**REPRODUCTIVE TOXICITY**	**MUTAGENICITY**	**SYNERGISTIC PRODUCTS**
No effects reported	No effects reported	None reported	None reported

Based on known toxicity of components. No test data available on mixture.

SECTION 7: PREVENTATIVE MEASURES

SPECIAL PROTECTION INFORMATION

Respiratory Protection: None required when used as directed with adequate ventilation. When cleaning up large spills in confined areas, self-contained breathing apparatus is recommended.

Ventilation: Local exhaust at work station recommended.

Protective Gloves: Ordinarily not needed. Use rubber gloves when contact is prolonged or frequent.

Eye Protection: Use goggles or face mask if splashing is likely.

Other protection equipment ordinarily not needed. Availability of eye washes and adequate ventilation in work areas recommended.

STORAGE AND HANDLING: Store in closed containers away from any source of ignition. When transferring or using product, provide adequate ventilation. Keep open flames, hot surface and other ignition sources away. Metal containers should be grounded during transfer.

SPILL OR LEAK PROCEDURES: Small spill - absorb on absorbent material and transfer to fume hood. Large spills - eliminate sources of ignition, dam to prevent spread and entry to drains. Pump or vacuum to clean container for recovery or absorb on inert material for disposal.

WASTE DISPOSAL METHOD: Absorb on sawdust or similar absorbent. Contaminated absorbent can then be sent to a landfill as nonhazardous waste. Containers: Empty containers should be washed and/or purged with air before reuse or disposal to prevent fire or explosive hazard.

RECOMMENDED PRECAUTIONARY LABELING:

CAUTION: FLAMMABLE - Keep away from heat and open flames. Use with adequate ventilation. Avoid prolonged contact with skin and eyes. May cause irritation. Harmful if swallowed.

FIRST AID: Remove person overcome by vapors to fresh air. Flush eye for 15 minutes with water. Wash off skin with soap and water. If swallowed, induce vomiting. Call physician.

KEEP OUT OF REACH OF CHILDREN. DO NOT TAKE INTERNALLY.

This product is intended for professional use only by trained personnel.

SECTION 8: FIRST AID

Inhalation: Remove person overcome by vapors to fresh air. Give oxygen or respiration if needed.

Eyes: Flush eyes with water for 15 minutes.

Skin: Wash off skin with soap and water.

Ingestion: If swallowed, induce vomiting, after having conscious victim drink two glasses of water.

IF SYMPTOMS PERSIST, SEEK MEDICAL ASSISTANCE.

SECTION 9: SARA TITLE III

NOTE: This product does contain some components which are under the reporting requirements of SARA Title III, Section 313. If you are required to report discharges using Form R, SARA Title III Section 313, information is available on amounts of reportable components.

SECTION 10: PREPARATION DATE

This information is provided for guidance only based on information we have compiled. No guarantee of accuracy or completeness is expressed or implied.

ADCO RESEARCH DEPARTMENT

Prepared by: Julie D. Jones

Date: March 8, 2000

Replaces MSDS of: July 21, 1992

ARCADIS
Infrastructure, environment, buildings

Imagine the result

Former Dangman Park MGP Site

Data Usability Summary Report

BROOKLYN, NEW YORK

Volatile Analyses

SDG# L1002703

Analyses Performed By:
Alpha Analytical
Mansfield, Massachusetts

Report: #11760R
Review Level: Tier III
Project: B0036704.0000.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # L1002703 for samples collected in association with the Former Dangman Park 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. 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
AA-1	L1002703-01	Air	2/22/2010		X				
IA-1	L1002703-02	Air	2/22/2010		X				
IA-7	L1002703-03	Air	2/22/2010		X				
IA-6	L1002703-04	Air	2/22/2010		X				
IA-3	L1002703-05	Air	2/22/2010		X				
IA-5	L1002703-06	Air	2/22/2010		X				
IA-4	L1002703-07	Air	2/22/2010		X				
IA-2	L1002703-08	Air	2/22/2010		X				
DUP022210	L1002703-09	Air	2/22/2010	IA-2	X				

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Sample receipt condition		X		X	
Requested analyses and sample results		X		X	
Collection Technique (grab, composite, etc.)		X		X	
Methods of analysis		X		X	
Reporting limits		X		X	
Sample collection date		X		X	
Laboratory sample received date		X		X	
Sample preservation verification (as applicable)		X		X	
Sample preparation/extraction/analysis dates		X		X	
Fully executed Chain-of-Custody (COC) form completed		X		X	
Narrative summary of QA or sample problems provided		X		X	
Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

INTRODUCTION

Analyses were performed according to United States 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 of October 2006, New York State DEC Analytical Method ASP 2005 TO-15 (QA/QC Criteria R9 TO-15) and NYSDEC Modifications to R9 TO-15 QA/QC Criteria February 2008.

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

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

Sample Locations	Return Pressure/Vacuum Reading (“of Hg)
DUP022210	-2.6

Sample results associated with sample locations analyzed by analytical method TO-15 were qualified, as specified in the table below.

Criteria	Detected Compounds	Non-detect Compounds
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 reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Several sample locations were 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.

Mass spectrometer performance was acceptable.

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 standards must exhibit a %RSD less than the control limit (30%) and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (30%) and 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/Continuing	Compound	Criteria
All sample locations associated with this SDG	ICV %RSD	Iso-Propyl alcohol	33.8%

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 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., ketenes, 1,4-dioxane, etc.)

5. 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% or less than 40% of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

6. 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%. The relative percent difference (RPD) between the LCS recoveries must exhibit an RPD within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for air matrices is applied when the criteria above is true. 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 three times the RL is applied for air matrices.

The laboratory duplicates exhibited acceptable results.

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 100% for air matrices 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 three times the RL is applied for air matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
IA-2/DUP022210	2-Butanone	1.64	1.42	14.3 %
	4-Methyl-2-pentanone	0.261	0.221	AC
	Acetone	9.63	7.82	20.7 %
	Benzene	0.64	0.58	AC
	Chloromethane	0.675	0.562	AC
	Dichlorodifluoromethane	0.624	0.609	AC
	Ethylbenzene	0.214	0.202	AC

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Heptane	0.251	0.249	AC
	iso-Propyl Alcohol	6.33	5.71	10.2 %
	n-Hexane	0.531	0.512	AC
	o-Xylene	0.201	0.2	AC
	p/m-Xylene	0.491	0.446	AC
	tert-Butyl Alcohol	0.227	0.236	AC
	Tetrachloroethene	0.307	0.298	AC
	Toluene	2.52	2.5	AC
	Trichlorofluoromethane	0.3	0.271	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

9. Compound Identification

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

All identified compounds met the specified criteria.

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; TO-15	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Canister return pressure/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
Matrix Spike (MS)					X
Matrix Spike Duplicate(MSD)					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (%D)		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	

VOCs; TO-15	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
D. Transcription/calculation errors present				X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

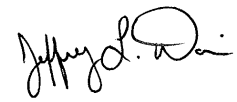
%RSD Percent relative difference
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	PCB/PEST /HERB	MET	MISC	
L1002703	2/22/2010	TO-15	AA-1	Air	No	--	--	--	--	VOC – ICV %RSD
L1002703	2/22/2010	TO-15	IA-1	Air	No	--	--	--	--	VOC – ICV %RSD
L1002703	2/22/2010	TO-15	IA-7	Air	No	--	--	--	--	VOC – ICV %RSD
L1002703	2/22/2010	TO-15	IA-6	Air	No	--	--	--	--	VOC – ICV %RSD
L1002703	2/22/2010	TO-15	IA-3	Air	No	--	--	--	--	VOC – ICV %RSD
L1002703	2/22/2010	TO-15	IA-5	Air	No	--	--	--	--	VOC – ICV %RSD
L1002703	2/22/2010	TO-15	IA-4	Air	No	--	--	--	--	VOC – ICV %RSD
L1002703	2/22/2010	TO-15	IA-2	Air	No	--	--	--	--	VOC – ICV %RSD
L1002703	2/22/2010	TO-15	DUP022210	Air	No	--	--	--	--	VOC – Canister return pressure, ICV %RSD

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: Jeffrey L. Davin

SIGNATURE: 

DATE: March 11, 2010

PEER REVIEW BY: Dennis Capria

DATE: March 17, 2010

CORRECTED SAMPLE ANALYSIS DATA SHEETS AND COCs

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-01
Client ID: AA-1
Sample Location: BROOKLYN, NY
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 02/27/10 14:30
Analyst: BS

Date Collected: 02/22/10 15:21
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	0.200	ND	1.09		1
1,1,2,2-Tetrachloroethane	ND	0.200	ND	1.37		1
1,1,2-Trichloroethane	ND	0.200	ND	1.09		1
1,1-Dichloroethane	ND	0.200	ND	0.809		1
1,1-Dichloroethene	ND	0.200	ND	0.792		1
1,2,3-Trimethylbenzene	ND	0.200	ND	0.983		1
1,2,4-Trichlorobenzene	ND	0.200	ND	1.48		1
1,2,4-Trimethylbenzene	ND	0.200	ND	0.982		1
1,2,4,5-Tetramethylbenzene	ND	2.50	ND	13.7		1
1,2-Dibromoethane	ND	0.200	ND	1.54		1
1,2-Dichlorobenzene	ND	0.200	ND	1.20		1
1,2-Dichloroethane	ND	0.200	ND	0.809		1
1,2-Dichloropropane	ND	0.200	ND	0.924		1
1,3,5-Trimethylbenzene	ND	0.200	ND	0.982		1
1,3-Butadiene	ND	0.200	ND	0.442		1
1,3-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dioxane	ND	0.200	ND	0.720		1
2,2,4-Trimethylpentane	ND	0.200	ND	0.934		1
2-Butanone	0.236	0.200	0.695	0.589		1
o-Chlorotoluene	ND	0.200	ND	1.03		1
2-Hexanone	ND	0.200	ND	0.819		1
3-Chloropropene	ND	0.200	ND	0.626		1
4-Ethyltoluene	ND	0.200	ND	0.982		1
Acetone	1.89	1.00	4.48	2.37		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-01
Client ID: AA-1
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 15:21
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	0.581	0.200	1.85	0.638		1
Bromodichloromethane	ND	0.200	ND	1.34		1
Bromoform	ND	0.200	ND	2.06		1
Bromomethane	ND	0.200	ND	0.776		1
Carbon disulfide	ND	0.200	ND	0.622		1
Carbon tetrachloride	ND	0.200	ND	1.26		1
Chlorobenzene	ND	0.200	ND	0.920		1
Chloroethane	ND	0.200	ND	0.527		1
Chloroform	ND	0.200	ND	0.976		1
Chloromethane	0.572	0.200	1.18	0.413		1
cis-1,2-Dichloroethene	ND	0.200	ND	0.792		1
cis-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Cyclohexane	ND	0.200	ND	0.688		1
Dibromochloromethane	ND	0.200	ND	1.70		1
Dichlorodifluoromethane	0.534	0.200	2.64	0.988		1
Ethylbenzene	ND	0.200	ND	0.868		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	ND	1.53		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	ND	1.40		1
Heptane	ND	0.200	ND	0.819		1
Hexachlorobutadiene	ND	0.200	ND	2.13		1
n-Hexane	0.257	0.200	0.905	0.704		1
iso-Propyl Alcohol	0.645	0.500	1.58	1.23	J	1
Methylene chloride	ND	0.500	ND	1.74		1
4-Methyl-2-pentanone	ND	0.200	ND	0.819		1
Methyl tert butyl ether	ND	0.200	ND	0.720		1
p/m-Xylene	0.371	0.200	1.61	0.868		1
o-Xylene	ND	0.200	ND	0.868		1
Naphthalene	ND	0.200	ND	1.05		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-01
Client ID: AA-1
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 15:21
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	0.200	ND	0.851		1
tert-Butyl Alcohol	ND	0.200	ND	0.606		1
Tetrachloroethene	0.316	0.200	2.14	1.36		1
Thiophene	ND	0.200	ND	0.688		1
Toluene	0.977	0.200	3.68	0.753		1
trans-1,2-Dichloroethene	ND	0.200	ND	0.792		1
trans-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Trichloroethene	ND	0.200	ND	1.07		1
Trichlorofluoromethane	0.239	0.200	1.34	1.12		1
Vinyl bromide	ND	0.200	ND	0.874		1
Vinyl chloride	ND	0.200	ND	0.511		1
Indane	ND	0.200	ND	0.967		1
Indene	ND	0.200	ND	0.950		1
1-Methylnaphthalene	ND	2.50	ND	14.5		1
2-Methylnaphthalene	ND	2.50	ND	14.5		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-02
Client ID: IA-1
Sample Location: BROOKLYN, NY
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 02/27/10 15:08
Analyst: BS

