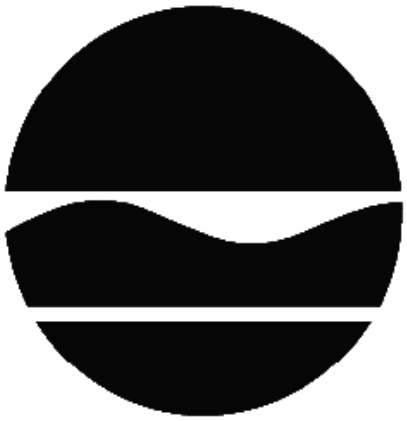
DECISION DOCUMENT

Former Scientific Fire Prevention Inc
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224165
November 2013



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

DECLARATION STATEMENT - DECISION DOCUMENT

Former Scientific Fire Prevention Inc
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224165
November 2013

Statement of Purpose and Basis

This document presents the remedy for the Former Scientific Fire Prevention Inc 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 Former Scientific Fire Prevention Inc site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

1. Green remediation principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The major green remediation components are as follows:
• Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
• Reducing direct and indirect greenhouse gas and other emissions;
• Increasing energy efficiency and minimizing use of non-renewable energy;
• Conserving and efficiently managing resources and materials; and
• Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

2. To achieve a Track 1 cleanup, all on-site soils that exceed any of the unrestricted use SCOs, as defined by 6 NYCRR Part 375-6.8, will be excavated and transported off-site for disposal. The excavation area will include the TCE/PCE hot spot, as well as the entirety of the site down to approximately 14-15 feet to achieve the unrestricted use SCOs. Up to approximately 1,200 cubic yards of soil will be removed from the site and disposed at an approved location. Clean fill meeting the requirements of DER-10, Appendix 5 will be brought in to complete the backfilling of the excavation and establish the grades at the site. Figure 2 shows all the exceedances of the

UUSCOs.

3. Any on-site buildings will be required to have a sub-slab depressurization system, or a similar engineered system, to prevent the migration of vapors into the building from soil and/or groundwater. The system must be shut down within the time period provided in 6 NYCRR Part 375-3.8(e)(1)(iv) to attain a Track 1 cleanup. In the event a Track 1 cleanup is not demonstrated in this time period, the remedy will achieve a Track 2 Residential cleanup, and the short-term institutional control and the Site Management Plan would remain in place until the Department determines they are no longer needed.

4. Imposition of an institutional control for the short-term in the form of an environmental easement for the controlled property until such time as a soil vapor intrusion evaluation indicates no further actions to address soil vapor intrusion are needed at which time this easement may be extinguished. The easement will:
• require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);
• allows the use and development of the controlled property for unrestricted, residential, restricted residential, commercial and industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
• restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
• requires compliance with the Department-approved Site Management Plan.

5. A Site Management Plan (SMP) is required, since the remedy will include short-term institutional and engineering controls, which will apply until such time as these controls are no longer required. The SMP will include the following:
a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
• Institutional Controls - The Environmental Easement discussed above.
• Engineering Controls - Any on-site buildings will be required to have a sub-slab depressurization system, or a similar engineered system, to prevent the migration of vapors into the building from soil and/or groundwater.

This plan includes, but may not be limited to:
• descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
• provisions for the management and inspection of the identified short-term engineering controls;
• maintaining site access controls and Department notification;
• the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.
b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
• a schedule of monitoring and frequency of submittals to the Department.
c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy.

The plan includes, but is not limited to:
• compliance monitoring of sub-slab depressurization system to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
• maintaining site access controls and Department notification; and
• providing the Department access to the site and O&M records.

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.

November 20,2013

Date

Robert Cozzy, Director
Remedial Bureau B

DECISION DOCUMENT

Former Scientific Fire Prevention Inc
Brooklyn, Kings County
Site No. C224165
November 2013

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 above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

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 repository:

Brooklyn Public Library
Attn: Leonard Street Branch
81 Devoe Street
Brooklyn, NY 11211
Phone: 718-486-3365

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 site is located at 871 Grand Street in the Williamsburg section of Brooklyn, NY. The site is comprised of a single tax parcel, Section 3, Block 2922, lot 41 and occupies 0.06 acres.

