

DECISION DOCUMENT

Cornerstone Site B 1 Off-site
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203044A
March 2013



Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - DECISION DOCUMENT

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Bronx, Bronx County
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Statement of Purpose and Basis

This document presents the remedy for the Cornerstone Site B 1 Off-site site, a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Cornerstone Site B 1 Off-site site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

Based on the findings of the investigation of the site, the past disposal of contaminants at the site does not pose a threat to public health and the environment. Therefore, the selected remedy is No Action.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

March 29, 2013

Date



Robert Cozzy, Director
Remedial Bureau B

DECISION DOCUMENT

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Bronx, Bronx County
Site No. C203044A
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SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the off-site area of the above referenced Brownfield Cleanup Program (BCP) site. Based on the findings of the investigation of this off-site area the past disposal of contaminants at the BCP site does not pose a threat to public health and the environment at this off-site area. Therefore, the selected remedy is No Action. Contaminants include hazardous wastes and/or petroleum.

Brownfield sites, determined by the Department to be “significant threat” sites, require investigation and/or remediation of “off-site” areas as appropriate. This Decision Document addresses the off-site areas investigated.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

Bronx Community Board 1
Attn: Cedric Loftin
3024 Third Avenue
Bronx, NY 10455
Phone: (718) 585-7117

New York Public Library – Woodstock Branch
Attn: Ms. Corey Rodriguez
761 East 160th Street
Bronx, NY 10456
Phone: (718) 665-6255

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The off-site area is located downgradient from the Cornerstone Site B 1 Brownfield Cleanup Program (BCP) site and includes most of the area south of E. 158th Street between 3rd Avenue and Brook Avenue in Bronx County, New York.

Site Features: The off-site area is bordered by E. 158th Street, 3rd Ave, E. 157th Street and Brook Ave. Most of the site area is paved.

Current Zoning and Land Use: The off-site area is currently a City owned park and playground. The other sides of 3rd Avenue (to the west) and Brook Avenue (to the east) have multi-storied residential apartment buildings.

Historic uses: In 1909 Public School No. 038 and a coal bunker were present at the off-site area. By 1951 there was no building on the property and from 1969 to the present the site has been used as a playground.

Site Geology and Hydrology: The bedrock in the area consists of dolomite limestone and marble and is very shallow at the north end of the off-site area and is deeper to the south. Bedrock slopes to the southeast across the site. Per the September 2012 Remedial Investigation Report (RIR), the depth of groundwater varies from 20 to 35 feet below ground surface. Based on two sampling events (December 2011 and February 2012) the groundwater flow directions have been determined to be towards the southeast and southwest respectively.

A location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the off-site area when evaluating a remedy for soil remediation. For this area, an alternative which allows for unrestricted use of the site was evaluated.

A comparison of the results of the investigation against unrestricted use standards, criteria and guidance values (SCGs) for the site contaminants is available in the Remedial Investigation (RI)

Report.

SECTION 5: ENFORCEMENT STATUS

The PRPs for the site declined to implement a remedial program when requested by the Department. The PRPs are subject to legal actions by the state for recovery of all response costs the state has incurred.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

The remedial investigation (RI) is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this area includes data for:

- groundwater
- soil
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require

evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

TETRACHLOROETHYLENE (PCE) CHLOROFORM

Based on the investigation results, comparison to the SCGs, and an evaluation of potential public health and environmental exposure routes, no remediation is required for this site. More complete information can be found in the RI Report.

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

There were no IRMs performed during the RI.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site to the off-site area. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination: This area is located downgradient from the Cornerstone Site B1, BCP site. The primary contaminant of concern for the off-site area is tetrachloroethylene (PCE) in groundwater. Very low levels of PCE (9 ppb) were detected in groundwater from one overburden well. The level of PCE was slightly above the New York State Groundwater Quality (NYSGWQ) standards of 5 ppb. PCE concentrations in all five bedrock monitoring wells were below the NYSGWQ standard. Chloroform was detected above its NYSGWQ standard at concentrations up to 82 ppb. However, the area is served by public water, local groundwater use restrictions are in place, and the source of this chloroform contamination was addressed by the remedy for the Cornerstone Site B 1 site itself. Due to these factors, no remedy is needed to address this media.

