

# DECISION DOCUMENT

---

12096 Flatlands Avenue  
Brownfield Cleanup Program  
Brooklyn, Kings County  
Site No. C224290  
January 2024



**Department of  
Environmental  
Conservation**

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

# DECLARATION STATEMENT - DECISION DOCUMENT

---

12096 Flatlands Avenue  
Brownfield Cleanup Program  
Brooklyn, Kings County  
Site No. C224290  
January 2024

## **Statement of Purpose and Basis**

This document presents the remedy for the 12096 Flatlands Avenue 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 (NYSDEC) for the 12096 Flatlands Avenue site and the public's input to the proposed remedy presented by NYSDEC.

## **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;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be

constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise™ (available in the Sustainable Remediation Forum [SURF] library) or similar Department accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

## **2. Excavation**

Excavation and off-site disposal of contaminant source areas, including:

- any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination; and
- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u).

Excavation and off-site disposal of all on-site soils which exceed unrestricted SCOs, as defined by 6 NYCRR Part 375-6.8, to a depth of between 15 and 23.5 feet across the site. If a Track 1 cleanup is achieved, a Cover System will not be a required element of the remedy.

Approximately up to 44,000 cubic yards of material will be removed from the site.

Collection and analysis of confirmation and documentation samples at the remedial excavation depths will be used to verify that SCOs for the site have been achieved. If confirmation/documentation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify the Department, submit the sample results and, in consultation with the Department, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for

the site have been achieved.

### **3. Backfill**

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

### **4. Groundwater Extraction & Treatment**

Dewatering will be performed to facilitate the excavation of contaminated soil. Contaminated groundwater from dewatering operations will be treated as necessary prior to discharge to the municipal sewer system.

### **5. 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.

#### *Local Institutional Controls*

If no Environmental Easement (EE) or Site Management Plan (SMP) is needed to achieve soil, groundwater, or soil vapor remedial action objectives, then the following local use restriction will be relied upon to prevent ingestion of groundwater: Article 141 of the NYCDOHMH, which prohibits potable use of groundwater without prior approval.

#### *Contingent Track 1*

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

In the event that Track 1 unrestricted use is not achieved, the following contingent remedial elements will be required, and the remedy will achieve a Track 2 restricted residential cleanup. Elements of the Track 2 restricted residential cleanup will include establishment of an SMP and recording of an EE.

### **6. Institutional Control**

Imposition of an institutional control in the form of an environmental easement for the controlled property which 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);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOHMH; and

- require compliance with the Department approved Site Management Plan.

### 7. Site Management Plan

A Site Management Plan is required, which includes 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 5 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 groundwater use restrictions;
  - a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
  - 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;
    - monitoring for vapor intrusion for any buildings 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.

January 12, 2024



---

Date

---

Jane H. O'Connell  
Regional Remediation Engineer, Region 2

# DECISION DOCUMENT

12096 Flatlands Avenue  
Brooklyn, Kings County  
Site No. C224290  
January 2024

---

## **SECTION 1: SUMMARY AND PURPOSE**

The New York State Department of Environmental Conservation (NYSDEC), 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, where a contaminant is present at levels exceeding the soil cleanup objectives or other health-based or environmental standards, criteria or guidance, based on the reasonably anticipated use of the property.

NYSDEC 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**

NYSDEC 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 NYSDEC 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:

DECInfo Locator - Web Application  
<https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C224290>

Brooklyn Public Library - Spring Creek Branch  
12143 Flatlands Ave.  
Brooklyn, NY 11207  
Phone: (718) 257-6571

Brooklyn Community Board 5

127 Pennsylvania Ave, 2nd Floor  
Brooklyn, NY 11207  
Phone: (718)-819-5487

### **Receive Site Citizen Participation Information By Email**

Please note that NYSDEC'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 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**

#### Site Location:

The site is located in an urban area and is bounded to the north by Flatlands Avenue followed by a gasoline filling station, automotive repair facility, carwash, and Sheffield Avenue, to the east by Pennsylvania Avenue followed by a vacant landscaped lot and the northern courtyard of a twenty-story residential building (part of the Starrett City Complex), to the south by a twelve-story multi-family residential building, and to the west by the western extents of the gravel lot currently used for surplus parking.

#### Site Features:

The site is currently covered with recycled concrete aggregate and is used for surplus parking for the owner’s building located to the west of the site. There are no structures on the site.