Site Features: The lot is currently developed with a one-story slab-on-grade concrete block building which occupies the entire lot. The building was constructed in 1981 according to the NYC Department of Buildings.

Current Zoning and Land Uses: The site is currently vacant. The building was commercial, but is currently unoccupied. The intended use of the site is residential. The site is zoned R7A. These districts typically produce high-lot coverage, seven- and eight-story apartment buildings, blending with existing buildings in many established neighborhoods. The neighborhood is currently a mix of commercial and residential land uses. Progress High School is across Grand Street from the site.

Past Use of the Site: Historical records show the subject site as being developed prior to 1887 with a two-story wheelwright located at the street front, and detached one-story shed located in the rear yard. By 1907, the two- story building was converted for use by a horseshoer, which included two horse stables in the rear yard. In the 1930's through the 1950's, the subject site building was used for paper storage and tile storage. The building was then used in the 1960's and 1970's by a metal products manufacturer, Scientific Fire Prevention Inc., until it was demolished in 1981. The subject site lot was then redeveloped in 1981 with the one-story concrete block commercial building that currently remains at the site.

Site Geology and Hydrogeology: Groundwater at the site is present at a depth of approximately 35 feet below grade. Groundwater flows to the southwest. Subsurface soils at the site consist of a silty non-native fill with bricks, wood and other rubble to approximately 2 feet below grade. A native fine brown silty-sand is present immediately below the fill material to a depth of approximately 15 feet below grade.

A site 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 site and its surroundings when evaluating a remedy for soil remediation. For this site, an alternative which allows for unrestricted use of the site was evaluated.

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

SECTION 5: ENFORCEMENT STATUS

The Applicant(s) under the Brownfield Cleanup Agreement is a/are Volunteer(s). The Volunteer(s) does/do not have an obligation to address off-site contamination. The Department has determined that this site poses a significant threat to human health and the environment and there are off-site impacts that require remedial activities; accordingly, enforcement actions are necessary.

The Department will seek to identify any parties (other than the Volunteer) known or suspected to be responsible for contamination at or emanating from the site, referred to as Potentially Responsible Parties (PRPs). The Department will bring an enforcement action against the PRPs. If an enforcement action cannot be brought, or does not result in the initiation of a remedial program by any PRPs, the Department will evaluate the off-site contamination for action under the State Superfund Program. The PRPs are subject to legal actions by the State for recovery of all response costs the State incurs or has incurred.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The 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 site 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:

TRICHLOROETHENE (TCE)	METHYLENE CHLORIDE
TETRACHLOROETHYLENE (PCE)	1,2-DICHLOROETHANE
CHLORDANE	XYLENE (MIXED)
DIELDRIN	1,3-DICHLOROBENZENE
DDD	1,4-DICHLOROBENZENE
BENZ(A)ANTHRACENE	TOLUENE
BENZO(A)PYRENE	DDE
Chrysene	BENZO(B)FLUORANTHENE
DICHLOROETHYLENE	BENZO[K]FLUORANTHENE
1,2-DICHLOROBENZENE	DDT

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil

6.2: Interim Remedial Measures

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

There were no IRMs performed at this site 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. 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: Based upon the remedial investigation, the primary contaminants of concern at the site are trichloroethene (TCE) and tetrachloroethene (PCE) found in site soil, groundwater and soil vapor, as well as some pesticides, such as chlordane and dieldrin in site soils and groundwater, and 4,4,4-DDD in site soil. Site soils also contained some semi-volatile organic compounds (SVOCs), such as benzo(a)pyrene, benzo(a) anthracene and benzo(b)fluoranthene.

Soil: TCE and PCE were encountered in shallow (3-5 feet) soil samples with the highest levels at 350 parts per million (ppm), and 36 ppm, respectively compared to the unrestricted use soil cleanup objectives (UUSCO) of 0.47 ppm and 1.3 ppm, respectively. A TCE/PCE hot spot was identified near the south end of the property. One sample from 12-14 feet showed elevated levels of pesticides such as chlordane at 0.76 ppm versus the UUSCO of 0.094 ppm and 4,4-DDT at 0.16 ppm vs the UUSCO of 0.0033 ppm. The top two feet of site soils are historic fill. Sampling in shallow soils showed elevated levels of other VOCs, such as 1,3 and 1,4 dichlorobenzene, as well as SVOCs and pesticides as noted above. No metals exceeding UUSCOs were encountered.