PCE, acetone and chloroform were also detected in several soil vapor samples in concentrations above the laboratory detection limits. The level of PCE concentrations in soil vapor ranges from 0.69 to 22 $\mu\text{g}/\text{m}^3$ and for acetone the concentrations range from 95 to 110 $\mu\text{g}/\text{m}^3$. For chloroform the concentrations range from 8.2 to 23 $\mu\text{g}/\text{m}^3$, with the exception of the results from the furthest downgradient sample (SV-3, located south of 157th Street) which was 1000 $\mu\text{g}/\text{m}^3$. Since the soil vapor concentrations for chloroform closer to the site are relatively low, the concentration detected at SV-3 is not considered to be site related. Since the soil vapor results for PCE and chloroform (related to the site) are relatively low, no remedy is needed to address the vapor media.

Special Resources Impacted/Threatened: This is an urban area and Fish and Wildlife Impact Analysis is not warranted.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

People are not drinking site related contaminants in drinking water since the area is served by a public water supply not affected by this contamination. Volatile organic compounds may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air or buildings, is referred to as soil vapor intrusion. Sampling indicates that the soil vapor intrusion pathway does not represent an exposure concern.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the off-site area to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for the off-site area are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

Based on the results of the investigation at the off-site area the Department is proposing No Action as the remedy for the site.

The on-site remediation has reduced contaminant concentrations in groundwater at and near the site, and that trend is expected to continue. In addition, the area is served by public water and local groundwater use restrictions are in place. The findings of the investigation of this off-site area indicate that the BCP site did not result in contamination present at the off-site area which represented a significant threat to public health or the environment. Therefore no remedial action

is necessary to protect public health and/or the environment or to comply with the New York State standards, criteria, and guidance.

Site Location Map
Cornerstone Site B1 Off-Site
Site ID: C 203044A



0 30 60 120
Feet

Figure - 1



LEGEND:

- DMH O DRAINAGE MANHOLE
- MW-10 MONITOR WELL
- SB-3 SOIL BORING
- SV-6 SOIL VAPOR

NOTES:

1. ALL RESULTS ARE IN MICROGRAMS PER LITER (UG/L) OR PARTS PER BILLION (PPB);
 2. ALL SAMPLES WERE ANALYZED FOR VOCs BY USEPA METHOD 8260B
 3. NEW YORK STATE GROUNDWATER QUALITY STANDARDS (NYSGWQS) OBTAINED FROM THE DIVISION OF WATER TECHNICAL & OPERATIONAL GUIDANCE SERIES (TOGS) 1.1.1 JUNE 1998;
- * - THE PRINCIPAL ORGANIC CONTAMINANT STANDARD FOR GROUNDWATER OF 5MG/L APPLIES TO THIS SUBSTANCE.
- ** - APPLIES TO THE SUM OF CIS- AND TRANS-1,3-DICHLOROPROPENE;
- NYSDEC - NO GUIDANCE VALUE PROVIDED BY NYSDEC;
- BOLD - INDICATES ANALYTE DETECTED BY LABORATORY;
- SHADED - INDICATES ANALYTED EXCEEDS NYSGWQS
- J - THE NUMERICAL VALUE PROVIDED IS AN ESTIMATED QUANTITY;
- U - THE COMPOUND WAS ANALYZED FOR BUT NOT DETECTED; THE VALUE PROVIDED IS THE LABORATORY REPORTING LIMIT



FIGURE 5
GROUNDWATER VOC RESULTS
CORNERSTONE SITE B1 OFF-SITE
158TH STREET & BROOK AVENUE
BRONX, BRONX COUNTY, NEW YORK

Site ID	NYSDEC TOGS 1.1.1 Groundwater Quality Standard	Field Sample ID	Date	Quality	Standard	Primary
BR-MW-3	1.0 U	BR-MW-3	12/7/2011	1.0 U	1.0 U	1 U
BR-MW-3	1.0 U	DUP-BR-MW-3	12/7/2011	21	1.0 U	1 U
BR-MW-3	1.0 U	BR-MW-3	12/7/2011	0.77 J	1.0 U	5 U
BR-MW-3	1.1	BR-MW-3	12/7/2011	1.1	1.1	1 U