Date Collected: 02/22/10 15:00
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	0.200	ND	1.09		1
1,1,2,2-Tetrachloroethane	ND	0.200	ND	1.37		1
1,1,2-Trichloroethane	ND	0.200	ND	1.09		1
1,1-Dichloroethane	ND	0.200	ND	0.809		1
1,1-Dichloroethene	ND	0.200	ND	0.792		1
1,2,3-Trimethylbenzene	ND	0.200	ND	0.983		1
1,2,4-Trichlorobenzene	ND	0.200	ND	1.48		1
1,2,4-Trimethylbenzene	ND	0.200	ND	0.982		1
1,2,4,5-Tetramethylbenzene	ND	2.50	ND	13.7		1
1,2-Dibromoethane	ND	0.200	ND	1.54		1
1,2-Dichlorobenzene	ND	0.200	ND	1.20		1
1,2-Dichloroethane	ND	0.200	ND	0.809		1
1,2-Dichloropropane	ND	0.200	ND	0.924		1
1,3,5-Trimethylbenzene	ND	0.200	ND	0.982		1
1,3-Butadiene	ND	0.200	ND	0.442		1
1,3-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dioxane	ND	0.200	ND	0.720		1
2,2,4-Trimethylpentane	0.208	0.200	0.971	0.934		1
2-Butanone	0.527	0.200	1.55	0.589		1
o-Chlorotoluene	ND	0.200	ND	1.03		1
2-Hexanone	ND	0.200	ND	0.819		1
3-Chloropropene	ND	0.200	ND	0.626		1
4-Ethyltoluene	ND	0.200	ND	0.982		1
Acetone	ND	1.00	ND	2.37		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-02
Client ID: IA-1
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 15:00
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	0.660	0.200	2.11	0.638		1
Bromodichloromethane	ND	0.200	ND	1.34		1
Bromoform	ND	0.200	ND	2.06		1
Bromomethane	ND	0.200	ND	0.776		1
Carbon disulfide	ND	0.200	ND	0.622		1
Carbon tetrachloride	ND	0.200	ND	1.26		1
Chlorobenzene	ND	0.200	ND	0.920		1
Chloroethane	ND	0.200	ND	0.527		1
Chloroform	ND	0.200	ND	0.976		1
Chloromethane	0.677	0.200	1.40	0.413		1
cis-1,2-Dichloroethene	ND	0.200	ND	0.792		1
cis-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Cyclohexane	ND	0.200	ND	0.688		1
Dibromochloromethane	ND	0.200	ND	1.70		1
Dichlorodifluoromethane	5.19	0.200	25.6	0.988		1
Ethylbenzene	0.262	0.200	1.14	0.868		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	ND	1.53		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	ND	1.40		1
Heptane	0.230	0.200	0.942	0.819		1
Hexachlorobutadiene	ND	0.200	ND	2.13		1
n-Hexane	0.499	0.200	1.76	0.704		1
iso-Propyl Alcohol	3.84	0.500	9.42	1.23	J	1
Methylene chloride	ND	0.500	ND	1.74		1
4-Methyl-2-pentanone	ND	0.200	ND	0.819		1
Methyl tert butyl ether	ND	0.200	ND	0.720		1
p/m-Xylene	0.382	0.200	1.66	0.868		1
o-Xylene	ND	0.200	ND	0.868		1
Naphthalene	ND	0.200	ND	1.05		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-02
Client ID: IA-1
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 15:00
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	0.200	ND	0.851		1
tert-Butyl Alcohol	ND	0.200	ND	0.606		1
Tetrachloroethene	0.328	0.200	2.22	1.36		1
Thiophene	ND	0.200	ND	0.688		1
Toluene	2.20	0.200	8.27	0.753		1
trans-1,2-Dichloroethene	ND	0.200	ND	0.792		1
trans-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Trichloroethene	ND	0.200	ND	1.07		1
Trichlorofluoromethane	1.76	0.200	9.85	1.12		1
Vinyl bromide	ND	0.200	ND	0.874		1
Vinyl chloride	ND	0.200	ND	0.511		1
Indane	ND	0.200	ND	0.967		1
Indene	ND	0.200	ND	0.950		1
1-Methylnaphthalene	ND	2.50	ND	14.5		1
2-Methylnaphthalene	ND	2.50	ND	14.5		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-03
Client ID: IA-7
Sample Location: BROOKLYN, NY
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 02/27/10 15:46
Analyst: BS

Date Collected: 02/22/10 17:05
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	0.200	ND	1.09		1
1,1,2,2-Tetrachloroethane	ND	0.200	ND	1.37		1
1,1,2-Trichloroethane	ND	0.200	ND	1.09		1
1,1-Dichloroethane	ND	0.200	ND	0.809		1
1,1-Dichloroethene	ND	0.200	ND	0.792		1
1,2,3-Trimethylbenzene	ND	0.200	ND	0.983		1
1,2,4-Trichlorobenzene	ND	0.200	ND	1.48		1
1,2,4-Trimethylbenzene	ND	0.200	ND	0.982		1
1,2,4,5-Tetramethylbenzene	ND	2.50	ND	13.7		1
1,2-Dibromoethane	ND	0.200	ND	1.54		1
1,2-Dichlorobenzene	ND	0.200	ND	1.20		1
1,2-Dichloroethane	ND	0.200	ND	0.809		1
1,2-Dichloropropane	ND	0.200	ND	0.924		1
1,3,5-Trimethylbenzene	ND	0.200	ND	0.982		1
1,3-Butadiene	ND	0.200	ND	0.442		1
1,3-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dioxane	ND	0.200	ND	0.720		1
2,2,4-Trimethylpentane	ND	0.200	ND	0.934		1
2-Butanone	0.433	0.200	1.28	0.589		1
o-Chlorotoluene	ND	0.200	ND	1.03		1
2-Hexanone	ND	0.200	ND	0.819		1
3-Chloropropene	ND	0.200	ND	0.626		1
4-Ethyltoluene	ND	0.200	ND	0.982		1
Acetone	9.38	1.00	22.3	2.37		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-03
Client ID: IA-7
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 17:05
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	0.607	0.200	1.94	0.638		1
Bromodichloromethane	ND	0.200	ND	1.34		1
Bromoform	ND	0.200	ND	2.06		1
Bromomethane	ND	0.200	ND	0.776		1
Carbon disulfide	ND	0.200	ND	0.622		1
Carbon tetrachloride	ND	0.200	ND	1.26		1
Chlorobenzene	ND	0.200	ND	0.920		1
Chloroethane	ND	0.200	ND	0.527		1
Chloroform	ND	0.200	ND	0.976		1
Chloromethane	0.646	0.200	1.33	0.413		1
cis-1,2-Dichloroethene	ND	0.200	ND	0.792		1
cis-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Cyclohexane	ND	0.200	ND	0.688		1
Dibromochloromethane	ND	0.200	ND	1.70		1
Dichlorodifluoromethane	0.782	0.200	3.86	0.988		1
Ethylbenzene	0.269	0.200	1.17	0.868		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	ND	1.53		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	ND	1.40		1
Heptane	0.223	0.200	0.913	0.819		1
Hexachlorobutadiene	ND	0.200	ND	2.13		1
n-Hexane	0.279	0.200	0.983	0.704		1
iso-Propyl Alcohol	25.9	0.500	63.6	1.23	J	1
Methylene chloride	ND	0.500	ND	1.74		1
4-Methyl-2-pentanone	ND	0.200	ND	0.819		1
Methyl tert butyl ether	ND	0.200	ND	0.720		1
p/m-Xylene	0.637	0.200	2.76	0.868		1
o-Xylene	0.262	0.200	1.14	0.868		1
Naphthalene	ND	0.200	ND	1.05		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-03
Client ID: IA-7
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 17:05
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	0.200	ND	0.851		1
tert-Butyl Alcohol	ND	0.200	ND	0.606		1
Tetrachloroethene	1.53	0.200	10.4	1.36		1
Thiophene	ND	0.200	ND	0.688		1
Toluene	1.41	0.200	5.31	0.753		1
trans-1,2-Dichloroethene	ND	0.200	ND	0.792		1
trans-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Trichloroethene	ND	0.200	ND	1.07		1
Trichlorofluoromethane	0.354	0.200	1.99	1.12		1
Vinyl bromide	ND	0.200	ND	0.874		1
Vinyl chloride	ND	0.200	ND	0.511		1
Indane	ND	0.200	ND	0.967		1
Indene	ND	0.200	ND	0.950		1
1-Methylnaphthalene	ND	2.50	ND	14.5		1
2-Methylnaphthalene	ND	2.50	ND	14.5		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-04
Client ID: IA-6
Sample Location: BROOKLYN, NY
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 02/27/10 16:24
Analyst: BS

Date Collected: 02/22/10 15:41
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	0.200	ND	1.09		1
1,1,2,2-Tetrachloroethane	ND	0.200	ND	1.37		1
1,1,2-Trichloroethane	ND	0.200	ND	1.09		1
1,1-Dichloroethane	ND	0.200	ND	0.809		1
1,1-Dichloroethene	ND	0.200	ND	0.792		1
1,2,3-Trimethylbenzene	ND	0.200	ND	0.983		1
1,2,4-Trichlorobenzene	ND	0.200	ND	1.48		1
1,2,4-Trimethylbenzene	0.232	0.200	1.14	0.982		1
1,2,4,5-Tetramethylbenzene	ND	2.50	ND	13.7		1
1,2-Dibromoethane	ND	0.200	ND	1.54		1
1,2-Dichlorobenzene	ND	0.200	ND	1.20		1
1,2-Dichloroethane	ND	0.200	ND	0.809		1
1,2-Dichloropropane	ND	0.200	ND	0.924		1
1,3,5-Trimethylbenzene	ND	0.200	ND	0.982		1
1,3-Butadiene	ND	0.200	ND	0.442		1
1,3-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dioxane	ND	0.200	ND	0.720		1
2,2,4-Trimethylpentane	ND	0.200	ND	0.934		1
2-Butanone	0.531	0.200	1.56	0.589		1
o-Chlorotoluene	ND	0.200	ND	1.03		1
2-Hexanone	ND	0.200	ND	0.819		1
3-Chloropropene	ND	0.200	ND	0.626		1
4-Ethyltoluene	ND	0.200	ND	0.982		1
Acetone	10.3	1.00	24.4	2.37		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-04
Client ID: IA-6
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 15:41
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	0.637	0.200	2.03	0.638		1
Bromodichloromethane	ND	0.200	ND	1.34		1
Bromoform	ND	0.200	ND	2.06		1
Bromomethane	ND	0.200	ND	0.776		1
Carbon disulfide	ND	0.200	ND	0.622		1
Carbon tetrachloride	ND	0.200	ND	1.26		1
Chlorobenzene	ND	0.200	ND	0.920		1
Chloroethane	ND	0.200	ND	0.527		1
Chloroform	ND	0.200	ND	0.976		1
Chloromethane	0.634	0.200	1.31	0.413		1
cis-1,2-Dichloroethene	ND	0.200	ND	0.792		1
cis-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Cyclohexane	0.210	0.200	0.722	0.688		1
Dibromochloromethane	ND	0.200	ND	1.70		1
Dichlorodifluoromethane	0.779	0.200	3.85	0.988		1
Ethylbenzene	ND	0.200	ND	0.868		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	ND	1.53		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	ND	1.40		1
Heptane	0.341	0.200	1.40	0.819		1
Hexachlorobutadiene	ND	0.200	ND	2.13		1
n-Hexane	0.454	0.200	1.60	0.704		1
iso-Propyl Alcohol	15.9	0.500	39.0	1.23	J	1
Methylene chloride	ND	0.500	ND	1.74		1
4-Methyl-2-pentanone	0.812	0.200	3.32	0.819		1
Methyl tert butyl ether	ND	0.200	ND	0.720		1
p/m-Xylene	0.364	0.200	1.58	0.868		1
o-Xylene	ND	0.200	ND	0.868		1
Naphthalene	ND	0.200	ND	1.05		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-04
Client ID: IA-6
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 15:41
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	0.200	ND	0.851		1
tert-Butyl Alcohol	ND	0.200	ND	0.606		1
Tetrachloroethene	2.65	0.200	18.0	1.36		1
Thiophene	ND	0.200	ND	0.688		1
Toluene	1.14	0.200	4.30	0.753		1
trans-1,2-Dichloroethene	ND	0.200	ND	0.792		1
trans-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Trichloroethene	ND	0.200	ND	1.07		1
Trichlorofluoromethane	0.337	0.200	1.89	1.12		1
Vinyl bromide	ND	0.200	ND	0.874		1
Vinyl chloride	ND	0.200	ND	0.511		1
Indane	ND	0.200	ND	0.967		1
Indene	ND	0.200	ND	0.950		1
1-Methylnaphthalene	ND	2.50	ND	14.5		1
2-Methylnaphthalene	ND	2.50	ND	14.5		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-05
Client ID: IA-3
Sample Location: BROOKLYN, NY
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 02/27/10 17:40
Analyst: BS