Groundwater: TCE and PCE were found in groundwater throughout the site. The levels of TCE marginally exceeded the groundwater standards at a maximum of 9.4 parts per billion (ppb) versus a standard of 5 ppb, while PCE was detected at a slightly higher concentration, at a maximum of 24 ppb versus a standard of 5 ppb. Dieldrin was detected at 0.033 ppb versus a standard of 0.004 ppb. The metals detected in groundwater (i.e., magnesium, manganese and sodium) are naturally occurring and/or not site-related. Groundwater is 35 feet below grade.

Soil Vapor: Soil vapor samples were collected at 12 feet below ground surface. TCE was detected in every soil vapor sample collected. The highest TCE soil gas concentration was 3,620 micrograms per cubic meter (ug/m3), while the highest PCE soil gas concentration was 214 ug/m3.

Significant Threat: The site presents a significant threat to human health due to the ongoing releases of contaminants from source areas to soil vapor.

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*.

Direct contact with contamination in the soil and groundwater are not expected because the site is covered by a building. 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. The potential exists for the inhalation of site contaminants in indoor air for any future on-site redevelopment and occupancy. Furthermore, environmental sampling indicates that soil vapor intrusion may represent a concern for off-site buildings.

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 site 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 this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 1: Unrestricted use remedy.

The selected remedy is referred to as the Excavation and Off-site Disposal of Contaminated Soil remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

1. Green remediation principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The major green remediation components are as follows:
• Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
• Reducing direct and indirect greenhouse gas and other emissions;
• Increasing energy efficiency and minimizing use of non-renewable energy;
• Conserving and efficiently managing resources and materials; and
• Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

2. To achieve a Track 1 cleanup, all on-site soils that exceed any of the unrestricted use SCOs, as defined by 6 NYCRR Part 375-6.8, will be excavated and transported off-site for disposal. The excavation area will include the TCE/PCE hot spot, as well as the entirety of the site down to approximately 14-15 feet to achieve the unrestricted use SCOs. Up to approximately 1,200 cubic yards of soil will be removed from the site and disposed at an approved location. Clean fill meeting the requirements of DER-10, Appendix 5 will be brought in to complete the backfilling of the excavation and establish the grades at the site. Figure 2 shows all the exceedances of the UUSCOs.

3. Any on-site buildings will be required to have a sub-slab depressurization system, or a similar engineered system, to prevent the migration of vapors into the building from soil and/or groundwater. The system must be shut down within the time period provided in 6 NYCRR Part 375-3.8(e)(1)(iv) to attain a Track 1 cleanup. In the event a Track 1 cleanup is not demonstrated in this time period, the remedy will achieve a Track 2 Residential cleanup, and the short-term institutional control and the Site Management Plan would remain in place until the Department determines they are no longer needed.

4. Imposition of an institutional control for the short-term in the form of an environmental easement for the controlled property until such time as a soil vapor intrusion evaluation indicates no further actions to address soil vapor intrusion are needed at which time this easement may be extinguished. The easement will:
• require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);

• allows the use and development of the controlled property for unrestricted, residential, restricted residential, commercial and industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
• restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
• requires compliance with the Department-approved Site Management Plan.

5. A Site Management Plan (SMP) is required, since the remedy will include short-term institutional and engineering controls, which will apply until such time as these controls are no longer required. The SMP will include the following:
a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
• Institutional Controls - The Environmental Easement discussed above.
• Engineering Controls - Any on-site buildings will be required to have a sub-slab depressurization system, or a similar engineered system, to prevent the migration of vapors into the building from soil and/or groundwater.

This plan includes, but may not be limited to:
• descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
• provisions for the management and inspection of the identified short-term engineering controls;
• maintaining site access controls and Department notification;
• the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.
b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
• a schedule of monitoring and frequency of submittals to the Department.
c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
• compliance monitoring of sub-slab depressurization system to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
• maintaining site access controls and Department notification; and
• providing the Department access to the site and O&M records.