Site ID	NYSDEC TOGS 1.1.1 Groundwater Quality Standard	Field Sample ID	Date	Quality	Standard	Primary
BR-MW-5	90	BR-MW-5	12/28/2012	1 U	1 U	1 U
BR-MW-5	60	BR-MW-5	12/28/2012	6	1 U	1 U
BR-MW-5	7	BR-MW-5	12/28/2012	0.7 J	1 U	1 U
BR-MW-5	5*	BR-MW-5	12/28/2012	1	0.5 J	1 U

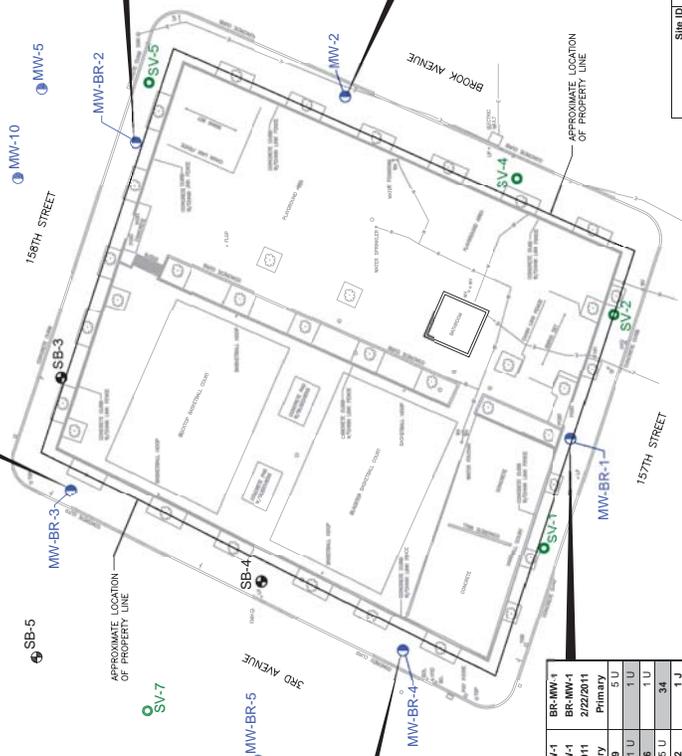
Site ID	NYSDEC TOGS 1.1.1 Groundwater Quality Standard	Field Sample ID	Date	Quality	Standard	Primary
BR-MW-2	5*	BR-MW-2	12/7/2011	0.88 J	5 U	0.6 J
BR-MW-2	50	BR-MW-2	12/7/2011	50 U	50 U	4 J
BR-MW-2	0.7	BR-MW-2	12/7/2011	2 U	0.7 U	1 U
BR-MW-2	50	BR-MW-2	12/7/2011	24	50 U	1 U
BR-MW-2	7	BR-MW-2	12/7/2011	82	7	37
BR-MW-2	5*	BR-MW-2	12/7/2011	1.1	5 U	5 U
BR-MW-2	5*	BR-MW-2	12/7/2011	1.7	5 U	1 U

Site ID	NYSDEC TOGS 1.1.1 Groundwater Quality Standard	Field Sample ID	Date	Quality	Standard	Primary
BR-MW-4	0.7	BR-MW-4	12/7/2011	1.0 U	1 U	1 U
BR-MW-4	5*	BR-MW-4	12/7/2011	0.75 J	1 U	1 U
BR-MW-4	5*	BR-MW-4	12/7/2011	1.2	1 U	1 U

Site ID	NYSDEC TOGS 1.1.1 Groundwater Quality Standard	Field Sample ID	Date	Quality	Standard	Primary
BR-MW-1	9	BR-MW-1	12/8/2011	9	5 U	5 U
BR-MW-1	1 U	BR-MW-1	12/8/2011	1 U	1 U	1 U
BR-MW-1	36	BR-MW-1	12/8/2011	36	1 U	1 U
BR-MW-1	5*	BR-MW-1	12/8/2011	5 U	5 U	34
BR-MW-1	5*	BR-MW-1	12/8/2011	2	1 U	1 U