Date Collected: 02/22/10 16:21
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	0.200	ND	1.09		1
1,1,2,2-Tetrachloroethane	ND	0.200	ND	1.37		1
1,1,2-Trichloroethane	ND	0.200	ND	1.09		1
1,1-Dichloroethane	ND	0.200	ND	0.809		1
1,1-Dichloroethene	ND	0.200	ND	0.792		1
1,2,3-Trimethylbenzene	ND	0.200	ND	0.983		1
1,2,4-Trichlorobenzene	ND	0.200	ND	1.48		1
1,2,4-Trimethylbenzene	ND	0.200	ND	0.982		1
1,2,4,5-Tetramethylbenzene	ND	2.50	ND	13.7		1
1,2-Dibromoethane	ND	0.200	ND	1.54		1
1,2-Dichlorobenzene	ND	0.200	ND	1.20		1
1,2-Dichloroethane	ND	0.200	ND	0.809		1
1,2-Dichloropropane	ND	0.200	ND	0.924		1
1,3,5-Trimethylbenzene	ND	0.200	ND	0.982		1
1,3-Butadiene	ND	0.200	ND	0.442		1
1,3-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dioxane	ND	0.200	ND	0.720		1
2,2,4-Trimethylpentane	0.262	0.200	1.22	0.934		1
2-Butanone	7.45	0.200	21.9	0.589		1
o-Chlorotoluene	ND	0.200	ND	1.03		1
2-Hexanone	ND	0.200	ND	0.819		1
3-Chloropropene	ND	0.200	ND	0.626		1
4-Ethyltoluene	ND	0.200	ND	0.982		1
Acetone	12.0	1.00	28.6	2.37		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-05
Client ID: IA-3
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 16:21
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	0.594	0.200	1.90	0.638		1
Bromodichloromethane	ND	0.200	ND	1.34		1
Bromoform	ND	0.200	ND	2.06		1
Bromomethane	ND	0.200	ND	0.776		1
Carbon disulfide	ND	0.200	ND	0.622		1
Carbon tetrachloride	ND	0.200	ND	1.26		1
Chlorobenzene	ND	0.200	ND	0.920		1
Chloroethane	ND	0.200	ND	0.527		1
Chloroform	ND	0.200	ND	0.976		1
Chloromethane	0.750	0.200	1.55	0.413		1
cis-1,2-Dichloroethene	ND	0.200	ND	0.792		1
cis-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Cyclohexane	0.223	0.200	0.767	0.688		1
Dibromochloromethane	ND	0.200	ND	1.70		1
Dichlorodifluoromethane	0.591	0.200	2.92	0.988		1
Ethylbenzene	ND	0.200	ND	0.868		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	ND	1.53		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	ND	1.40		1
Heptane	1.25	0.200	5.11	0.819		1
Hexachlorobutadiene	ND	0.200	ND	2.13		1
n-Hexane	2.53	0.200	8.91	0.704		1
iso-Propyl Alcohol	9.63	0.500	23.6	1.23	J	1
Methylene chloride	ND	0.500	ND	1.74		1
4-Methyl-2-pentanone	0.309	0.200	1.26	0.819		1
Methyl tert butyl ether	ND	0.200	ND	0.720		1
p/m-Xylene	0.577	0.200	2.50	0.868		1
o-Xylene	0.218	0.200	0.946	0.868		1
Naphthalene	ND	0.200	ND	1.05		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-05
Client ID: IA-3
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 16:21
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	0.200	ND	0.851		1
tert-Butyl Alcohol	ND	0.200	ND	0.606		1
Tetrachloroethene	0.200	0.200	1.36	1.36		1
Thiophene	ND	0.200	ND	0.688		1
Toluene	9.48	0.200	35.7	0.753		1
trans-1,2-Dichloroethene	ND	0.200	ND	0.792		1
trans-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Trichloroethene	ND	0.200	ND	1.07		1
Trichlorofluoromethane	0.262	0.200	1.47	1.12		1
Vinyl bromide	ND	0.200	ND	0.874		1
Vinyl chloride	ND	0.200	ND	0.511		1
Indane	ND	0.200	ND	0.967		1
Indene	ND	0.200	ND	0.950		1
1-Methylnaphthalene	ND	2.50	ND	14.5		1
2-Methylnaphthalene	ND	2.50	ND	14.5		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-06
Client ID: IA-5
Sample Location: BROOKLYN, NY
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 02/27/10 18:18
Analyst: BS

Date Collected: 02/22/10 16:16
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	0.200	ND	1.09		1
1,1,2,2-Tetrachloroethane	ND	0.200	ND	1.37		1
1,1,2-Trichloroethane	ND	0.200	ND	1.09		1
1,1-Dichloroethane	ND	0.200	ND	0.809		1
1,1-Dichloroethene	ND	0.200	ND	0.792		1
1,2,3-Trimethylbenzene	0.288	0.200	1.42	0.983		1
1,2,4-Trichlorobenzene	ND	0.200	ND	1.48		1
1,2,4-Trimethylbenzene	0.378	0.200	1.86	0.982		1
1,2,4,5-Tetramethylbenzene	ND	2.50	ND	13.7		1
1,2-Dibromoethane	ND	0.200	ND	1.54		1
1,2-Dichlorobenzene	ND	0.200	ND	1.20		1
1,2-Dichloroethane	ND	0.200	ND	0.809		1
1,2-Dichloropropane	ND	0.200	ND	0.924		1
1,3,5-Trimethylbenzene	ND	0.200	ND	0.982		1
1,3-Butadiene	ND	0.200	ND	0.442		1
1,3-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dioxane	ND	0.200	ND	0.720		1
2,2,4-Trimethylpentane	0.232	0.200	1.08	0.934		1
2-Butanone	1.64	0.200	4.84	0.589		1
o-Chlorotoluene	ND	0.200	ND	1.03		1
2-Hexanone	ND	0.200	ND	0.819		1
3-Chloropropene	ND	0.200	ND	0.626		1
4-Ethyltoluene	0.217	0.200	1.06	0.982		1
Acetone	17.3	1.00	41.1	2.37		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-06
Client ID: IA-5
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 16:16
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	0.571	0.200	1.82	0.638		1
Bromodichloromethane	ND	0.200	ND	1.34		1
Bromoform	ND	0.200	ND	2.06		1
Bromomethane	ND	0.200	ND	0.776		1
Carbon disulfide	ND	0.200	ND	0.622		1
Carbon tetrachloride	ND	0.200	ND	1.26		1
Chlorobenzene	ND	0.200	ND	0.920		1
Chloroethane	ND	0.200	ND	0.527		1
Chloroform	ND	0.200	ND	0.976		1
Chloromethane	0.651	0.200	1.34	0.413		1
cis-1,2-Dichloroethene	ND	0.200	ND	0.792		1
cis-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Cyclohexane	ND	0.200	ND	0.688		1
Dibromochloromethane	ND	0.200	ND	1.70		1
Dichlorodifluoromethane	0.610	0.200	3.01	0.988		1
Ethylbenzene	ND	0.200	ND	0.868		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	ND	1.53		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	ND	1.40		1
Heptane	0.235	0.200	0.962	0.819		1
Hexachlorobutadiene	ND	0.200	ND	2.13		1
n-Hexane	1.00	0.200	3.53	0.704		1
iso-Propyl Alcohol	23.4	0.500	57.4	1.23	J	1
Methylene chloride	ND	0.500	ND	1.74		1
4-Methyl-2-pentanone	4.78	0.200	19.5	0.819		1
Methyl tert butyl ether	ND	0.200	ND	0.720		1
p/m-Xylene	0.427	0.200	1.85	0.868		1
o-Xylene	ND	0.200	ND	0.868		1
Naphthalene	ND	0.200	ND	1.05		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-06
Client ID: IA-5
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 16:16
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	0.200	ND	0.851		1
tert-Butyl Alcohol	0.206	0.200	0.624	0.606		1
Tetrachloroethene	2.42	0.200	16.4	1.36		1
Thiophene	ND	0.200	ND	0.688		1
Toluene	1.30	0.200	4.91	0.753		1
trans-1,2-Dichloroethene	ND	0.200	ND	0.792		1
trans-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Trichloroethene	0.267	0.200	1.43	1.07		1
Trichlorofluoromethane	0.285	0.200	1.60	1.12		1
Vinyl bromide	ND	0.200	ND	0.874		1
Vinyl chloride	ND	0.200	ND	0.511		1
Indane	ND	0.200	ND	0.967		1
Indene	ND	0.200	ND	0.950		1
1-Methylnaphthalene	ND	2.50	ND	14.5		1
2-Methylnaphthalene	ND	2.50	ND	14.5		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-07
Client ID: IA-4
Sample Location: BROOKLYN, NY
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 02/27/10 18:57
Analyst: BS

Date Collected: 02/22/10 19:04
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	0.200	ND	1.09		1
1,1,2,2-Tetrachloroethane	ND	0.200	ND	1.37		1
1,1,2-Trichloroethane	ND	0.200	ND	1.09		1
1,1-Dichloroethane	ND	0.200	ND	0.809		1
1,1-Dichloroethene	ND	0.200	ND	0.792		1
1,2,3-Trimethylbenzene	ND	0.200	ND	0.983		1
1,2,4-Trichlorobenzene	ND	0.200	ND	1.48		1
1,2,4-Trimethylbenzene	0.237	0.200	1.16	0.982		1
1,2,4,5-Tetramethylbenzene	ND	2.50	ND	13.7		1
1,2-Dibromoethane	ND	0.200	ND	1.54		1
1,2-Dichlorobenzene	ND	0.200	ND	1.20		1
1,2-Dichloroethane	ND	0.200	ND	0.809		1
1,2-Dichloropropane	ND	0.200	ND	0.924		1
1,3,5-Trimethylbenzene	ND	0.200	ND	0.982		1
1,3-Butadiene	0.380	0.200	0.840	0.442		1
1,3-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dioxane	ND	0.200	ND	0.720		1
2,2,4-Trimethylpentane	0.212	0.200	0.990	0.934		1
2-Butanone	1.35	0.200	3.98	0.589		1
o-Chlorotoluene	ND	0.200	ND	1.03		1
2-Hexanone	ND	0.200	ND	0.819		1
3-Chloropropene	ND	0.200	ND	0.626		1
4-Ethyltoluene	ND	0.200	ND	0.982		1
Acetone	11.3	1.00	26.8	2.37		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-07
Client ID: IA-4
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 19:04
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	0.918	0.200	2.93	0.638		1
Bromodichloromethane	ND	0.200	ND	1.34		1
Bromoform	ND	0.200	ND	2.06		1
Bromomethane	ND	0.200	ND	0.776		1
Carbon disulfide	ND	0.200	ND	0.622		1
Carbon tetrachloride	ND	0.200	ND	1.26		1
Chlorobenzene	ND	0.200	ND	0.920		1
Chloroethane	ND	0.200	ND	0.527		1
Chloroform	ND	0.200	ND	0.976		1
Chloromethane	0.679	0.200	1.40	0.413		1
cis-1,2-Dichloroethene	ND	0.200	ND	0.792		1
cis-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Cyclohexane	ND	0.200	ND	0.688		1
Dibromochloromethane	ND	0.200	ND	1.70		1
Dichlorodifluoromethane	0.887	0.200	4.38	0.988		1
Ethylbenzene	ND	0.200	ND	0.868		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	ND	1.53		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	ND	1.40		1
Heptane	0.380	0.200	1.56	0.819		1
Hexachlorobutadiene	ND	0.200	ND	2.13		1
n-Hexane	0.701	0.200	2.47	0.704		1
iso-Propyl Alcohol	10.6	0.500	25.9	1.23	J	1
Methylene chloride	0.508	0.500	1.76	1.74		1
4-Methyl-2-pentanone	0.961	0.200	3.93	0.819		1
Methyl tert butyl ether	ND	0.200	ND	0.720		1
p/m-Xylene	0.547	0.200	2.37	0.868		1
o-Xylene	0.219	0.200	0.950	0.868		1
Naphthalene	ND	0.200	ND	1.05		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005

Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-07
Client ID: IA-4
Sample Location: BROOKLYN, NY

Date Collected: 02/22/10 19:04
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	0.200	ND	0.851		1
tert-Butyl Alcohol	0.260	0.200	0.788	0.606		1
Tetrachloroethene	0.897	0.200	6.08	1.36		1
Thiophene	ND	0.200	ND	0.688		1
Toluene	2.37	0.200	8.94	0.753		1
trans-1,2-Dichloroethene	ND	0.200	ND	0.792		1
trans-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Trichloroethene	ND	0.200	ND	1.07		1
Trichlorofluoromethane	0.373	0.200	2.09	1.12		1
Vinyl bromide	ND	0.200	ND	0.874		1
Vinyl chloride	ND	0.200	ND	0.511		1
Indane	ND	0.200	ND	0.967		1
Indene	ND	0.200	ND	0.950		1
1-Methylnaphthalene	ND	2.50	ND	14.5		1
2-Methylnaphthalene	ND	2.50	ND	14.5		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-08
Client ID: IA-2
Sample Location: BROOKLYN, NY
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 02/27/10 19:35
Analyst: BS

