DECISION DOCUMENT

477 Gerard Avenue
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203071
April 2018

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

DECLARATION STATEMENT - DECISION DOCUMENT

477 Gerard Avenue
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203071
April 2018

Statement of Purpose and Basis

This document presents the remedy for the 477 Gerard Avenue 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 477 Gerard Avenue 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:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and 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 gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

Excavation and off-site disposal of all on-site soils, former building foundations, and historic fill which exceed unrestricted use SCOs, as defined by 6 NYCRR Part 375-6.8. Approximately 3,300 cubic yards of material will be removed for remediation, followed by an additional 1,800 cubic yards to achieve a depth up to 20 feet below grade. Additional excavation below 20 feet may also occur to remove all soils exceeding unrestricted SCOs, depending on endpoint sample results.

As necessary, clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete required backfilling of the excavation and establish the designed grades at the site.

3. Soil Vapor Intrusion Evaluation

As part of the Track 1 remedy, a soil vapor intrusion evaluation will be completed. The evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

The intent of the remedy is to achieve a Track 1 unrestricted use, therefore, no Environmental Easement (EE) or Site Management Plan (SMP) is anticipated. If the soil vapor intrusion (SVI) evaluation has not been completed prior to completion of the Final Engineering Report, then an SMP and EE will be required to address the SVI evaluation and mitigate the building as needed; if a mitigation system is needed, a Track 1 cleanup can only be achieved if the mitigation system can be shut down within 5 years of the date of the Certificate of Completion (COC).

If no EE or SMP is needed to achieve soil or soil vapor RAOs, then the following local use restriction will be relied upon to prevent ingestion of groundwater: Article 141 of the NYCDOH code, which prohibits potable use of groundwater without prior approval.

In the event that Track 1 unrestricted use is not achieved, including achievement of groundwater and soil vapor remedial objectives, the following contingent remedial elements will be required and the remedy will achieve a Track 2 restricted residential cleanup.

Contingent Remedial Elements:

4. Institutional Controls

Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires 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 restricted residential, commercial and industrial uses 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. Site Management Plan

A Site Management Plan, which would 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 in Paragraph 4 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and/or groundwater and/or surface water use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- 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; and
- monitoring for vapor intrusion for any new buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

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.

4/17/2018
Date

Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

477 Gerard Avenue
Bronx, Bronx County
Site No. C203071
April 2018

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:

New York Public Library - Mott Haven Library
Attn: Ms. Jeanine Thomas-Cross
321 East 140th Street at Alexander Avenue
Bronx, NY 10454
Phone: 718-665-4878

Bronx Community Board One
Attn: Cedric L. Loftin
3024 Third Avenue
Bronx, NY 10455

Phone: 718-585-7117

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 477 Gerard Avenue, Bronx, NY on the northwest corner of the intersection of East 146th Street and Gerard Avenue. The site is bounded by the streets above to the east and south, a newly constructed hotel to the west, and a residential building to the north. The site is approximately 0.20 acres in size.

Site Features: The site is currently vacant, cleared, and surrounded by a fence.

Current Zoning and Land Use: The site is currently vacant and zoned M1-4/R8A as a special mixed-use district meant to enhance the vitality of existing neighborhoods with mixed residential and industrial uses.

Past Use of the Site: The site was developed with commercial and industrial uses since at least 1908. Specific past uses include a lumberyard, a sign frame company, auto junkyard, and auto repair facility. Underground storage tanks (USTs) have been reported at the site on historical Sanborn maps, but none were found during the most recent investigation.

Geology and Hydrogeology: The subsurface consists of a 15 to 16-foot deep historic fill layer. Beneath the fill layer, the site consists of unconsolidated sand and gravel layers to the depth of bedrock, which is approximately 300 feet below ground surface (bgs). Regional groundwater flows to the southwest towards the Harlem River. Depth to groundwater ranges from 14.5 to 19.5 feet below ground surface (bgs).

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, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use 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 Applicant(s) does/do not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

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:

benzo(a)anthracene
benzo(b)fluoranthene
barium
arsenic
cadmium
copper
lead
polychlorinated biphenyls (PCB)
1,1,1-trichloroethane
tetrachloroethene (PCE)
trichloroethene (TCE)
mercury
nickel
zinc
benzo(a)pyrene
p-isopropyltoluene
1,2,4-trimethylbenzene

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

- soil
- groundwater

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.

Soil and groundwater has been analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, poly-chlorinated biphenyls (PCBs), and metals. Soil vapor has been analyzed for VOCs.