Site ID	NYSDEC TOGS 1.1.1 Groundwater Quality Standard	Field Sample ID	Date	Quality	Standard	Primary
MW-1	0.7	MW-1	12/7/2011	1 U	1 U	1 U
MW-1	7	MW-1	12/7/2011	4	1 U	1 U
MW-1	5*	MW-1	12/7/2011	1	2	2
MW-1	5*	MW-1	12/7/2011	1 J	2 J	2 J
MW-1	5*	MW-1	12/7/2011	1	1 U	1 U
MW-1	5*	MW-1	12/7/2011	0.8 J	3	3

Site ID	NYSDEC TOGS 1.1.1 Groundwater Quality Standard	Field Sample ID	Date	Quality	Standard	Primary
MW-2	0.7	MW-2	12/7/2011	0.89 U	0.4 J	0.4 J
MW-2	0.7	MW-2	12/7/2011	0.89 U	0.4 J	0.4 J
MW-2	5*	MW-2	12/7/2011	9.0	9	9
MW-2	5*	MW-2	12/7/2011	9.0	9	9
MW-2	5*	MW-2	12/7/2011	9.0	9	9
MW-2	5*	MW-2	12/7/2011	9.0	9	9



REFERENCE:
BASE MAP TAKEN FROM C.T. MALE ASSOCIATES,
SAMPLE LOCATION SURVEY, DATED: DEC. 7, 2011.



Site ID	SV7	SV4
Field Sample ID	SV7	SV4
Sample Date	12/20/11	12/20/11
ANALYTE (µg/m ³)	Primary	Primary
Benzene	6.1 J	17 J
1,3-Butadiene	7.2 J	1.1 J
Chlorobenzene	3.3 J	3.7 J
1,2-Dichlorobenzene	1.9 J	5.3 J
Ethanol	180 J	2.2 J
Ethyl acetate	6.6 J	0.92 J
Hexane	2.7 J	0.88 J
2-Hexanone (Methyl Butyl Ketone)	1.7 J	280 J
Methylenedioxybenzene	22 J	3.0 J
Propylene	14 J	2.1 J
Methylcyclohexane	14 J	3.2 J
Toluene	1.4 J	3.2 J
1,2,4-Trichlorobenzene	3.8 J	2.5 J
1,1,1-Trichloroethane	2 J	0.76 J
1,2-Dichloroethane	1.8 J	4.1 J
Diethyl ether	1.9 J	4.3 J
From 11	1.9 J	4.3 J
1,2,4-Trimethylbenzene	2.1 J	2.9 J
m,p-Xylene	8.2 J	2.9 J
o-Xylene	2.7 J	2.9 J

Site ID	SV4	SV4
Field Sample ID	SV4	SV4
Sample Date	12/20/11	12/20/11
ANALYTE (µg/m ³)	Primary	Primary
Benzene	0.68 J	1.1 J
1,3-Butadiene	3.7 J	3.7 J
Chlorobenzene	5.3 J	5.3 J
From 12	2.2 J	2.2 J
Ethyl acetate	0.92 J	0.92 J
Hexane	0.88 J	0.88 J
2-Hexanone (Methyl Butyl Ketone)	280 J	280 J
Methylenedioxybenzene	3.0 J	3.0 J
Propylene	2.1 J	2.1 J
Methylcyclohexane	3.2 J	3.2 J
Toluene	3.2 J	3.2 J
1,1,1-Trichloroethane	0.76 J	0.76 J
1,2-Dichloroethane	4.1 J	4.1 J
Diethyl ether	4.3 J	4.3 J
From 11	4.3 J	4.3 J
1,2,4-Trimethylbenzene	2.9 J	2.9 J
m,p-Xylene	2.9 J	2.9 J
o-Xylene	2.9 J	2.9 J