Date Collected: 02/22/10 16:00
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	0.200	ND	1.09		1
1,1,2,2-Tetrachloroethane	ND	0.200	ND	1.37		1
1,1,2-Trichloroethane	ND	0.200	ND	1.09		1
1,1-Dichloroethane	ND	0.200	ND	0.809		1
1,1-Dichloroethene	ND	0.200	ND	0.792		1
1,2,3-Trimethylbenzene	ND	0.200	ND	0.983		1
1,2,4-Trichlorobenzene	ND	0.200	ND	1.48		1
1,2,4-Trimethylbenzene	ND	0.200	ND	0.982		1
1,2,4,5-Tetramethylbenzene	ND	2.50	ND	13.7		1
1,2-Dibromoethane	ND	0.200	ND	1.54		1
1,2-Dichlorobenzene	ND	0.200	ND	1.20		1
1,2-Dichloroethane	ND	0.200	ND	0.809		1
1,2-Dichloropropane	ND	0.200	ND	0.924		1
1,3,5-Trimethylbenzene	ND	0.200	ND	0.982		1
1,3-Butadiene	ND	0.200	ND	0.442		1
1,3-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dioxane	ND	0.200	ND	0.720		1
2,2,4-Trimethylpentane	ND	0.200	ND	0.934		1
2-Butanone	1.64	0.200	4.84	0.589		1
o-Chlorotoluene	ND	0.200	ND	1.03		1
2-Hexanone	ND	0.200	ND	0.819		1
3-Chloropropene	ND	0.200	ND	0.626		1
4-Ethyltoluene	ND	0.200	ND	0.982		1
Acetone	9.63	1.00	22.9	2.37		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-08
Client ID: IA-2
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 16:00
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	0.640	0.200	2.04	0.638		1
Bromodichloromethane	ND	0.200	ND	1.34		1
Bromoform	ND	0.200	ND	2.06		1
Bromomethane	ND	0.200	ND	0.776		1
Carbon disulfide	ND	0.200	ND	0.622		1
Carbon tetrachloride	ND	0.200	ND	1.26		1
Chlorobenzene	ND	0.200	ND	0.920		1
Chloroethane	ND	0.200	ND	0.527		1
Chloroform	ND	0.200	ND	0.976		1
Chloromethane	0.675	0.200	1.39	0.413		1
cis-1,2-Dichloroethene	ND	0.200	ND	0.792		1
cis-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Cyclohexane	ND	0.200	ND	0.688		1
Dibromochloromethane	ND	0.200	ND	1.70		1
Dichlorodifluoromethane	0.624	0.200	3.08	0.988		1
Ethylbenzene	0.214	0.200	0.928	0.868		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	ND	1.53		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	ND	1.40		1
Heptane	0.251	0.200	1.03	0.819		1
Hexachlorobutadiene	ND	0.200	ND	2.13		1
n-Hexane	0.531	0.200	1.87	0.704		1
iso-Propyl Alcohol	6.33	0.500	15.6	1.23	J	1
Methylene chloride	ND	0.500	ND	1.74		1
4-Methyl-2-pentanone	0.261	0.200	1.07	0.819		1
Methyl tert butyl ether	ND	0.200	ND	0.720		1
p/m-Xylene	0.491	0.200	2.13	0.868		1
o-Xylene	0.201	0.200	0.872	0.868		1
Naphthalene	ND	0.200	ND	1.05		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-08
Client ID: IA-2
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 16:00
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	0.200	ND	0.851		1
tert-Butyl Alcohol	0.227	0.200	0.688	0.606		1
Tetrachloroethene	0.307	0.200	2.08	1.36		1
Thiophene	ND	0.200	ND	0.688		1
Toluene	2.52	0.200	9.51	0.753		1
trans-1,2-Dichloroethene	ND	0.200	ND	0.792		1
trans-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Trichloroethene	ND	0.200	ND	1.07		1
Trichlorofluoromethane	0.300	0.200	1.68	1.12		1
Vinyl bromide	ND	0.200	ND	0.874		1
Vinyl chloride	ND	0.200	ND	0.511		1
Indane	ND	0.200	ND	0.967		1
Indene	ND	0.200	ND	0.950		1
1-Methylnaphthalene	ND	2.50	ND	14.5		1
2-Methylnaphthalene	ND	2.50	ND	14.5		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-09
Client ID: DUP022210
Sample Location: BROOKLYN, NY
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 02/27/10 20:13
Analyst: BS

Date Collected: 02/22/10 00:00
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	0.200	ND	1.09	J	1
1,1,2,2-Tetrachloroethane	ND	0.200	ND	1.37		1
1,1,2-Trichloroethane	ND	0.200	ND	1.09		1
1,1-Dichloroethane	ND	0.200	ND	0.809		1
1,1-Dichloroethene	ND	0.200	ND	0.792		1
1,2,3-Trimethylbenzene	ND	0.200	ND	0.983		1
1,2,4-Trichlorobenzene	ND	0.200	ND	1.48		1
1,2,4-Trimethylbenzene	ND	0.200	ND	0.982		1
1,2,4,5-Tetramethylbenzene	ND	2.50	ND	13.7		1
1,2-Dibromoethane	ND	0.200	ND	1.54		1
1,2-Dichlorobenzene	ND	0.200	ND	1.20		1
1,2-Dichloroethane	ND	0.200	ND	0.809		1
1,2-Dichloropropane	ND	0.200	ND	0.924		1
1,3,5-Trimethylbenzene	ND	0.200	ND	0.982		1
1,3-Butadiene	ND	0.200	ND	0.442		1
1,3-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dioxane	ND	0.200	ND	0.720		1
2,2,4-Trimethylpentane	ND	0.200	ND	0.934		1
2-Butanone	1.42	0.200	4.19	0.589		1
o-Chlorotoluene	ND	0.200	ND	1.03		1
2-Hexanone	ND	0.200	ND	0.819		1
3-Chloropropene	ND	0.200	ND	0.626		1
4-Ethyltoluene	ND	0.200	ND	0.982		1
Acetone	7.82	1.00	18.6	2.37		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-09
Client ID: DUP022210
Sample Location: BROOKLYN, NY
Date Collected: 02/22/10 00:00
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	0.580	0.200	1.85	0.638	J	1
Bromodichloromethane	ND	0.200	ND	1.34		1
Bromoform	ND	0.200	ND	2.06		1
Bromomethane	ND	0.200	ND	0.776		1
Carbon disulfide	ND	0.200	ND	0.622		1
Carbon tetrachloride	ND	0.200	ND	1.26		1
Chlorobenzene	ND	0.200	ND	0.920		1
Chloroethane	ND	0.200	ND	0.527		1
Chloroform	ND	0.200	ND	0.976		1
Chloromethane	0.562	0.200	1.16	0.413		1
cis-1,2-Dichloroethene	ND	0.200	ND	0.792		1
cis-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Cyclohexane	ND	0.200	ND	0.688		1
Dibromochloromethane	ND	0.200	ND	1.70		1
Dichlorodifluoromethane	0.609	0.200	3.01	0.988		1
Ethylbenzene	0.202	0.200	0.876	0.868		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	ND	1.53		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	ND	1.40		1
Heptane	0.249	0.200	1.02	0.819		1
Hexachlorobutadiene	ND	0.200	ND	2.13		1
n-Hexane	0.512	0.200	1.80	0.704		1
iso-Propyl Alcohol	5.71	0.500	14.0	1.23		1
Methylene chloride	ND	0.500	ND	1.74		1
4-Methyl-2-pentanone	0.221	0.200	0.904	0.819		1
Methyl tert butyl ether	ND	0.200	ND	0.720		1
p/m-Xylene	0.446	0.200	1.94	0.868		1
o-Xylene	0.200	0.200	0.868	0.868		1
Naphthalene	ND	0.200	ND	1.05		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005

Lab Number: L1002703
Report Date: 03/02/10

SAMPLE RESULTS

Lab ID: L1002703-09
Client ID: DUP022210
Sample Location: BROOKLYN, NY

Date Collected: 02/22/10 00:00
Date Received: 02/23/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	0.200	ND	0.851	J	1
tert-Butyl Alcohol	0.236	0.200	0.715	0.606		1
Tetrachloroethene	0.298	0.200	2.02	1.36		1
Thiophene	ND	0.200	ND	0.688		1
Toluene	2.50	0.200	9.41	0.753		1
trans-1,2-Dichloroethene	ND	0.200	ND	0.792		1
trans-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Trichloroethene	ND	0.200	ND	1.07		1
Trichlorofluoromethane	0.271	0.200	1.52	1.12		1
Vinyl bromide	ND	0.200	ND	0.874		1
Vinyl chloride	ND	0.200	ND	0.511		1
Indane	ND	0.200	ND	0.967		1
Indene	ND	0.200	ND	0.950		1
1-Methylnaphthalene	ND	2.50	ND	14.5		1
2-Methylnaphthalene	ND	2.50	ND	14.5		1

03021017:11

AIR ANALYSIS

ALPHA ANALYTICAL

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 2/23/10

ALPHA Job #: L1002703

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Arcadis
Address: 2 Huntington Quadrangle Suite 1510, Melville, NY 11747
Phone: 631-249-7600
Fax: 631-249-7610
Email: chris.keen@arcadis-us.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Dangman Park MGP site
Project Location: Brooklyn, NY
Project #: B0036704.0000.00005
Project Manager: Chris Keen
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 3/2/10 Time:

Report Information - Data Deliverables

☐ FAX
☐ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☐ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (if different than Project Manager)

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed	Program	Criteria

Other Project Specific Requirements/Comments:

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-14A by TO-15	TO-15 + NY pet, ind. comp	TO-15 SIM	APH	FIXED GASES	TO-13A	TO-4 / TO-10	Sample Comments (i.e. PID)
02703.1	AA-1	2/22/10	9:59 AM	1521	-29.5	-7	AA	PP	6L	1530	0369		X						
2	IA-1	2/22/10	9:38 AM	1500	-28.5	-7	AA	PP	6L	1667	0176		X						
3	IA-7	2/22/10	9:29 AM	1705	7-30	-7	AA	PP	6L	1545	0282		X						
4	IA-6	2/22/10	8:47 AM	1541	-29	-7	AA	PP	6L	609	0175		X						
5	IA-3	2/22/10	9:03 AM	1621	-29.5	-7	AA	PP	6L	1036	0324		X						
6	IA-5	2/22/10	8:56 AM	1616	7-30	-7	AA	PP	6L	1542	0276		X						
7	IA-4	2/22/10	11:14 AM	1904	-28.75	-7	AA	PP	6L	991	0273		X						
8	IA-2	2/22/10	9:13 AM	1600	-29	-7	AA	PP	6L	1698	0441		X						
9	Dup022210	2/22/10	—	—	7-30	-9	AA	PP	6L	1680	0023		X						Before start reading -4.5

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type: CS

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Rel- [signature] 2/23/10
Rel: P. Gillert 2/24/10 10:55

Relinquished By:	Date/Time	Received By:	Date/Time:
[signature]	2/22/10 8:00 AM	R Pearson	2-23-10/ 1050
R Pearson	2-22-10/ 1550	[signature]	2/23/10 1550
[signature]		[signature]	2/23/10 1700
[signature]	2/23/10 1925	[signature]	2/23/10 1923

Rec: P. Gillert 2/24/10 9:30
Rec: Eileen Sullivan 2/24/10 10:55

Form No: 101-02 (19-Jun-09)

ARCADIS
Infrastructure, environment, buildings

Imagine the result

Former Dangman Park MGP Site

Data Usability Summary Report

BROOKLYN, NEW YORK

Volatile Analyses

SDG# L1002956

Analyses Performed By:
Alpha Analytical
Mansfield, Massachusetts

Report: #11761R
Review Level: Tier III
Project: B0036704.0000.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # L1002956 for samples collected in association with the Former Dangman Park 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. 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
SSSV-4	L1002956-01	Air	2/24/2010		X				
SSSV-3	L1002956-02	Air	2/24/2010		X				
SSSV-1	L1002956-03	Air	2/25/2010		X				
SSSV-2	L1002956-04	Air	2/25/2010		X				
DUP022510	L1002956-05	Air	2/25/2010	SSSV-1	X				

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Sample receipt condition		X		X	
Requested analyses and sample results		X		X	
Collection Technique (grab, composite, etc.)		X		X	
Methods of analysis		X		X	
Reporting limits		X		X	
Sample collection date		X		X	
Laboratory sample received date		X		X	
Sample preservation verification (as applicable)		X		X	
Sample preparation/extraction/analysis dates		X		X	
Fully executed Chain-of-Custody (COC) form completed		X		X	
Narrative summary of QA or sample problems provided		X		X	
Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

INTRODUCTION

Analyses were performed according to United States 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 of October 2006, New York State DEC Analytical Method ASP 2005 TO-15 (QA/QC Criteria R9 TO-15) and NYSDEC Modifications to R9 TO-15 QA/QC Criteria February 2008.

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

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

Sample Locations	Return Pressure/Vacuum Reading ("of Hg)
SSSV-4	0.2

Sample results associated with sample locations analyzed by analytical method TO-15 were qualified, as specified in the table below.

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

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 reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Several sample locations were 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.

Mass spectrometer performance was acceptable.

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 standards must exhibit a %RSD less than the control limit (30%) and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (30%) and 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/Continuing	Compound	Criteria
All sample locations associated with this SDG	ICV %RSD	1,2,4,5-Trimethylbenzene	33.8%
		1,2,4-Trichlorobenzene	33.0%
		2-Methylnaphthalene	39.8%
	CCV %D	Iso-Propyl alcohol	-30.9%
		1-Methylnaphthalene	37.8%
		2-Methylnaphthalene	46.8%

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

Initial/Continuing	Criteria	Sample Result	Qualification
		Detect	
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., ketenes, 1,4-dioxane, etc.)