#### Current Zoning and Land Use:

The site is zoned as R5 (Residential), which allows for a variety of residential housing. The Applicant has initiated a re-zoning action that would be consistent with the proposed redevelopment and, if approved, the resulting zoning designation would be R7-2 with a commercial overlay, which allows for the development of 100% income-based affordable housing and higher density buildings than currently permitted within the R5 zoning designation.

#### Past Use of the Site:

Historical site use and features include a former gasoline filling station, former operations for automotive dismantling/wrecking, and historical filling during the early 1900s using ash and residue from a municipal solid waste incinerator. Historical uses of adjacent and nearby properties include gasoline filling stations and automotive repair to the north between 1950 and 2007 and automotive junk yards adjacent to the west from 1967 through 2001.

#### Site Geology and Hydrogeology:

Based on the Remedial Investigation (RI), the subsurface strata at the Site consists of historic fill

generally consisting of brown, gray, or black fine to coarse sand with varying proportions of fine to coarse gravel, silt, clay, ash, and miscellaneous debris including brick, concrete, asphalt, wood, and glass to depths ranging from approximately 13.5 to at least 30 feet below grade. The fill is underlain by a native brown to dark brown or dark grey sand unit with varying proportion of gravel, silt and clay that extended to the determination depths of all borings, which ranged from 20 to 77 feet below grade. An ash layer was also identified within the historic fill layer during the 2018 and 2021 environmental investigations (EI). During the 2018 Phase II EI, the top of a 2- to 12-foot-thick ash layer was encountered in all soil borings at depths ranging from 6 to 10 feet below existing grade in the northern and central portions of the Site, and at approximately 18 feet below existing grade in the southern portion of the Site. Two separate ash layers were observed within two of the soil borings in the northern portion of the Site. During the 2021 RI, the top of a 0.5- to 2-foot-thick ash layer was encountered within the eastern, southwestern and western portions of the site in four of eight soils borings at depths ranging from 4 to 10 feet below existing grade across the site.

Groundwater was encountered between 12.13 and 17.44 feet below ground surface during the RI. Based on area topography, observed water level measurements, and the proximity of the site to Fresh Creek, groundwater flow is to the south toward Fresh Creek and Jamaica Bay.

A site location map is attached as Figure 1.

#### **SECTION 4: LAND USE AND PHYSICAL SETTING**

NYSDEC 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 that restricts 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) 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 Applicants under the Brownfield Cleanup Agreement are Volunteers. The Applicants do not have an obligation to address off-site contamination. However, NYSDEC 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:

- air
- 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. NYSDEC 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 contaminants of concern identified at this site is/are:

benzo(a)pyrene	lead
dibenz[a,h]anthracene	mercury
benzo(a)anthracene	cis-1,2-dichloroethene

vinyl chloride	polycyclic aromatic hydrocarbons (PAHS),
DDE	total
DDT	perfluorooctanoic acid
polychlorinated biphenyls (PCB)	perfluorooctane sulfonic acid

The contaminants 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:

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), per- and polyfluoroalkyl substances (PFAS), and pesticides. Based upon investigations conducted to date, the primary contaminants of concern are SVOCs and metals in soil.

Soil - No VOCs were detected exceeding the applicable unrestricted use soil cleanup objectives (UUSCOs). SVOCs including benzo(a)pyrene were detected at maximum concentrations of 3.63 parts per million (ppm) compared to UUSCO of 1 ppm. Dibenzo(a,h)anthracene was detected at maximum concentrations of 0.729 ppm compared to UUSCO of 0.33 ppm. Benzo(a)anthracene was detected at maximum concentrations of 4.12 ppm compared to UUSCO of 1 ppm.

Lead was detected at maximum concentrations of 4,030 ppm compared to the UUSCO of 63 ppm. Mercury was detected at a maximum concentration of 5.92 ppm compared to the UUSCO of 0.18ppm.

PCB was detected at a maximum concentration of 2.39 ppm compared to UUSCOs of 1 ppm.

Perfluorooctanesulfonic acid (PFOS) was detected in soil at a maximum concentration of 2.14 parts per billion (ppb) compared to the unrestricted use guidance value of 0.88 ppb.

Perfluorooctanoic acid (PFOA) was detected at a maximum concentration of 1.09 ppb compared to guidance value of 0.66 ppb.

Pesticide 4,4'-DDT at the central region of the site was detected at maximum concentration of 0.0117 ppm (approximate concentration) compared to the UUSCO of 0.00333 ppm. 4,4'-DDE was detected at maximum concentration of 0.0134 ppm (approximate concentration) compared to the UUSCO of 0.0033 ppm.

Data does not indicate any off-site impacts in soil related to the site.