Soil: The primary contaminants found in site soils are polycyclic aromatic hydrocarbons (PAHs) and metals typically found in historic fill, which is generally present in the top 15-16 feet of the site, and PCBs. PAHs were detected in soils up to 16 feet below ground surface (bgs) during the RI, including but not limited to, benzo(a)anthracene at 1.8 parts per million (ppm) (UUSCO is 1 ppm) and benzo(b)fluoranthene at 2.2 ppm (UUSCO is 1.0 ppm). Metals were found at depths up to 20 feet bgs, with the highest concentrations residing within the upper 10 feet, including arsenic at concentrations up to 90 ppm (UUSCO is 13 ppm), barium up to 560 ppm (UUSCO is 350 ppm), cadmium up to 22 ppm (UUSCO is 2.5 ppm), copper up to 800 ppm (UUSCO is 50 ppm), lead up to 17,000 ppm (UUSCO is 63 ppm), mercury up to 1.4 ppm (UUSCO is 0.18 ppm), nickel up to 82 ppm (UUSCO is 30 ppm), and zinc up to 970 ppm (UUSCO is 109 ppm). During the Phase II investigation PCBs were found in a few locations up to 15.35 ppm. During the RI, PCBs were detected at two locations up to 0.523 ppm (UUSCO is 0.1 ppm). Like the PAHs and metals, PCBs appear to be coincident with the historic fill. Limited petroleum-related VOCs were detected marginally above UUSCOs during the Phase II investigation, but were not detected during the RI. Site-related soil contamination is not expected to be present off-site, but historic fill may be present off-site.

Groundwater: The only VOCs detected in groundwater were p-isopropyltoluene at 25 parts per billion (ppb) (standard is 5 ppb), and 1,2,4-trimethylbenzene at 18 ppb (standard is 5 ppb). The contaminants found in groundwater may be from site-related activities or an off-site source. Two SVOCs were detected above standards, criteria or guidance values (SCGs) as follows: benzo(a)anthracene at concentrations up to 0.04 ppb (guidance value is 0.002 ppb) and one detection of benzo(a)pyrene at 0.07 ppb (standard is non-detect). No PCBs, pesticides or metals of concern were detected in groundwater over SCGs. It's unclear whether contaminated groundwater extends off-site.

Soil Vapor: Several VOCs were detected in soil vapor. However, the only chlorinated VOCs detected were tetrachloroethene (PCE) at 162 micrograms per cubic meter (ug/m^3), 1,1,1-trichloroethane at 12.6 ug/m^3, and trichloroethene (TCE) at 1.28 ug/m^3. Data do not indicate soil vapor intrusion is a concern for off-site buildings.

Although none were encountered during the remedial investigation, underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination may exist.

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 may contact contaminants in soil or groundwater if they dig below the surface or contact contaminated groundwater. People are not drinking the contaminated groundwater because the area is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in the soil vapor (air spaces within the soil) 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 of buildings, is referred to as soil vapor intrusion. The site is currently vacant. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for future on-site buildings. Sampling indicates soil vapor intrusion is not 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.
- 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.
- Remove the source of groundwater contamination.

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 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 remedy.

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

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and 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 gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Excavation

Excavation and off-site disposal of all on-site soils, former building foundations, and historic fill which exceed unrestricted use SCOs, as defined by 6 NYCRR Part 375-6.8. Approximately 3,300 cubic yards of material will be removed for remediation, followed by an additional 1,800 cubic yards to achieve a depth up to 20 feet below grade. Additional excavation below 20 feet may also occur to remove all soils exceeding unrestricted SCOs, depending on endpoint sample results.

As necessary, clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete required backfilling of the excavation and establish the designed grades at the site.

3. Soil Vapor Intrusion Evaluation

As part of the Track 1 remedy, a soil vapor intrusion evaluation will be completed. The evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

The intent of the remedy is to achieve a Track 1 unrestricted use, therefore, no Environmental Easement (EE) or Site Management Plan (SMP) is anticipated. If the soil vapor intrusion (SVI) evaluation has not been completed prior to completion of the Final Engineering Report, then an SMP and EE will be required to address the SVI evaluation and mitigate the building as needed; if a mitigation system is needed, a Track 1 cleanup can only be achieved if the mitigation system can be shut down within 5 years of the date of the Certificate of Completion (COC).