5. 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% or less than 40% of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

6. 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%. The relative percent difference (RPD) between the LCS recoveries must exhibit an RPD within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for air matrices is applied when the criteria above is true. 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 three times the RL is applied for air matrices.

The laboratory duplicates exhibited acceptable results.

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 100% for air matrices 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 three times the RL is applied for air matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SSSV-1/ DUP022510	1,2,3-Trimethylbenzene	0.551	1 U	AC
	1,2,4-Trimethylbenzene	1.14	1 U	AC
	1,3,5-Trimethylbenzene	0.285	1 U	NC
	1,3-Butadiene	0.675	1 U	AC
	1,4-Dichlorobenzene	0.211	1 U	NC
	2,2,4-Trimethylpentane	0.486	1 U	AC
	2-Butanone	10.3	8.38	20.5 %
	2-Hexanone	0.814	1 U	AC
	4-Ethyltoluene	0.307	1 U	NC
	4-Methyl-2-pentanone	0.495	1 U	AC
	Acetone	46.9	39.5	17.1 %
	Benzene	35.8	32.6	9.3 %
	Carbon disulfide	0.947	1 U	AC
	Chloromethane	0.782	1 U	AC
	Cyclohexane	0.749	1 U	AC
	Dichlorodifluoromethane	0.478	1 U	AC
	Ethylbenzene	1.16	1 U	AC
	Heptane	2.68	2.28	AC
	Indane	1.1	1 U	AC
	Indene	2.46	1.26	NC
	iso-Propyl Alcohol	4.67	4.3	AC
	Naphthalene	3.49	2.04	NC
	n-Hexane	5.54	5.42	2.1 %
	o-Xylene	1.69	1.19	AC
	p/m-Xylene	3.01	2.1	NC
	Styrene	0.994	1 U	AC
	tert-Butyl Alcohol	0.678	1 U	AC
	Tetrachloroethene	5.56	5.06	9.4 %

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Toluene	16.1	12.5	25.1 %
	Trichlorofluoromethane	0.235	1 U	AC

AC Acceptable
NC Not compliant

The compounds 1,3,5-Trimethylbenzene, 1,4-Dichlorobenzene, 4-Ethyltoluene, Indene, Naphthalene, and p/m-Xylene associated with sample locations SSSV-1 and DUP022510 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.

All identified compounds met the specified criteria.

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; TO-15	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Canister return pressure/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
Matrix Spike (MS)					X
Matrix Spike Duplicate(MSD)					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (%D)		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	

VOCs; TO-15	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
D. Transcription/calculation errors present				X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

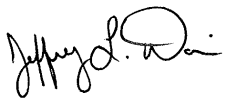
%RSD Percent relative difference
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	PCB/PEST /HERB	MET	MISC	
L1002956	2/24/2010	TO-15	SSSV-4	Air	No	--	--	--	--	VOC – Return canister pressure, ICV %RSD, CCV %D
L1002956	2/24/2010	TO-15	SSSV-3	Air	No	--	--	--	--	VOC –ICV %RSD, CCV %D
L1002956	2/25/2010	TO-15	SSSV-1	Air	No	--	--	--	--	VOC –ICV %RSD, CCV %D, Field Dup RPD
L1002956	2/25/2010	TO-15	SSSV-2	Air	No	--	--	--	--	VOC –ICV %RSD, CCV %D
L1002956	2/25/2010	TO-15	DUP022510	Air	No	--	--	--	--	VOC –ICV %RSD, CCV %D, Field Dup RPD

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: Jeffrey L. Davin

SIGNATURE: 

DATE: March 12, 2010

PEER REVIEW BY: Dennis Capria

DATE: March 17, 2010

CORRECTED SAMPLE ANALYSIS DATA SHEETS AND COCs

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-01 D
Client ID: SSSV-4
Sample Location: BROOKLYN, NY
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/05/10 01:56
Analyst: RY

Date Collected: 02/24/10 14:54
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	1.00	ND	5.45	R	5
1,1,2,2-Tetrachloroethane	ND	1.00	ND	6.86		5
1,1,2-Trichloroethane	ND	1.00	ND	5.45		5
1,1-Dichloroethane	ND	1.00	ND	4.04		5
1,1-Dichloroethene	ND	1.00	ND	3.96		5
1,2,3-Trimethylbenzene	ND	1.00	ND	4.92		5
1,2,4-Trichlorobenzene	ND	1.00	ND	7.42		5
1,2,4-Trimethylbenzene	1.08	1.00	5.28	4.91	J	5
1,2,4,5-Tetramethylbenzene	ND	12.5	ND	68.6	R	5
1,2-Dibromoethane	ND	1.00	ND	7.68		5
1,2-Dichlorobenzene	ND	1.00	ND	6.01		5
1,2-Dichloroethane	ND	1.00	ND	4.04		5
1,2-Dichloropropane	ND	1.00	ND	4.62		5
1,3,5-Trimethylbenzene	ND	1.00	ND	4.91		5
1,3-Butadiene	2.10	1.00	4.64	2.21	J	5
1,3-Dichlorobenzene	ND	1.00	ND	6.01	R	5
1,4-Dichlorobenzene	ND	1.00	ND	6.01		5
1,4-Dioxane	ND	1.00	ND	3.60		5
2,2,4-Trimethylpentane	ND	1.00	ND	4.67		5
2-Butanone	6.36	1.00	18.7	2.95	J	5
o-Chlorotoluene	ND	1.00	ND	5.17	R	5
2-Hexanone	ND	1.00	ND	4.10		5
3-Chloropropene	ND	1.00	ND	3.13		5
4-Ethyltoluene	ND	1.00	ND	4.91		5
Acetone	22.6	5.00	53.6	11.9	J	5

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-01 D
Client ID: SSSV-4
Sample Location: BROOKLYN, NY
Date Collected: 02/24/10 14:54
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	1.25	1.00	3.99	3.19	J	5
Bromodichloromethane	ND	1.00	ND	6.70	R	5
Bromoform	ND	1.00	ND	10.3		5
Bromomethane	ND	1.00	ND	3.88		5
Carbon disulfide	ND	1.00	ND	3.11		5
Carbon tetrachloride	ND	1.00	ND	6.29		5
Chlorobenzene	ND	1.00	ND	4.60		5
Chloroethane	ND	1.00	ND	2.64		5
Chloroform	ND	1.00	ND	4.88		5
Chloromethane	ND	1.00	ND	2.06		5
cis-1,2-Dichloroethene	ND	1.00	ND	3.96		5
cis-1,3-Dichloropropene	ND	1.00	ND	4.53		5
Cyclohexane	2.43	1.00	8.36	3.44	J	5
Dibromochloromethane	ND	1.00	ND	8.51	R	5
Dichlorodifluoromethane	ND	1.00	ND	4.94		5
Ethylbenzene	ND	1.00	ND	4.34		5
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.00	ND	7.66		5
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.00	ND	6.98		5
Heptane	2.76	1.00	11.3	4.10	J	5
Hexachlorobutadiene	ND	1.00	ND	10.6	R	5
n-Hexane	4.06	1.00	14.3	3.52	J	5
iso-Propyl Alcohol	2.78	2.50	6.83	6.14	J	5
Methylene chloride	ND	2.50	ND	8.68	R	5
4-Methyl-2-pentanone	1.62	1.00	6.61	4.09	J	5
Methyl tert butyl ether	ND	1.00	ND	3.60	R	5
p/m-Xylene	2.02	1.00	8.74	4.34	J	5
o-Xylene	ND	1.00	ND	4.34	R	5
Naphthalene	ND	1.00	ND	5.24	R	5

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-01 D
Client ID: SSSV-4
Sample Location: BROOKLYN, NY
Date Collected: 02/24/10 14:54
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	1.00	ND	4.26	R	5
tert-Butyl Alcohol	ND	1.00	ND	3.03	R	5
Tetrachloroethene	45.1	1.00	306	6.78	J	5
Thiophene	ND	1.00	ND	3.44	R	5
Toluene	2.28	1.00	8.58	3.76	J	5
trans-1,2-Dichloroethene	ND	1.00	ND	3.96	R	5
trans-1,3-Dichloropropene	ND	1.00	ND	4.53		5
Trichloroethene	ND	1.00	ND	5.37		5
Trichlorofluoromethane	ND	1.00	ND	5.61		5
Vinyl bromide	ND	1.00	ND	4.37		5
Vinyl chloride	ND	1.00	ND	2.55		5
Indane	ND	1.00	ND	4.83		5
Indene	ND	1.00	ND	4.75		5
1-Methylnaphthalene	ND	12.5	ND	72.7		5
2-Methylnaphthalene	ND	12.5	ND	72.7		5

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-02 D
Client ID: SSSV-3
Sample Location: BROOKLYN, NY
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/05/10 03:05
Analyst: RY

Date Collected: 02/24/10 13:25
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	1.00	ND	5.45		5
1,1,2,2-Tetrachloroethane	ND	1.00	ND	6.86		5
1,1,2-Trichloroethane	ND	1.00	ND	5.45		5
1,1-Dichloroethane	ND	1.00	ND	4.04		5
1,1-Dichloroethene	ND	1.00	ND	3.96		5
1,2,3-Trimethylbenzene	ND	1.00	ND	4.92		5
1,2,4-Trichlorobenzene	ND	1.00	ND	7.42	J	5
1,2,4-Trimethylbenzene	ND	1.00	ND	4.91		5
1,2,4,5-Tetramethylbenzene	ND	12.5	ND	68.6	J	5
1,2-Dibromoethane	ND	1.00	ND	7.68		5
1,2-Dichlorobenzene	ND	1.00	ND	6.01		5
1,2-Dichloroethane	ND	1.00	ND	4.04		5
1,2-Dichloropropane	ND	1.00	ND	4.62		5
1,3,5-Trimethylbenzene	ND	1.00	ND	4.91		5
1,3-Butadiene	6.35	1.00	14.0	2.21		5
1,3-Dichlorobenzene	ND	1.00	ND	6.01		5
1,4-Dichlorobenzene	ND	1.00	ND	6.01		5
1,4-Dioxane	ND	1.00	ND	3.60		5
2,2,4-Trimethylpentane	ND	1.00	ND	4.67		5
2-Butanone	12.8	1.00	37.7	2.95		5
o-Chlorotoluene	ND	1.00	ND	5.17		5
2-Hexanone	2.06	1.00	8.42	4.10		5
3-Chloropropene	ND	1.00	ND	3.13		5
4-Ethyltoluene	ND	1.00	ND	4.91		5
Acetone	63.9	5.00	152	11.9		5

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-02 D
Client ID: SSSV-3
Sample Location: BROOKLYN, NY
Date Collected: 02/24/10 13:25
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	28.8	1.00	92.0	3.19		5
Bromodichloromethane	ND	1.00	ND	6.70		5
Bromoform	ND	1.00	ND	10.3		5
Bromomethane	ND	1.00	ND	3.88		5
Carbon disulfide	2.08	1.00	6.47	3.11		5
Carbon tetrachloride	ND	1.00	ND	6.29		5
Chlorobenzene	ND	1.00	ND	4.60		5
Chloroethane	ND	1.00	ND	2.64		5
Chloroform	ND	1.00	ND	4.88		5
Chloromethane	2.10	1.00	4.32	2.06		5
cis-1,2-Dichloroethene	ND	1.00	ND	3.96		5
cis-1,3-Dichloropropene	ND	1.00	ND	4.53		5
Cyclohexane	ND	1.00	ND	3.44		5
Dibromochloromethane	ND	1.00	ND	8.51		5
Dichlorodifluoromethane	1.61	1.00	7.96	4.94		5
Ethylbenzene	ND	1.00	ND	4.34		5
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.00	ND	7.66		5
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.00	ND	6.98		5
Heptane	2.30	1.00	9.42	4.10		5
Hexachlorobutadiene	ND	1.00	ND	10.6		5
n-Hexane	3.77	1.00	13.3	3.52		5
iso-Propyl Alcohol	9.47	2.50	23.2	6.14	J	5
Methylene chloride	ND	2.50	ND	8.68		5
4-Methyl-2-pentanone	1.42	1.00	5.81	4.09		5
Methyl tert butyl ether	ND	1.00	ND	3.60		5
p/m-Xylene	1.10	1.00	4.75	4.34		5
o-Xylene	ND	1.00	ND	4.34		5
Naphthalene	ND	1.00	ND	5.24		5