Groundwater - During the Phase II investigation in 2018, Benzo(a)anthracene was found at a concentration of 0.0632 ppb compared to Ambient Water Quality Standards and Guidance Values (AWQSGVs) of 0.002 ppb. Subsequent sampling done during the RI phase in this location and other locations throughout the site showed no exceedances of VOCs, SVOCs, pesticides, or PCBs above AWQSGVs.

Barium (dissolved) was detected in groundwater at a maximum concentration of 1270 parts per billion (ppb) compared to AWQSGV of 1000 ppb. No other dissolved metals were detected in groundwater above AWQSGVs besides naturally occurring metals such as iron, manganese, and sodium.

PFOS was detected in groundwater at a maximum concentration of 27.5 parts per trillion (ppt) compared to AWQSGV of 2.7 ppt. PFOA was detected at highest concentrations at 169 ppt compared to AWQSGV of 6.7 ppt.

Data does not indicate any off-site impacts in groundwater related to the site.

Soil Vapor - Cis-1,2 dichloroethene was detected at a maximum concentration of 7.3 micrograms per cubic meter (ug/m<sup>3</sup>). Vinyl Chloride was detected at a maximum concentration of 22 ug/m<sup>3</sup>.

Data does not indicate any off-site impacts to soil vapor related to the site.

#### **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*.

Access to the site is unrestricted. People who enter the site will not come into contact with site-related soil and groundwater contamination unless they dig below the ground surface. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil) may move into 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. Because the site is vacant, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a concern for the site in its current

condition. However, the potential exists for inhalation of site contaminants due to soil vapor intrusion for any future on-site development. Environmental sampling indicates that soil vapor intrusion is not a concern for off-site structures.

## **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.

#### **RAOs for Environmental Protection**

- Remove the source of ground or surface water contamination.

### **Soil**

#### **RAOs for Public Health Protection**

- Prevent ingestion/direct contact with contaminated soil.

### **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 with Dewatering and Soil Vapor Evaluation 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;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise™ (available in the Sustainable Remediation Forum [SURF] library) or similar Department accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

## **2. Excavation**

Excavation and off-site disposal of contaminant source areas, including:

- any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination; and
- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u).

Excavation and off-site disposal of all on-site soils which exceed unrestricted SCOs, as defined by 6 NYCRR Part 375-6.8, to a depth of between 15 and 23.5 feet across the site. If a Track 1 cleanup is achieved, a Cover System will not be a required element of the remedy.

Approximately up to 44,000 cubic yards of material will be removed from the site.

Collection and analysis of confirmation and documentation samples at the remedial excavation depths will be used to verify that SCOs for the site have been achieved. If confirmation/documentation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify the Department, submit the sample results and, in consultation with the Department, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

## **3. Backfill**

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

## **4. Groundwater Extraction & Treatment**

Dewatering will be performed to facilitate the excavation of contaminated soil. Contaminated groundwater from dewatering operations will be treated as necessary prior to discharge to the municipal sewer system.

## **5. 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.

### *Local Institutional Controls*

If no Environmental Easement (EE) or Site Management Plan (SMP) is needed to achieve soil, groundwater, or soil vapor remedial action objectives, then the following local use restriction will be relied upon to prevent ingestion of groundwater: Article 141 of the NYCDOHMH, which prohibits potable use of groundwater without prior approval.

### *Contingent Track 1*

The intent of the remedy is to achieve Track 1 unrestricted use; therefore, no EE or SMP is anticipated. If the soil vapor intrusion (SVI) evaluation is not completed prior to completion of the Final Engineering Report, then a Site Management Plan (SMP) and Environmental Easement (EE) will be required to address the SVI evaluation and implement actions as needed. If a mitigation or monitoring action is needed, a Track 1 cleanup can only be achieved if the mitigation system or other required action is no longer needed within 5 years of the date of the

Certificate of Completion.

In the event that Track 1 unrestricted use is not achieved, the following contingent remedial elements will be required, and the remedy will achieve a Track 2 restricted residential cleanup. Elements of the Track 2 restricted residential cleanup will include establishment of an SMP and recording of an EE.

## **6. Institutional Control**

Imposition of an institutional control in the form of an environmental easement for the controlled property which 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);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOHMH; and
- require compliance with the Department approved Site Management Plan.