Site ID	SV4	SV4
Field Sample ID	SV4	SV4
Sample Date	12/20/11	12/20/11
ANALYTE (µg/m ³)	Primary	Primary
Benzene	0.13 J	0.13 J
Chlorobenzene	0.34 J	0.34 J
From 12	2.8 J	2.8 J
Ethyl acetate	0.97 J	0.97 J
Hexane	0.45 J	0.45 J
2-Hexanone (Methyl Butyl Ketone)	0.84 J	0.84 J
1,1,1-Trichloroethane	0.56 J	0.56 J
1,2,4-Trimethylbenzene	1.4 J	1.4 J
m,p-Xylene	1.4 J	1.4 J
o-Xylene	0.56 J	0.56 J

Site ID	SV4	SV4
Field Sample ID	SV4	SV4
Sample Date	12/20/11	12/20/11
ANALYTE (µg/m ³)	Primary	Primary
Benzene	1.5 J	1.5 J
Chlorobenzene	1.5 J	1.5 J
From 12	3.4 J	3.4 J
Ethyl acetate	4.2 J	4.2 J
Hexane	1.5 J	1.5 J
2-Hexanone (Methyl Butyl Ketone)	0.84 J	0.84 J
1,1,1-Trichloroethane	0.56 J	0.56 J
1,2,4-Trimethylbenzene	2.7 J	2.7 J
m,p-Xylene	0.73 J	0.66 J
o-Xylene	1.9 J	1.9 J
From 11	2.4 J	2.4 J
1,2,4-Trimethylbenzene	3.8 J	3.8 J
m,p-Xylene	1.0 J	1.0 J
o-Xylene	2.1 J	2.1 J
From 11	2.4 J	2.4 J
1,2,4-Trimethylbenzene	3.5 J	3.5 J
m,p-Xylene	0.94 J	1.3 J
o-Xylene	5.7 J	7.0 J
From 11	2.5 J	2.5 J
1,2,4-Trimethylbenzene	2.5 J	2.5 J
m,p-Xylene	3.1 J	3.1 J
o-Xylene	3.1 J	3.1 J

Site ID	SV4	SV4	DMP
Field Sample ID	SV4	SV4	SV4
Sample Date	12/20/11	12/20/11	12/20/11
ANALYTE (µg/m ³)	Primary	Primary	Primary
Benzene	1.5 J	1.5 J	0.9
Chlorobenzene	1.5 J	1.5 J	0.9
From 12	3.4 J	3.4 J	1.5 J
Ethyl acetate	4.2 J	4.2 J	1.5 J
Hexane	1.5 J	1.5 J	1.7 J
2-Hexanone (Methyl Butyl Ketone)	0.84 J	0.84 J	1.7 J
1,1,1-Trichloroethane	0.56 J	0.56 J	1.7 J
1,2,4-Trimethylbenzene	2.7 J	2.7 J	1.7 J
m,p-Xylene	0.73 J	0.66 J	1.7 J
o-Xylene	1.9 J	1.9 J	1.7 J
From 11	2.4 J	2.4 J	1.7 J
1,2,4-Trimethylbenzene	3.8 J	3.8 J	1.7 J
m,p-Xylene	1.0 J	1.0 J	1.7 J
o-Xylene	2.1 J	2.1 J	1.7 J
From 11	2.4 J	2.4 J	1.7 J
1,2,4-Trimethylbenzene	3.5 J	3.5 J	1.7 J
m,p-Xylene	0.94 J	1.3 J	1.7 J
o-Xylene	5.7 J	7.0 J	1.7 J
From 11	2.5 J	2.5 J	1.7 J
1,2,4-Trimethylbenzene	2.5 J	2.5 J	1.7 J
m,p-Xylene	3.1 J	3.1 J	1.7 J
o-Xylene	3.1 J	3.1 J	1.7 J