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-02 D
Client ID: SSSV-3
Sample Location: BROOKLYN, NY
Date Collected: 02/24/10 13:25
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	1.00	ND	4.26		5
tert-Butyl Alcohol	1.84	1.00	5.56	3.03		5
Tetrachloroethene	5.90	1.00	39.9	6.78		5
Thiophene	ND	1.00	ND	3.44		5
Toluene	3.26	1.00	12.3	3.76		5
trans-1,2-Dichloroethene	ND	1.00	ND	3.96		5
trans-1,3-Dichloropropene	ND	1.00	ND	4.53		5
Trichloroethene	ND	1.00	ND	5.37		5
Trichlorofluoromethane	ND	1.00	ND	5.61		5
Vinyl bromide	ND	1.00	ND	4.37		5
Vinyl chloride	ND	1.00	ND	2.55		5
Indane	ND	1.00	ND	4.83		5
Indene	ND	1.00	ND	4.75		5
1-Methylnaphthalene	ND	12.5	ND	72.7		5
2-Methylnaphthalene	ND	12.5	ND	72.7	J	5

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-03
Client ID: SSSV-1
Sample Location: BROOKLYN, NY
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/05/10 03:40
Analyst: RY

Date Collected: 02/25/10 12:43
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	0.200	ND	1.09		1
1,1,2,2-Tetrachloroethane	ND	0.200	ND	1.37		1
1,1,2-Trichloroethane	ND	0.200	ND	1.09		1
1,1-Dichloroethane	ND	0.200	ND	0.809		1
1,1-Dichloroethene	ND	0.200	ND	0.792		1
1,2,3-Trimethylbenzene	0.551	0.200	2.71	0.983		1
1,2,4-Trichlorobenzene	ND	0.200	ND	1.48	J	1
1,2,4-Trimethylbenzene	1.14	0.200	5.59	0.982		1
1,2,4,5-Tetramethylbenzene	ND	2.50	ND	13.7	J	1
1,2-Dibromoethane	ND	0.200	ND	1.54		1
1,2-Dichlorobenzene	ND	0.200	ND	1.20		1
1,2-Dichloroethane	ND	0.200	ND	0.809		1
1,2-Dichloropropane	ND	0.200	ND	0.924		1
1,3,5-Trimethylbenzene	0.285	0.200	1.40	0.982	J	1
1,3-Butadiene	0.675	0.200	1.49	0.442		1
1,3-Dichlorobenzene	ND	0.200	ND	1.20		1
1,4-Dichlorobenzene	0.211	0.200	1.27	1.20	J	1
1,4-Dioxane	ND	0.200	ND	0.720		1
2,2,4-Trimethylpentane	0.486	0.200	2.27	0.934		1
2-Butanone	10.3	0.200	30.4	0.589		1
o-Chlorotoluene	ND	0.200	ND	1.03		1
2-Hexanone	0.814	0.200	3.33	0.819		1
3-Chloropropene	ND	0.200	ND	0.626		1
4-Ethyltoluene	0.307	0.200	1.51	0.982	J	1
Acetone	46.9	1.00	111	2.37		1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-03
Client ID: SSSV-1
Sample Location: BROOKLYN, NY
Date Collected: 02/25/10 12:43
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	35.8	0.200	114	0.638		1
Bromodichloromethane	ND	0.200	ND	1.34		1
Bromoform	ND	0.200	ND	2.06		1
Bromomethane	ND	0.200	ND	0.776		1
Carbon disulfide	0.947	0.200	2.95	0.622		1
Carbon tetrachloride	ND	0.200	ND	1.26		1
Chlorobenzene	ND	0.200	ND	0.920		1
Chloroethane	ND	0.200	ND	0.527		1
Chloroform	ND	0.200	ND	0.976		1
Chloromethane	0.782	0.200	1.61	0.413		1
cis-1,2-Dichloroethene	ND	0.200	ND	0.792		1
cis-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Cyclohexane	0.749	0.200	2.58	0.688		1
Dibromochloromethane	ND	0.200	ND	1.70		1
Dichlorodifluoromethane	0.478	0.200	2.36	0.988		1
Ethylbenzene	1.16	0.200	5.04	0.868		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	ND	1.53		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	ND	1.40		1
Heptane	2.68	0.200	11.0	0.819		1
Hexachlorobutadiene	ND	0.200	ND	2.13		1
n-Hexane	5.54	0.200	19.5	0.704		1
iso-Propyl Alcohol	4.67	0.500	11.5	1.23	J	1
Methylene chloride	ND	0.500	ND	1.74		1
4-Methyl-2-pentanone	0.495	0.200	2.03	0.819		1
Methyl tert butyl ether	ND	0.200	ND	0.720		1
p/m-Xylene	3.01	0.200	13.0	0.868	J	1
o-Xylene	1.69	0.200	7.34	0.868		1
Naphthalene	3.49	0.200	18.3	1.05	J	1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-03
Client ID: SSSV-1
Sample Location: BROOKLYN, NY
Date Collected: 02/25/10 12:43
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	0.994	0.200	4.23	0.851		1
tert-Butyl Alcohol	0.678	0.200	2.06	0.606		1
Tetrachloroethene	5.56	0.200	37.6	1.36		1
Thiophene	ND	0.200	ND	0.688		1
Toluene	16.1	0.200	60.8	0.753		1
trans-1,2-Dichloroethene	ND	0.200	ND	0.792		1
trans-1,3-Dichloropropene	ND	0.200	ND	0.907		1
Trichloroethene	ND	0.200	ND	1.07		1
Trichlorofluoromethane	0.235	0.200	1.32	1.12		1
Vinyl bromide	ND	0.200	ND	0.874		1
Vinyl chloride	ND	0.200	ND	0.511		1
Indane	1.10	0.200	5.29	0.967		1
Indene	2.46	0.200	11.7	0.950	J	1
1-Methylnaphthalene	ND	2.50	ND	14.5		1
2-Methylnaphthalene	ND	2.50	ND	14.5	J	1

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-04 D
Client ID: SSSV-2
Sample Location: BROOKLYN, NY
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/05/10 04:14
Analyst: RY

Date Collected: 02/25/10 13:38
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	1.00	ND	5.45		5
1,1,2,2-Tetrachloroethane	ND	1.00	ND	6.86		5
1,1,2-Trichloroethane	ND	1.00	ND	5.45		5
1,1-Dichloroethane	ND	1.00	ND	4.04		5
1,1-Dichloroethene	ND	1.00	ND	3.96		5
1,2,3-Trimethylbenzene	ND	1.00	ND	4.92		5
1,2,4-Trichlorobenzene	ND	1.00	ND	7.42	J	5
1,2,4-Trimethylbenzene	ND	1.00	ND	4.91		5
1,2,4,5-Tetramethylbenzene	ND	12.5	ND	68.6	J	5
1,2-Dibromoethane	ND	1.00	ND	7.68		5
1,2-Dichlorobenzene	ND	1.00	ND	6.01		5
1,2-Dichloroethane	ND	1.00	ND	4.04		5
1,2-Dichloropropane	ND	1.00	ND	4.62		5
1,3,5-Trimethylbenzene	ND	1.00	ND	4.91		5
1,3-Butadiene	1.09	1.00	2.41	2.21		5
1,3-Dichlorobenzene	ND	1.00	ND	6.01		5
1,4-Dichlorobenzene	ND	1.00	ND	6.01		5
1,4-Dioxane	ND	1.00	ND	3.60		5
2,2,4-Trimethylpentane	ND	1.00	ND	4.67		5
2-Butanone	4.79	1.00	14.1	2.95		5
o-Chlorotoluene	ND	1.00	ND	5.17		5
2-Hexanone	ND	1.00	ND	4.10		5
3-Chloropropene	ND	1.00	ND	3.13		5
4-Ethyltoluene	ND	1.00	ND	4.91		5
Acetone	24.7	5.00	58.7	11.9		5

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-04 D
Client ID: SSSV-2
Sample Location: BROOKLYN, NY
Date Collected: 02/25/10 13:38
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	ND	1.00	ND	3.19		5
Bromodichloromethane	ND	1.00	ND	6.70		5
Bromoform	ND	1.00	ND	10.3		5
Bromomethane	ND	1.00	ND	3.88		5
Carbon disulfide	1.02	1.00	3.17	3.11		5
Carbon tetrachloride	ND	1.00	ND	6.29		5
Chlorobenzene	ND	1.00	ND	4.60		5
Chloroethane	ND	1.00	ND	2.64		5
Chloroform	ND	1.00	ND	4.88		5
Chloromethane	ND	1.00	ND	2.06		5
cis-1,2-Dichloroethene	ND	1.00	ND	3.96		5
cis-1,3-Dichloropropene	ND	1.00	ND	4.53		5
Cyclohexane	ND	1.00	ND	3.44		5
Dibromochloromethane	ND	1.00	ND	8.51		5
Dichlorodifluoromethane	ND	1.00	ND	4.94		5
Ethylbenzene	ND	1.00	ND	4.34		5
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.00	ND	7.66		5
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.00	ND	6.98		5
Heptane	1.00	1.00	4.12	4.10		5
Hexachlorobutadiene	ND	1.00	ND	10.6		5
n-Hexane	2.16	1.00	7.61	3.52		5
iso-Propyl Alcohol	ND	2.50	ND	6.14	J	5
Methylene chloride	ND	2.50	ND	8.68		5
4-Methyl-2-pentanone	ND	1.00	ND	4.09		5
Methyl tert butyl ether	ND	1.00	ND	3.60		5
p/m-Xylene	ND	1.00	ND	4.34		5
o-Xylene	ND	1.00	ND	4.34		5
Naphthalene	5.16	1.00	27.0	5.24		5

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-04 D
Client ID: SSSV-2
Sample Location: BROOKLYN, NY
Date Collected: 02/25/10 13:38
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	1.00	ND	4.26		5
tert-Butyl Alcohol	ND	1.00	ND	3.03		5
Tetrachloroethene	1.25	1.00	8.47	6.78		5
Thiophene	ND	1.00	ND	3.44		5
Toluene	1.88	1.00	7.10	3.76		5
trans-1,2-Dichloroethene	ND	1.00	ND	3.96		5
trans-1,3-Dichloropropene	ND	1.00	ND	4.53		5
Trichloroethene	ND	1.00	ND	5.37		5
Trichlorofluoromethane	ND	1.00	ND	5.61		5
Vinyl bromide	ND	1.00	ND	4.37		5
Vinyl chloride	ND	1.00	ND	2.55		5
Indane	1.55	1.00	7.49	4.83		5
Indene	ND	1.00	ND	4.75		5
1-Methylnaphthalene	ND	12.5	ND	72.7		5
2-Methylnaphthalene	ND	12.5	ND	72.7	J	5

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-05 D
Client ID: DUP022510
Sample Location: BROOKLYN, NY
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/05/10 04:49
Analyst: RY

Date Collected: 02/25/10 00:00
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	1.00	ND	5.45		5
1,1,2,2-Tetrachloroethane	ND	1.00	ND	6.86		5
1,1,2-Trichloroethane	ND	1.00	ND	5.45		5
1,1-Dichloroethane	ND	1.00	ND	4.04		5
1,1-Dichloroethene	ND	1.00	ND	3.96		5
1,2,3-Trimethylbenzene	ND	1.00	ND	4.92		5
1,2,4-Trichlorobenzene	ND	1.00	ND	7.42	J	5
1,2,4-Trimethylbenzene	ND	1.00	ND	4.91		5
1,2,4,5-Tetramethylbenzene	ND	12.5	ND	68.6	J	5
1,2-Dibromoethane	ND	1.00	ND	7.68		5
1,2-Dichlorobenzene	ND	1.00	ND	6.01		5
1,2-Dichloroethane	ND	1.00	ND	4.04		5
1,2-Dichloropropane	ND	1.00	ND	4.62		5
1,3,5-Trimethylbenzene	ND	1.00	ND	4.91	J	5
1,3-Butadiene	ND	1.00	ND	2.21		5
1,3-Dichlorobenzene	ND	1.00	ND	6.01		5
1,4-Dichlorobenzene	ND	1.00	ND	6.01	J	5
1,4-Dioxane	ND	1.00	ND	3.60		5
2,2,4-Trimethylpentane	ND	1.00	ND	4.67		5
2-Butanone	8.38	1.00	24.7	2.95		5
o-Chlorotoluene	ND	1.00	ND	5.17		5
2-Hexanone	ND	1.00	ND	4.10		5
3-Chloropropene	ND	1.00	ND	3.13		5
4-Ethyltoluene	ND	1.00	ND	4.91	J	5
Acetone	39.5	5.00	93.7	11.9		5

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-05 D
Client ID: DUP022510
Sample Location: BROOKLYN, NY
Date Collected: 02/25/10 00:00
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	32.6	1.00	104	3.19		5
Bromodichloromethane	ND	1.00	ND	6.70		5
Bromoform	ND	1.00	ND	10.3		5
Bromomethane	ND	1.00	ND	3.88		5
Carbon disulfide	ND	1.00	ND	3.11		5
Carbon tetrachloride	ND	1.00	ND	6.29		5
Chlorobenzene	ND	1.00	ND	4.60		5
Chloroethane	ND	1.00	ND	2.64		5
Chloroform	ND	1.00	ND	4.88		5
Chloromethane	ND	1.00	ND	2.06		5
cis-1,2-Dichloroethene	ND	1.00	ND	3.96		5
cis-1,3-Dichloropropene	ND	1.00	ND	4.53		5
Cyclohexane	ND	1.00	ND	3.44		5
Dibromochloromethane	ND	1.00	ND	8.51		5
Dichlorodifluoromethane	ND	1.00	ND	4.94		5
Ethylbenzene	ND	1.00	ND	4.34		5
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.00	ND	7.66		5
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	1.00	ND	6.98		5
Heptane	2.28	1.00	9.36	4.10		5
Hexachlorobutadiene	ND	1.00	ND	10.6		5
n-Hexane	5.42	1.00	19.1	3.52		5
iso-Propyl Alcohol	4.30	2.50	10.5	6.14	J	5
Methylene chloride	ND	2.50	ND	8.68		5
4-Methyl-2-pentanone	ND	1.00	ND	4.09		5
Methyl tert butyl ether	ND	1.00	ND	3.60		5
p/m-Xylene	2.10	1.00	9.13	4.34	J	5
o-Xylene	1.19	1.00	5.16	4.34		5
Naphthalene	2.04	1.00	10.7	5.24	J	5