If no EE or SMP is needed to achieve soil or soil vapor RAOs, then the following local use restriction will be relied upon to prevent ingestion of groundwater: Article 141 of the NYCDOH code, which prohibits potable use of groundwater without prior approval.

In the event that Track 1 unrestricted use is not achieved, including achievement of groundwater and soil vapor remedial objectives, the following contingent remedial elements will be required and the remedy will achieve a Track 2 restricted residential cleanup.

Contingent Remedial Elements:

4. Institutional Controls

Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires 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 restricted residential, commercial and industrial uses 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. Site Management Plan

A Site Management Plan, which would 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:

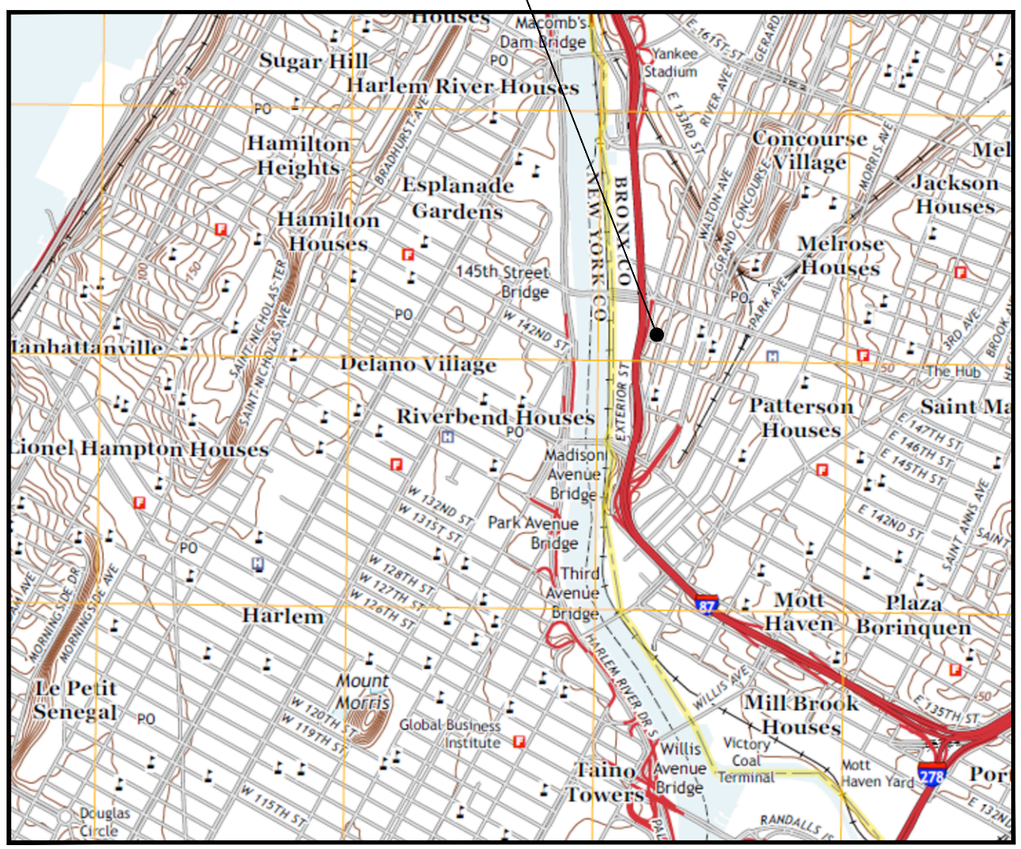
Institutional Controls: The Environmental Easement discussed in Paragraph 4 above.

This plan includes, but may not be limited to:

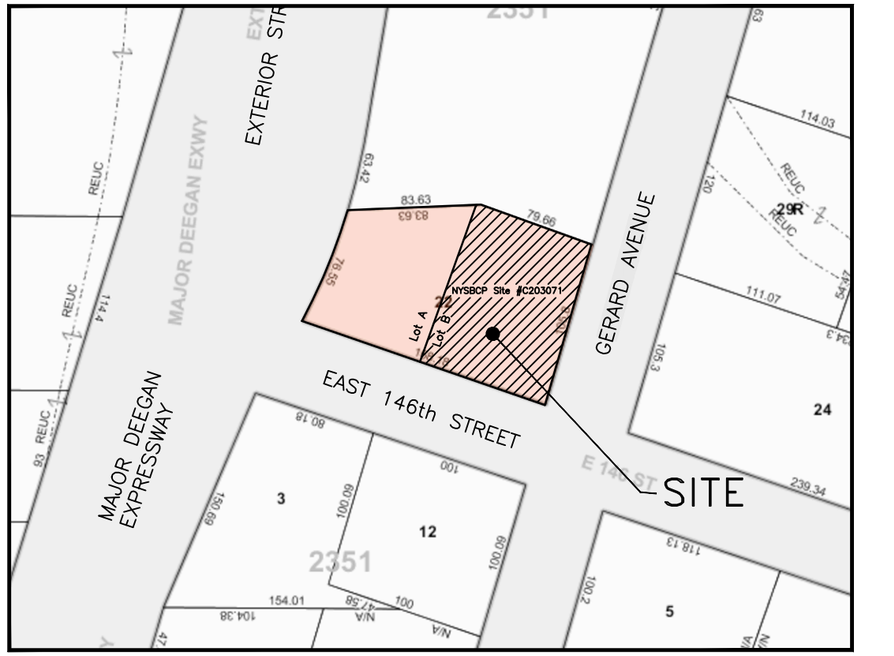
- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and/or groundwater and/or surface water use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- 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:

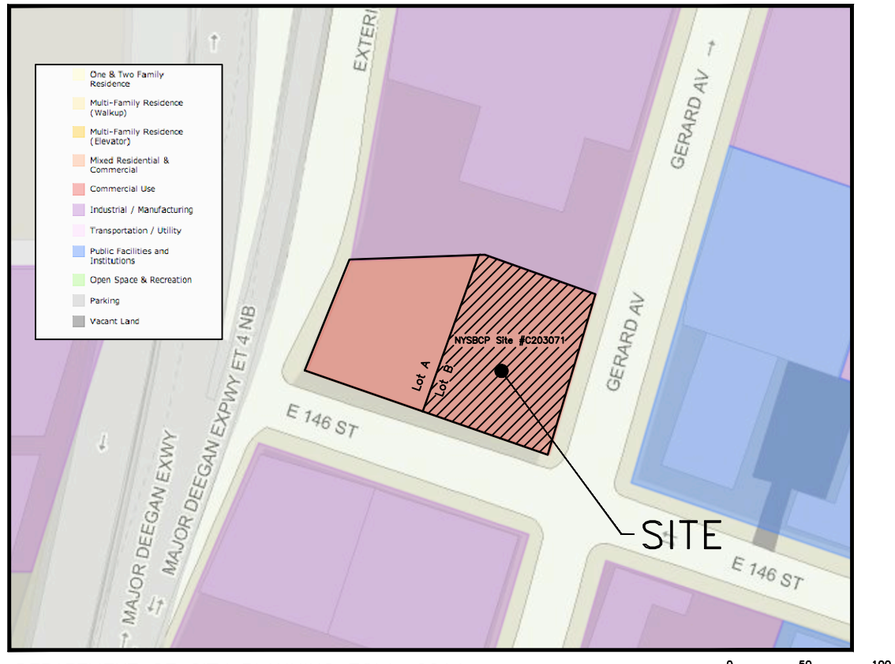
- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any new buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.



RE: USGS CENTRAL PARK–NY–NJ QUADRANGLE, 2013
http://www.usgs.gov



RE: DEPARTMENT OF FINANCE, DIGITAL TAX MAP, 2014
http://gis.nyc.gov/taxmap/map.htm



RE: DEPARTMENT OF CITY PLANNING ZOLA, 2014
http://gis.nyc.gov/doitt/nycitymap/template?applicationName=ZOLA

CLIENT
500 EXTERIOR STREET
LOT B
BRONX, NY

CONSULTANT
TENEN ENVIRONMENTAL
TENEN ENVIRONMENTAL, LLC
121 West 27th Street
Suite 702
New York, NY 10001
D: 646-606-2332
F: 646-606-2379

DRAWN BY	CHECKED BY	DATE	SCALE
JM	MC	NOVEMBER 2017	AS NOTED

DRAWING TITLE.
SITE LOCATION

DRAWING NO.
FIGURE 1

SITE

477 Gerard Avenue
Bronx, New York
Block 2351, Lot 22

TENEN ENVIRONMENTAL

TENEN ENVIRONMENTAL, LLC
121 West 27th Street
Suite 702
New York, NY 10001
O: 646-606-2332
F: 646-606-2379

CONSULTANT

DRAWN BY	CHECKED BY	DATE	SCALE:
LM	CZ	December 2017	As Noted

DRAWING TITLE: Site Excavation Depths

DRAWING NO.: Figure 9