Site ID	SV4	SV4
Field Sample ID	SV4	SV4
Sample Date	12/20/11	12/20/11
ANALYTE (µg/m ³)	Primary	Primary
Benzene	0.96 J	0.96 J
Chlorobenzene	2.8 J	2.8 J
Ethyl acetate	31 J	31 J
Hexane	0.61 J	0.61 J
2-Hexanone (Methyl Butyl Ketone)	0.58 J	0.58 J
1,1,1-Trichloroethane	0.69 J	0.69 J
From 11	4.4 J	4.4 J
1,2,4-Trimethylbenzene	1.5 J	1.5 J
m,p-Xylene	1.8 J	1.8 J
o-Xylene	0.74 J	0.74 J

Site ID	SV4	SV4
Field Sample ID	SV4	SV4
Sample Date	12/20/11	12/20/11
ANALYTE (µg/m ³)	Primary	Primary
Benzene	1.4 J	1.4 J
Chlorobenzene	0.41 J	0.41 J
From 12	2.6 J	2.6 J
Ethyl acetate	0.65 J	0.65 J
Hexane	0.81 J	0.81 J
2-Hexanone (Methyl Butyl Ketone)	0.99 J	0.99 J
1,1,1-Trichloroethane	0.9 J	0.9 J
From 11	1.9 J	1.9 J
1,2,4-Trimethylbenzene	0.84 J	0.84 J
m,p-Xylene	2.4 J	2.4 J
o-Xylene	0.85 J	0.85 J

Site ID	SV4	SV4
Field Sample ID	SV4	SV4
Sample Date	12/20/11	12/20/11
ANALYTE (µg/m ³)	Primary	Primary
Benzene	1.2 J	1.2 J
Chlorobenzene	8.2 J	8.2 J
From 12	0.64 J	0.64 J
Ethyl acetate	2.6 J	2.6 J
Hexane	1.9 J	1.9 J
2-Hexanone (Methyl Butyl Ketone)	0.85 J	0.85 J
1,1,1-Trichloroethane	0.97 J	0.97 J
Isopropyl alcohol	10.0 J	10.0 J
Styrene	2.2 J	2.2 J
1,1,1-Trichloroethane	1.3 J	1.3 J
From 11	1.7 J	1.7 J
1,1,1-Trichloroethane	0.92 J	0.92 J
From 11	1.7 J	1.7 J
1,2,4-Trimethylbenzene	2.4 J	2.4 J
1,3,5-Trimethylbenzene	0.94 J	0.94 J
o-Xylene	2.6 J	2.6 J
p-Xylene	2.4 J	2.4 J