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1002956
Report Date: 03/05/10

SAMPLE RESULTS

Lab ID: L1002956-05 D
Client ID: DUP022510
Sample Location: BROOKLYN, NY
Date Collected: 02/25/10 00:00
Date Received: 02/27/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	1.00	ND	4.26		5
tert-Butyl Alcohol	ND	1.00	ND	3.03		5
Tetrachloroethene	5.06	1.00	34.2	6.78		5
Thiophene	ND	1.00	ND	3.44		5
Toluene	12.5	1.00	47.1	3.76		5
trans-1,2-Dichloroethene	ND	1.00	ND	3.96		5
trans-1,3-Dichloropropene	ND	1.00	ND	4.53		5
Trichloroethene	ND	1.00	ND	5.37		5
Trichlorofluoromethane	ND	1.00	ND	5.61		5
Vinyl bromide	ND	1.00	ND	4.37		5
Vinyl chloride	ND	1.00	ND	2.55		5
Indane	ND	1.00	ND	4.83		5
Indene	1.26	1.00	6.01	4.75	J	5
1-Methylnaphthalene	ND	12.5	ND	72.7		5
2-Methylnaphthalene	ND	12.5	ND	72.7	J	5

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AIR ANALYSIS

ALPHA ANALYTICAL

CHAIN OF CUSTODY

PAGE 1 OF 1

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 2/28/10

ALPHA Job #: L1002956

Client Information

Client: Arcadis
Address: 2 Huntington Quadrangle Suite 1510, Melville, NY 11747
Phone: 631-249-7600
Fax: 631-249-7610
Email: chris.keen@arcadis-us.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Former Bangmer Park MGP site
Project Location: Brooklyn, NY
Project #: B0036704.0000.00005
Project Manager: Chris Keen
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 3/5/10 Time:

Report Information - Data Deliverables

☐ FAX
☐ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☐ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (If different than Project Manager)

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed	Program	Criteria

Other Project Specific Requirements/Comments:

All Columns Below Must Be Filled Out

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-14A by TO-15	TO-15 + NY pet ind. comp.	TO-15 SIM	APH	FIXED GASES	TO-13A	TO-4 / TO-10	Sample Comments (i.e. PID)
2956. 1	SSSV-4	2/24/10	1346	1454	-29	-7	AA	OP	6L	923	0252		X						
2	SSSV-3	2/24/10	1252	1325	-29	-7	AA	OP	6L	979	0048		X						
3	SSSV-1	2/25/10	12:14	12:43	-28.5	-6	AA	OP	6L	1679	0368		X						
4	SSSV-2	2/25/10	1308	1338	-28.5	-7	AA	OP	6L	1638	0358		X						
5	DUP022510	2/25/10	—	—	-28	-6	AA	OP	6L	705	0267		X						

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type: CS

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Relinquished By:	Date/Time	Received By:	Date/Time:
Pat Prozonski	2/25/10 2100	RPearson	2-26-10/11:05
RPearson	2-26-10/1045	THuddle	2/26/10 2245
THuddle	2/26/10 105AM	[illegible]	2/26/10 1105
Kim Bailey	3/1/10 945	[illegible]	3-1-10 9:45 AM

[illegible] 3/1/10 1050

[illegible] Sullivan 3/1/10 10:50

Form No: 101-02 (19-Jun-09)

ARCADIS
Infrastructure, environment, buildings

Imagine the result

Former Dangman Park MGP Site

Data Usability Summary Report

BROOKLYN, NEW YORK

Volatile Analyses

SDG# L1003075

Analyses Performed By:
Alpha Analytical
Mansfield, Massachusetts

Report: #11762R
Review Level: Tier III
Project: B0036704.0000.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # L1003075 for samples collected in association with the Former Dangman Park 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. 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
SSSV-7	L1003075-01	Air	3/1/2010		X				
SSSV-5	L1003075-02	Air	3/1/2010		X				
SSSV-6	L1003075-03	Air	3/1/2010		X				

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Sample receipt condition		X		X	
Requested analyses and sample results		X		X	
Collection Technique (grab, composite, etc.)		X		X	
Methods of analysis		X		X	
Reporting limits		X		X	
Sample collection date		X		X	
Laboratory sample received date		X		X	
Sample preservation verification (as applicable)		X		X	
Sample preparation/extraction/analysis dates		X		X	
Fully executed Chain-of-Custody (COC) form completed		X		X	
Narrative summary of QA or sample problems provided		X		X	
Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

INTRODUCTION

Analyses were performed according to United States 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 of October 2006, New York State DEC Analytical Method ASP 2005 TO-15 (QA/QC Criteria R9 TO-15) and NYSDEC Modifications to R9 TO-15 QA/QC Criteria February 2008.

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.

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 reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Several sample locations were 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.

Mass spectrometer performance was acceptable.

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 standards must exhibit a %RSD less than the control limit (30%) and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (30%) and 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/Continuing	Compound	Criteria
All sample locations associated with this SDG	ICV %RSD	1,2,4,5-Trimethylbenzene	31.2%
		1,2,4-Trichlorobenzene	33.0%
		2-Methylnaphthalene	39.8%
	CCV %D	Iso-Propyl alcohol	-30.9%
		1-Methylnaphthalene	37.8%
		2-Methylnaphthalene	46.8%

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 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., ketenes, 1,4-dioxane, etc.)

5. 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% or less than 40% of the area counts of the associated continuing

calibration standard.

All internal standard responses were within control limits.

6. 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%. The relative percent difference (RPD) between the LCS recoveries must exhibit an RPD within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

7. Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for air matrices is applied when the criteria above is true. 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 three times the RL is applied for air matrices.

The laboratory duplicates exhibited acceptable results.

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 100% for air matrices 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 three times the RL is applied for air matrices.

A field duplicate was not included with this SDG.

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
SSSV-6	Tetrachloroethene	55200 E	89400 D	89400 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

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; TO-15	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Canister return pressure/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
Matrix Spike (MS)					X
Matrix Spike Duplicate(MSD)					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (%D)					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	

VOCs; TO-15	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
D. Transcription/calculation errors present				X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

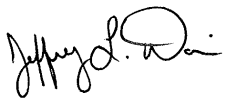
%RSD Percent relative difference
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SAMPLE COMPLIANCE REPORT

Sample Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	Compliancy[1]					Noncompliance
					VOC	SVOC	PCB/PEST /HERB	MET	MISC	
L1003075	3/1/2010	TO-15	SSSV-7	Air	No	--	--	--	--	VOC –ICV %RSD, CCV %D
L1003075	3/1/2010	TO-15	SSSV-5	Air	No	--	--	--	--	VOC –ICV %RSD, CCV %D
L1003075	3/1/2010	TO-15	SSSV-6	Air	No	--	--	--	--	VOC –ICV %RSD, CCV %D

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: Jeffrey L. Davin

SIGNATURE: 

DATE: March 12, 2010

PEER REVIEW BY: Dennis Capria

DATE: March 17, 2010

CORRECTED SAMPLE ANALYSIS DATA SHEETS AND COCs

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1003075
Report Date: 03/09/10

SAMPLE RESULTS

Lab ID: L1003075-01
Client ID: SSSV-7
Sample Location: BROOKLYN, NY
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/05/10 08:54
Analyst: RY

Date Collected: 03/01/10 12:00
Date Received: 03/02/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	0.400	ND	2.18		2
1,1,2,2-Tetrachloroethane	ND	0.400	ND	2.74		2
1,1,2-Trichloroethane	ND	0.400	ND	2.18		2
1,1-Dichloroethane	ND	0.400	ND	1.62		2
1,1-Dichloroethene	ND	0.400	ND	1.58		2
1,2,3-Trimethylbenzene	ND	0.400	ND	1.97		2
1,2,4-Trichlorobenzene	ND	0.400	ND	2.97	J	2
1,2,4-Trimethylbenzene	ND	0.400	ND	1.96		2
1,2,4,5-Tetramethylbenzene	ND	5.00	ND	27.4	J	2
1,2-Dibromoethane	ND	0.400	ND	3.07		2
1,2-Dichlorobenzene	ND	0.400	ND	2.40		2
1,2-Dichloroethane	ND	0.400	ND	1.62		2
1,2-Dichloropropane	ND	0.400	ND	1.85		2
1,3,5-Trimethylbenzene	ND	0.400	ND	1.96		2
1,3-Butadiene	ND	0.400	ND	0.884		2
1,3-Dichlorobenzene	ND	0.400	ND	2.40		2
1,4-Dichlorobenzene	ND	0.400	ND	2.40		2
1,4-Dioxane	ND	0.400	ND	1.44		2
2,2,4-Trimethylpentane	ND	0.400	ND	1.87		2
2-Butanone	1.66	0.400	4.89	1.18		2
o-Chlorotoluene	ND	0.400	ND	2.07		2
2-Hexanone	ND	0.400	ND	1.64		2
3-Chloropropene	ND	0.400	ND	1.25		2
4-Ethyltoluene	ND	0.400	ND	1.96		2
Acetone	5.63	2.00	13.4	4.75		2

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1003075
Report Date: 03/09/10

SAMPLE RESULTS

Lab ID: L1003075-01
Client ID: SSSV-7
Sample Location: BROOKLYN, NY
Date Collected: 03/01/10 12:00
Date Received: 03/02/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	ND	0.400	ND	1.28		2
Bromodichloromethane	ND	0.400	ND	2.68		2
Bromoform	ND	0.400	ND	4.13		2
Bromomethane	ND	0.400	ND	1.55		2
Carbon disulfide	ND	0.400	ND	1.24		2
Carbon tetrachloride	ND	0.400	ND	2.51		2
Chlorobenzene	ND	0.400	ND	1.84		2
Chloroethane	ND	0.400	ND	1.05		2
Chloroform	1.60	0.400	7.80	1.95		2
Chloromethane	ND	0.400	ND	0.825		2
cis-1,2-Dichloroethene	ND	0.400	ND	1.58		2
cis-1,3-Dichloropropene	ND	0.400	ND	1.81		2
Cyclohexane	ND	0.400	ND	1.38		2
Dibromochloromethane	0.404	0.400	3.44	3.40		2
Dichlorodifluoromethane	0.448	0.400	2.21	1.98		2
Ethylbenzene	ND	0.400	ND	1.74		2
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.400	ND	3.06		2
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.400	ND	2.79		2
Heptane	0.484	0.400	1.98	1.64		2
Hexachlorobutadiene	ND	0.400	ND	4.26		2
n-Hexane	2.00	0.400	7.04	1.41		2
iso-Propyl Alcohol	ND	1.00	ND	2.46	J	2
Methylene chloride	ND	1.00	ND	3.47		2
4-Methyl-2-pentanone	ND	0.400	ND	1.64		2
Methyl tert butyl ether	ND	0.400	ND	1.44		2
p/m-Xylene	ND	0.400	ND	1.74		2
o-Xylene	ND	0.400	ND	1.74		2
Naphthalene	ND	0.400	ND	2.10		2

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1003075
Report Date: 03/09/10

SAMPLE RESULTS

Lab ID: L1003075-01
Client ID: SSSV-7
Sample Location: BROOKLYN, NY
Date Collected: 03/01/10 12:00
Date Received: 03/02/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	10.1	0.400	42.9	1.70		2
tert-Butyl Alcohol	ND	0.400	ND	1.21		2
Tetrachloroethene	5.67	0.400	38.4	2.71		2
Thiophene	ND	0.400	ND	1.38		2
Toluene	ND	0.400	ND	1.51		2
trans-1,2-Dichloroethene	ND	0.400	ND	1.58		2
trans-1,3-Dichloropropene	ND	0.400	ND	1.81		2
Trichloroethene	ND	0.400	ND	2.15		2
Trichlorofluoromethane	0.402	0.400	2.26	2.24		2
Vinyl bromide	ND	0.400	ND	1.75		2
Vinyl chloride	ND	0.400	ND	1.02		2
Indane	ND	0.400	ND	1.93		2
Indene	ND	0.400	ND	1.90		2
1-Methylnaphthalene	ND	5.00	ND	29.1		2
2-Methylnaphthalene	ND	5.00	ND	29.1	J	2

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1003075
Report Date: 03/09/10

SAMPLE RESULTS

Lab ID: L1003075-02 R\D2
Client ID: SSSV-5
Sample Location: BROOKLYN, NY
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/05/10 12:34
Analyst: RY