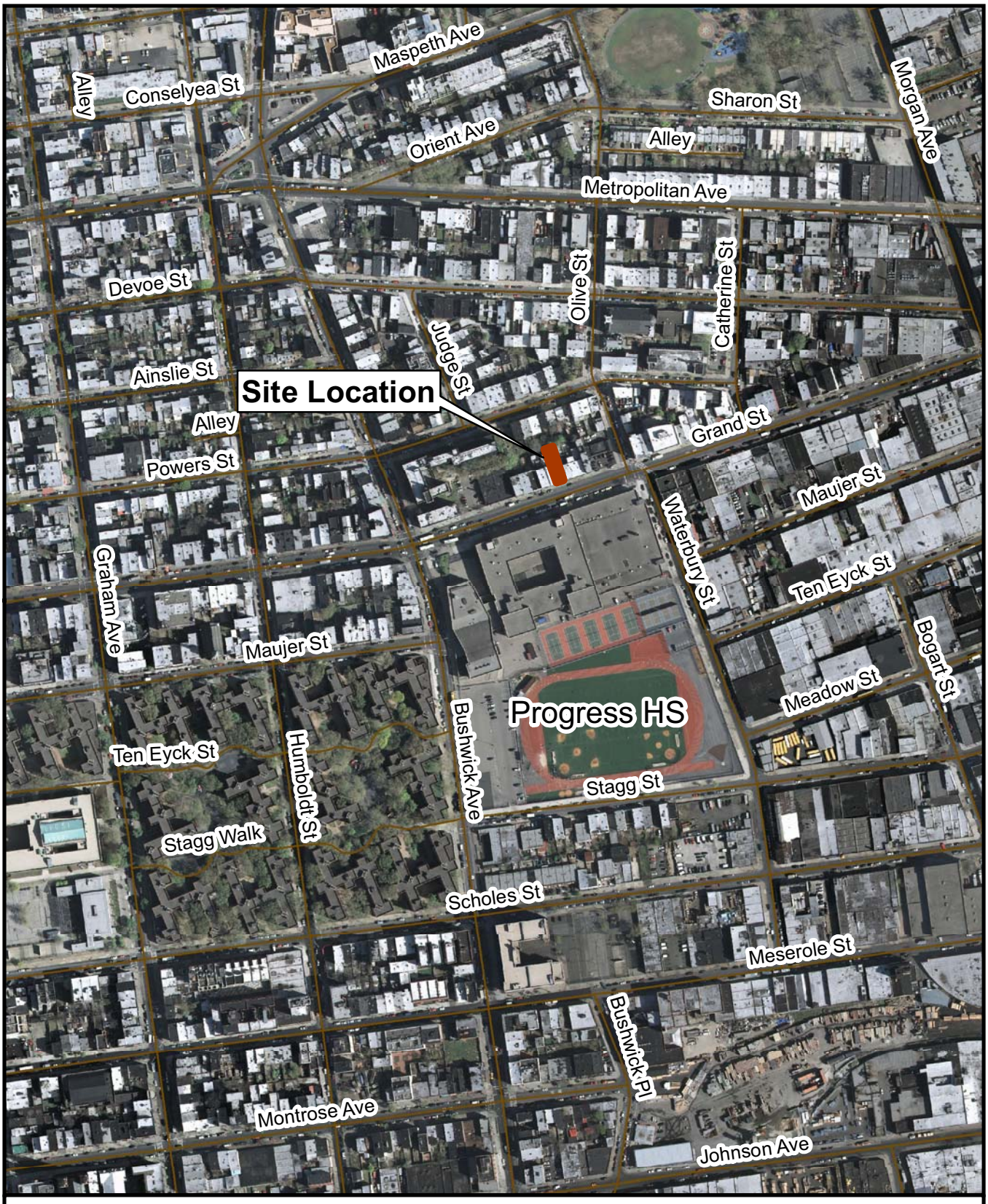


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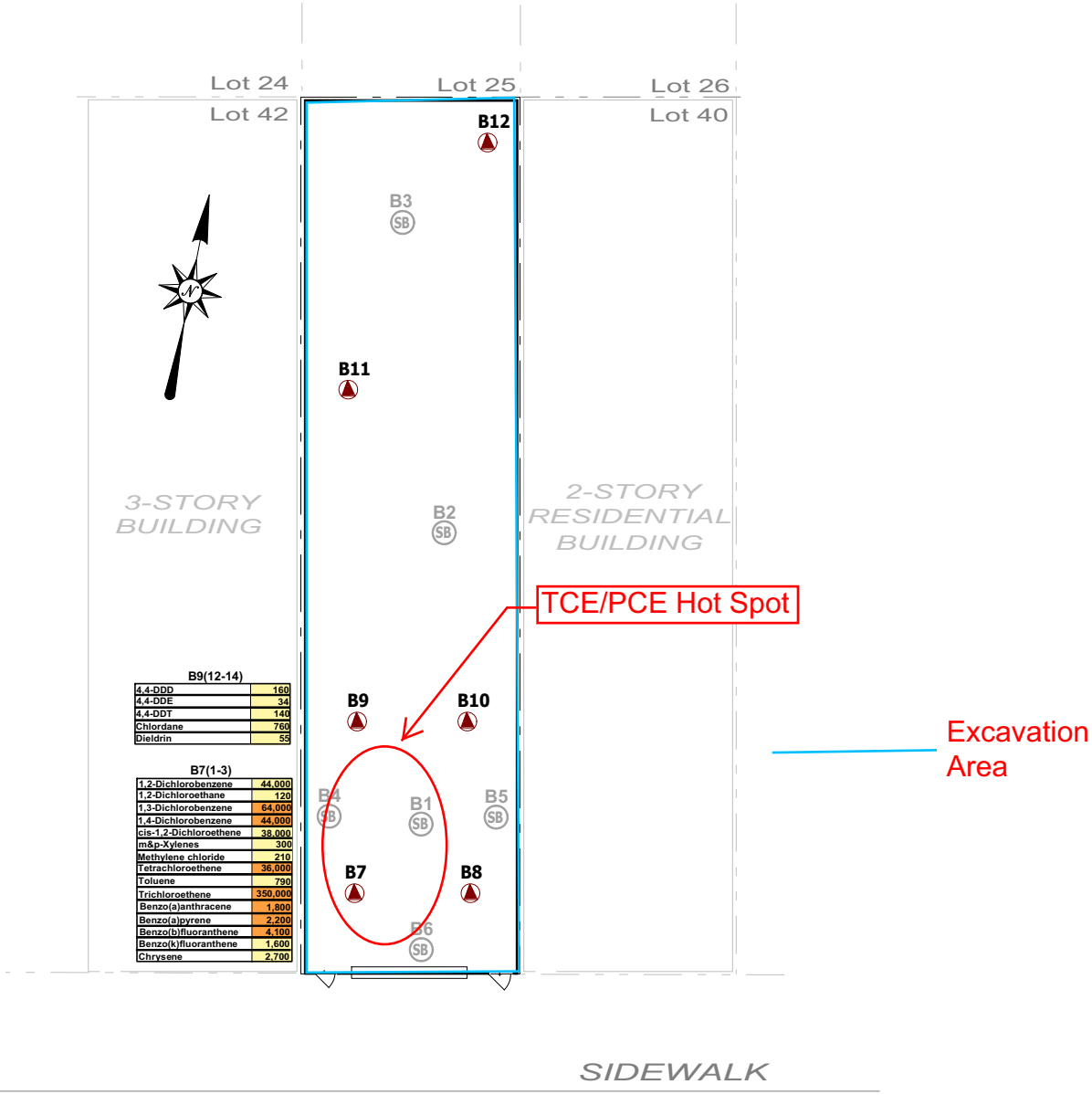
Figure 1 - Site Location Map

Former Scientific Fire Prevention Inc.
Brooklyn, Kings County
Site No. C224165

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE



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Scale: 1 inch = 20 feet

KEY

- Property Line
- Bx (SB) Phase II Soil Boring Location
- Bx Soil Boring Location
- VOCs/SVOCs/Pesticides | ppb
- Exceedence of Restricted Residential SCO
- Exceedence of Unrestricted Use SCO

EBC
Environmental Business Consultants
Phone 631.504.6000
Fax 631. 924 .2870

871 Grand Street
Brooklyn, NY

Figure 2 — Posted Soil Results Above Soil Cleanup Objectives