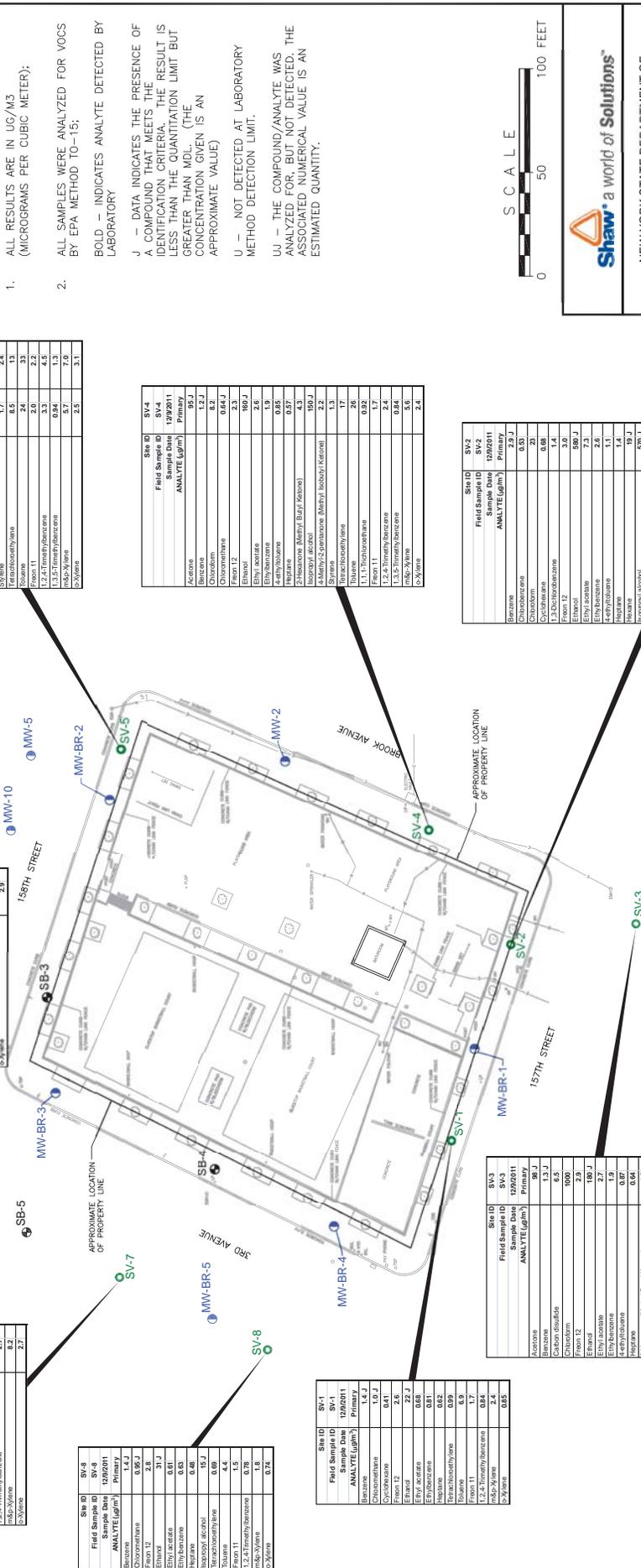
Site ID	SV4	SV4
Field Sample ID	SV4	SV4
Sample Date	12/20/11	12/20/11
ANALYTE (µg/m ³)	Primary	Primary
Benzene	1.2 J	1.2 J
Chlorobenzene	8.2 J	8.2 J
From 12	0.64 J	0.64 J
Ethyl acetate	2.6 J	2.6 J
Hexane	1.9 J	1.9 J
2-Hexanone (Methyl Butyl Ketone)	0.85 J	0.85 J
1,1,1-Trichloroethane	0.97 J	0.97 J
Isopropyl alcohol	10.0 J	10.0 J
Styrene	2.2 J	2.2 J
1,1,1-Trichloroethane	1.3 J	1.3 J
From 11	1.7 J	1.7 J
1,1,1-Trichloroethane	0.92 J	0.92 J
From 11	1.7 J	1.7 J
1,2,4-Trimethylbenzene	2.4 J	2.4 J
1,3,5-Trimethylbenzene	0.94 J	0.94 J
o-Xylene	2.6 J	2.6 J
p-Xylene	2.4 J	2.4 J

Site ID	SV2	SV2
Field Sample ID	SV2	SV2
Sample Date	12/20/11	12/20/11
ANALYTE (µg/m ³)	Primary	Primary
Benzene	0.31 J	0.31 J
Chlorobenzene	0.23 J	0.23 J
Cyclohexane	0.09 J	0.09 J
From 12	3.0 J	3.0 J
Ethyl acetate	5.0 J	5.0 J
Hexane	7.3 J	7.3 J
2-Hexanone (Methyl Butyl Ketone)	570 J	570 J
Isopropyl alcohol	13 J	13 J
Methylenedioxybenzene	4.0 J	4.0 J
Propylene	5.0 J	5.0 J
Methylcyclohexane	5.0 J	5.0 J
Toluene	40 J	40 J
From 11	2.6 J	2.6 J
1,1,1-Trichloroethane	6.6 J	6.6 J
1,2,4-Trimethylbenzene	2.4 J	2.4 J
1,3,5-Trimethylbenzene	1.5 J	1.5 J
m,p-Xylene	7.8 J	7.8 J
o-Xylene	3.5 J	3.5 J

Site ID	SV1	SV1
Field Sample ID	SV1	SV1
Sample Date	12/20/11	12/20/11
ANALYTE (µg/m ³)	Primary	Primary
Benzene	1.4 J	1.4 J
Chlorobenzene	0.41 J	0.41 J
From 12	2.6 J	2.6 J
Ethyl acetate	0.65 J	0.65 J
Hexane	0.81 J	0.81 J
2-Hexanone (Methyl Butyl Ketone)	0.99 J	0.99 J
1,1,1-Trichloroethane	0.9 J	0.9 J
From 11	1.9 J	1.9 J
1,2,4-Trimethylbenzene	0.84 J	0.84 J
m,p-Xylene	2.4 J	2.4 J
o-Xylene	0.85 J	0.85 J