Date Collected: 03/01/10 08:12
Date Received: 03/02/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	2.00	ND	10.9		10
1,1,2,2-Tetrachloroethane	ND	2.00	ND	13.7		10
1,1,2-Trichloroethane	ND	2.00	ND	10.9		10
1,1-Dichloroethane	ND	2.00	ND	8.09		10
1,1-Dichloroethene	ND	2.00	ND	7.92		10
1,2,3-Trimethylbenzene	ND	2.00	ND	9.83		10
1,2,4-Trichlorobenzene	ND	2.00	ND	14.8	J	10
1,2,4-Trimethylbenzene	ND	2.00	ND	9.82		10
1,2,4,5-Tetramethylbenzene	ND	25.0	ND	137.	J	10
1,2-Dibromoethane	ND	2.00	ND	15.4		10
1,2-Dichlorobenzene	ND	2.00	ND	12.0		10
1,2-Dichloroethane	ND	2.00	ND	8.09		10
1,2-Dichloropropane	ND	2.00	ND	9.24		10
1,3,5-Trimethylbenzene	ND	2.00	ND	9.82		10
1,3-Butadiene	ND	2.00	ND	4.42		10
1,3-Dichlorobenzene	ND	2.00	ND	12.0		10
1,4-Dichlorobenzene	ND	2.00	ND	12.0		10
1,4-Dioxane	ND	2.00	ND	7.20		10
2,2,4-Trimethylpentane	ND	2.00	ND	9.34		10
2-Butanone	24.9	2.00	73.4	5.89		10
o-Chlorotoluene	ND	2.00	ND	10.3		10
2-Hexanone	ND	2.00	ND	8.19		10
3-Chloropropene	ND	2.00	ND	6.26		10
4-Ethyltoluene	ND	2.00	ND	9.82		10
Acetone	80.4	10.0	191	23.7		10

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1003075
Report Date: 03/09/10

SAMPLE RESULTS

Lab ID: L1003075-02 R\D2
Client ID: SSSV-5
Sample Location: BROOKLYN, NY
Date Collected: 03/01/10 08:12
Date Received: 03/02/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	16.4	2.00	52.4	6.38		10
Bromodichloromethane	ND	2.00	ND	13.4		10
Bromoform	ND	2.00	ND	20.6		10
Bromomethane	ND	2.00	ND	7.76		10
Carbon disulfide	3.09	2.00	9.61	6.22		10
Carbon tetrachloride	ND	2.00	ND	12.6		10
Chlorobenzene	ND	2.00	ND	9.20		10
Chloroethane	ND	2.00	ND	5.27		10
Chloroform	ND	2.00	ND	9.76		10
Chloromethane	ND	2.00	ND	4.13		10
cis-1,2-Dichloroethene	ND	2.00	ND	7.92		10
cis-1,3-Dichloropropene	ND	2.00	ND	9.07		10
Cyclohexane	154	2.00	531	6.88		10
Dibromochloromethane	ND	2.00	ND	17.0		10
Dichlorodifluoromethane	ND	2.00	ND	9.88		10
Ethylbenzene	ND	2.00	ND	8.68		10
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	2.00	ND	15.3		10
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	2.00	ND	14.0		10
Heptane	98.0	2.00	401	8.19		10
Hexachlorobutadiene	ND	2.00	ND	21.3		10
n-Hexane	404	2.00	1420	7.04		10
iso-Propyl Alcohol	ND	5.00	ND	12.3	J	10
Methylene chloride	6.10	5.00	21.2	17.4		10
4-Methyl-2-pentanone	ND	2.00	ND	8.19		10
Methyl tert butyl ether	ND	2.00	ND	7.20		10
p/m-Xylene	ND	2.00	ND	8.68		10
o-Xylene	ND	2.00	ND	8.68		10
Naphthalene	2.36	2.00	12.4	10.5		10

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1003075
Report Date: 03/09/10

SAMPLE RESULTS

Lab ID: L1003075-02 R\D2
Client ID: SSSV-5
Sample Location: BROOKLYN, NY
Date Collected: 03/01/10 08:12
Date Received: 03/02/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	2.00	ND	8.51		10
tert-Butyl Alcohol	ND	2.00	ND	6.06		10
Tetrachloroethene	ND	2.00	ND	13.6		10
Thiophene	ND	2.00	ND	6.88		10
Toluene	2.83	2.00	10.6	7.53		10
trans-1,2-Dichloroethene	ND	2.00	ND	7.92		10
trans-1,3-Dichloropropene	ND	2.00	ND	9.07		10
Trichloroethene	ND	2.00	ND	10.7		10
Trichlorofluoromethane	ND	2.00	ND	11.2		10
Vinyl bromide	ND	2.00	ND	8.74		10
Vinyl chloride	ND	2.00	ND	5.11		10
Indane	ND	2.00	ND	9.67		10
Indene	ND	2.00	ND	9.50		10
1-Methylnaphthalene	ND	25.0	ND	145.		10
2-Methylnaphthalene	ND	25.0	ND	145.	J	10

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1003075
Report Date: 03/09/10

SAMPLE RESULTS

Lab ID: L1003075-03 D
Client ID: SSSV-6
Sample Location: BROOKLYN, NY
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/05/10 10:51
Analyst: RY

Date Collected: 03/01/10 09:54
Date Received: 03/02/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
1,1,1-Trichloroethane	ND	45.5	ND	248.		227.7
1,1,2,2-Tetrachloroethane	ND	45.5	ND	312.		227.7
1,1,2-Trichloroethane	ND	45.5	ND	248.		227.7
1,1-Dichloroethane	ND	45.5	ND	184.		227.7
1,1-Dichloroethene	ND	45.5	ND	180.		227.7
1,2,3-Trimethylbenzene	ND	45.5	ND	224.		227.7
1,2,4-Trichlorobenzene	ND	45.5	ND	338.	J	227.7
1,2,4-Trimethylbenzene	ND	45.5	ND	224.		227.7
1,2,4,5-Tetramethylbenzene	ND	569.	ND	3120	J	227.7
1,2-Dibromoethane	ND	45.5	ND	350.		227.7
1,2-Dichlorobenzene	ND	45.5	ND	274.		227.7
1,2-Dichloroethane	ND	45.5	ND	184.		227.7
1,2-Dichloropropane	ND	45.5	ND	210.		227.7
1,3,5-Trimethylbenzene	ND	45.5	ND	224.		227.7
1,3-Butadiene	ND	45.5	ND	101.		227.7
1,3-Dichlorobenzene	ND	45.5	ND	274.		227.7
1,4-Dichlorobenzene	ND	45.5	ND	274.		227.7
1,4-Dioxane	ND	45.5	ND	164.		227.7
2,2,4-Trimethylpentane	ND	45.5	ND	212.		227.7
2-Butanone	ND	45.5	ND	134.		227.7
o-Chlorotoluene	ND	45.5	ND	236.		227.7
2-Hexanone	ND	45.5	ND	186.		227.7
3-Chloropropene	ND	45.5	ND	142.		227.7
4-Ethyltoluene	ND	45.5	ND	224.		227.7
Acetone	ND	228.	ND	540.		227.7

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1003075
Report Date: 03/09/10

SAMPLE RESULTS

Lab ID: L1003075-03 D
Client ID: SSSV-6
Sample Location: BROOKLYN, NY
Date Collected: 03/01/10 09:54
Date Received: 03/02/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Benzene	ND	45.5	ND	145		227.7
Bromodichloromethane	ND	45.5	ND	305.		227.7
Bromoform	ND	45.5	ND	470.		227.7
Bromomethane	ND	45.5	ND	177.		227.7
Carbon disulfide	ND	45.5	ND	142.		227.7
Carbon tetrachloride	ND	45.5	ND	286.		227.7
Chlorobenzene	ND	45.5	ND	209.		227.7
Chloroethane	ND	45.5	ND	120.		227.7
Chloroform	ND	45.5	ND	222		227.7
Chloromethane	ND	45.5	ND	94.0		227.7
cis-1,2-Dichloroethene	428	45.5	1700	180		227.7
cis-1,3-Dichloropropene	ND	45.5	ND	206.		227.7
Cyclohexane	ND	45.5	ND	157.		227.7
Dibromochloromethane	ND	45.5	ND	388.		227.7
Dichlorodifluoromethane	ND	45.5	ND	225.		227.7
Ethylbenzene	ND	45.5	ND	198.		227.7
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	45.5	ND	349.		227.7
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	45.5	ND	318.		227.7
Heptane	ND	45.5	ND	186.		227.7
Hexachlorobutadiene	ND	45.5	ND	485.		227.7
n-Hexane	ND	45.5	ND	160		227.7
iso-Propyl Alcohol	ND	114.	ND	280.	J	227.7
Methylene chloride	ND	114	ND	395		227.7
4-Methyl-2-pentanone	ND	45.5	ND	186.		227.7
Methyl tert butyl ether	ND	45.5	ND	164.		227.7
p/m-Xylene	ND	45.5	ND	198.		227.7
o-Xylene	ND	45.5	ND	198.		227.7
Naphthalene	ND	45.5	ND	238.		227.7

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005
Lab Number: L1003075
Report Date: 03/09/10

SAMPLE RESULTS

Lab ID: L1003075-03 D
Client ID: SSSV-6
Sample Location: BROOKLYN, NY
Date Collected: 03/01/10 09:54
Date Received: 03/02/10
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RDL	ug/m3 Results	ug/m3 RDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab						
Styrene	ND	45.5	ND	194.		227.7
tert-Butyl Alcohol	ND	45.5	ND	138.		227.7
Tetrachloroethene	89400 ~~55200~~ 182	~~45.5~~	606000 ~~374000~~ 1230	~~309~~	~~E~~ D	227.7
Thiophene	ND	45.5	ND	157.		227.7
Toluene	ND	45.5	ND	171.		227.7
trans-1,2-Dichloroethene	ND	45.5	ND	180		227.7
trans-1,3-Dichloropropene	ND	45.5	ND	206.		227.7
Trichloroethene	5220	45.5	28000	244		227.7
Trichlorofluoromethane	ND	45.5	ND	256.		227.7
Vinyl bromide	ND	45.5	ND	199.		227.7
Vinyl chloride	82.4	45.5	210	116		227.7
Indane	ND	45.5	ND	220.		227.7
Indene	ND	45.5	ND	216.		227.7
1-Methylnaphthalene	ND	569.	ND	3310		227.7
2-Methylnaphthalene	ND	569.	ND	3310	J	227.7

Project Name: FORMER DANGMAN PARK MGP SITE
Project Number: B0036704.0000.00005

Lab Number: L1003075
Report Date: 03/09/10

SAMPLE RESULTS

Lab ID: L1003075-03 R\D
Client ID: SSSV-6
Sample Location: BROOKLYN, NY
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 03/05/10 13:08
Analyst: RY

Date Collected: 03/01/10 09:54
Date Received: 03/02/10
Field Prep: Not Specified

	ppbV		ug/m3			Dilution
Parameter	**Results**	**RDL**	**Results**	**RDL**	**Qualifier**	**Factor**
Volatile Organics in Air - Mansfield Lab						
Tetrachloroethene	89400	182	606000	1230		911.1

03091013:37

AIR ANALYSIS

ALPHA ANALYTICAL

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 3/2/10

ALPHA Job #: L1003075

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Arcadis
Address: 2 Huntington Quadrangle
Suite 1S10, Melville, NY 11747
Phone: 631-249-7600
Fax: 631-249-7610
Email: chris.keen@arcadis-us.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: former Dangman Park MGP site
Project Location: Brooklyn, NY
Project #: B0036704.0000.00005
Project Manager: chris keen
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: 3/9/10 Time:

Report Information - Data Deliverables

☐ FAX
☐ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☐ EMAIL (standard pdf report)
☐ Additional Deliverables:

Report to: (if different than Project Manager)

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed	Program	Criteria

Other Project Specific Requirements/Comments:

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-14A by TO-15	TO-15 + NY petroleum group	TO-15 SIM	APH	FIXED GASES	TO-13A	TO-4 / TO-10	Sample Comments (i.e. PID)
03075 .1	SSSV-7	3/1/10	11:32 AM	12:00	-30	-12	AA	PP	6L	963	0327		X						
2	SSSV-5	3/1/10	7:14 AM	8:12 AM	-28	-7	AA	PP	6L	652	0269		X						
3	SSSV-6	3/1/10	9:25 AM	9:54 AM	-30	-12	AA	PP	6L	1635	0287		X						

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type: CS

Relinquished By:	Date/Time	Received By:	Date/Time:
Pat Cryonk	3/1/10 1930	R Pearson	3-2-10 / 9:50
R Pearson	3-2-10 / 1650	S Woelk	3/2/10 1650
S Woelk	3/2/10 1805	T Thrasher	3/2/10 1805
T Thrasher	2030		3/2/10 2030

Rel: P. Gilbert 3/3/10 10:10
Rec: Eileen Sullivan 3/3/10 10:10
Rec: P. Gilbert 3/3/10 9:20

2 3/2/10

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Form No: 101-02 (19-Jun-09)