Site ID	SV3	SV3
Field Sample ID	SV3	SV3
Sample Date	12/20/11	12/20/11
ANALYTE (µg/m ³)	Primary	Primary
Benzene	1.3 J	1.3 J
Carbon disulfide	6.5 J	6.5 J
From 12	2.9 J	2.9 J
Ethyl acetate	2.9 J	2.9 J
Hexane	100 J	100 J
Ethanol	2.7 J	2.7 J
Ethyl acetate	1.9 J	1.9 J
Hexane	0.97 J	0.97 J
2-Hexanone (Methyl Butyl Ketone)	4.5 J	4.5 J
Isopropyl alcohol	100 J	100 J
Styrene	1.3 J	1.3 J
Toluene	28 J	28 J
From 11	5.2 J	5.2 J
1,1,1-Trichloroethane	2.8 J	2.8 J
1,2,4-Trimethylbenzene	2.4 J	2.4 J
1,3,5-Trimethylbenzene	5.6 J	5.6 J
m,p-Xylene	5.6 J	5.6 J
o-Xylene	2.6 J	2.6 J

Site ID	SV2	SV2
Field Sample ID	SV2	SV2
Sample Date	12/20/11	12/20/11
ANALYTE (µg/m ³)	Primary	Primary
Benzene	0.31 J	0.31 J
Chlorobenzene	0.23 J	0.23 J
Cyclohexane	0.09 J	0.09 J
From 12	3.0 J	3.0 J
Ethyl acetate	5.0 J	5.0 J
Hexane	7.3 J	7.3 J
2-Hexanone (Methyl Butyl Ketone)	570 J	570 J
Isopropyl alcohol	13 J	13 J
Methylenedioxybenzene	4.0 J	4.0 J
Propylene	5.0 J	5.0 J
Methylcyclohexane	5.0 J	5.0 J
Toluene	40 J	40 J
From 11	2.6 J	2.6 J
1,1,1-Trichloroethane	6.6 J	6.6 J
1,2,4-Trimethylbenzene	2.4 J	2.4 J
1,3,5-Trimethylbenzene	1.5 J	1.5 J
m,p-Xylene	7.8 J	7.8 J
o-Xylene	3.5 J	3.5 J



LEGEND:
 DMH ○ DRAINAGE MANHOLE
 MW-10 ○ MONITOR WELL
 SB-3 ○ SOIL BORING
 SV-6 ○ SOIL VAPOR

NOTES:
 1. ALL RESULTS ARE IN UG/M3 (MICROGRAMS PER CUBIC METER);
 2. ALL SAMPLES WERE ANALYZED FOR VOCs BY EPA METHOD 10-15;
 BOLD — INDICATES ANALYTE DETECTED BY LABORATORY
 J — DATA INDICATES THE PRESENCE OF A COMPOUND THAT MEETS THE IDENTIFICATION CRITERIA. THE RESULT IS LESS THAN THE QUANTITATION LIMIT BUT GREATER THAN MDL. (THE CONCENTRATION GIVEN IS AN APPROXIMATE VALUE)
 U — NOT DETECTED AT LABORATORY METHOD DETECTION LIMIT.
 UJ — THE COMPOUND/ANALYTE WAS ANALYZED FOR, BUT NOT DETECTED. THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED QUANTITY.



FIGURE 6
 SOIL VAPOR VOC RESULTS
 CORNERSTONE SITE B1 OFF-SITE
 158TH STREET & BROOK AVENUE
 BRONX, BRONX COUNTY, NEW YORK

REFERENCE:
 BASE MAP TAKEN FROM C.T. MALE ASSOCIATES, SAMPLE LOCATION SURVEY, DATED: DEC. 7, 2011.