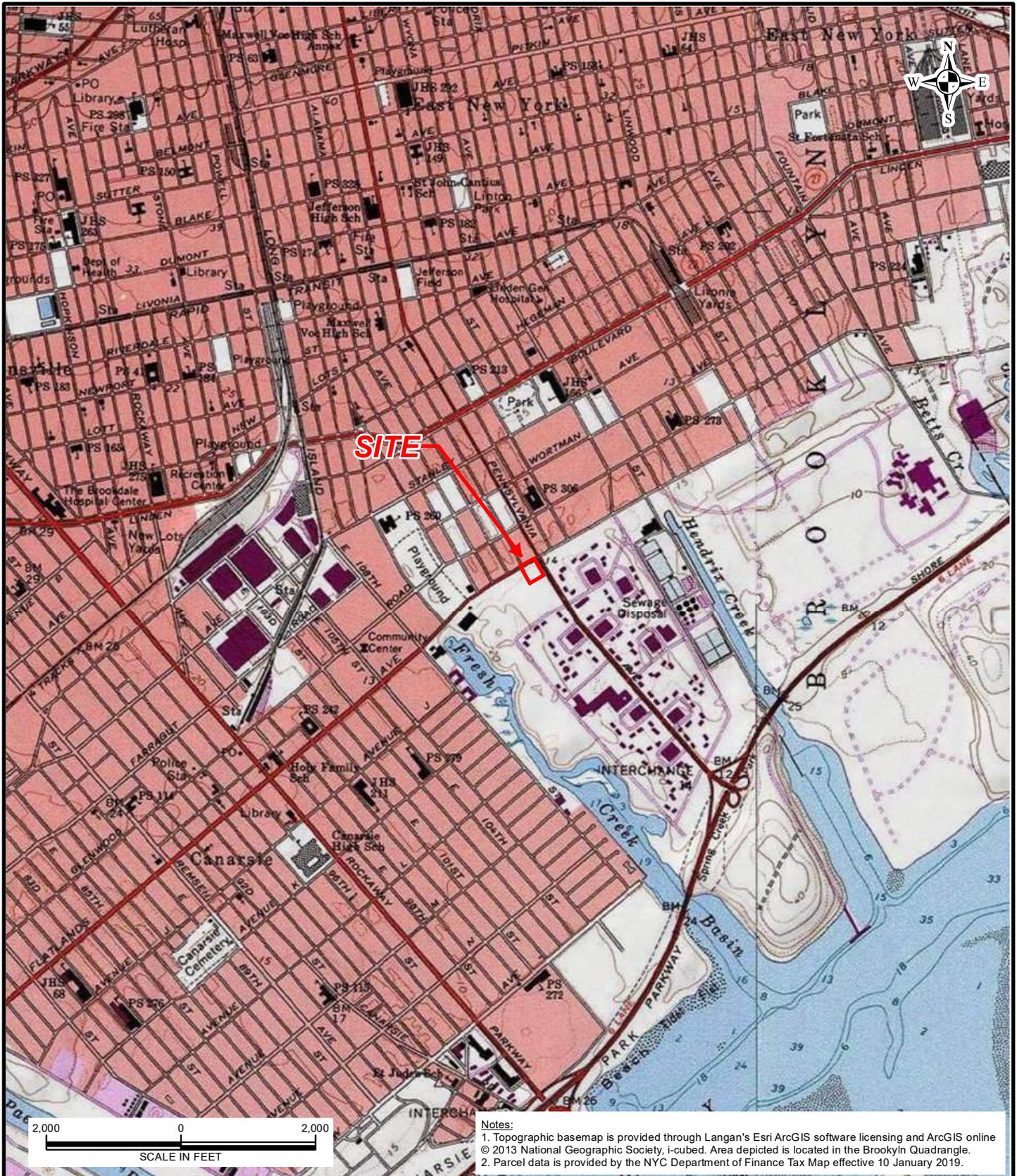
## **7. Site Management Plan**

A Site Management Plan is required, which includes 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 5 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 groundwater use restrictions;
  - a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
  - 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;
    - monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.



- Notes:
1. Topographic basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online © 2013 National Geographic Society, i-cubed. Area depicted is located in the Brooklyn Quadrangle.
  2. Parcel data is provided by the NYC Department of Finance Tax Map effective 10 January 2019.

<p>300 Kimball Drive Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901 www.langan.com</p> <p>Langan Engineering &amp; Environmental Services, Inc. Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. Langan International LLC Collectively known as Langan</p> <p>NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400</p>	Project	Drawing Title	Project No.	Figure
	12096 FLATLANDS AVENUE	SITE LOCATION MAP	100688801	1
	BLOCK No. 4434, LOT No. 10		Date	
	BROOKLYN	6/21/2021		
	KINGS COUNTY NEW YORK	Scale	1"=2,000'	Drawn By
	1"=2,000'	JR	Last Revised	
			6/21/2021	

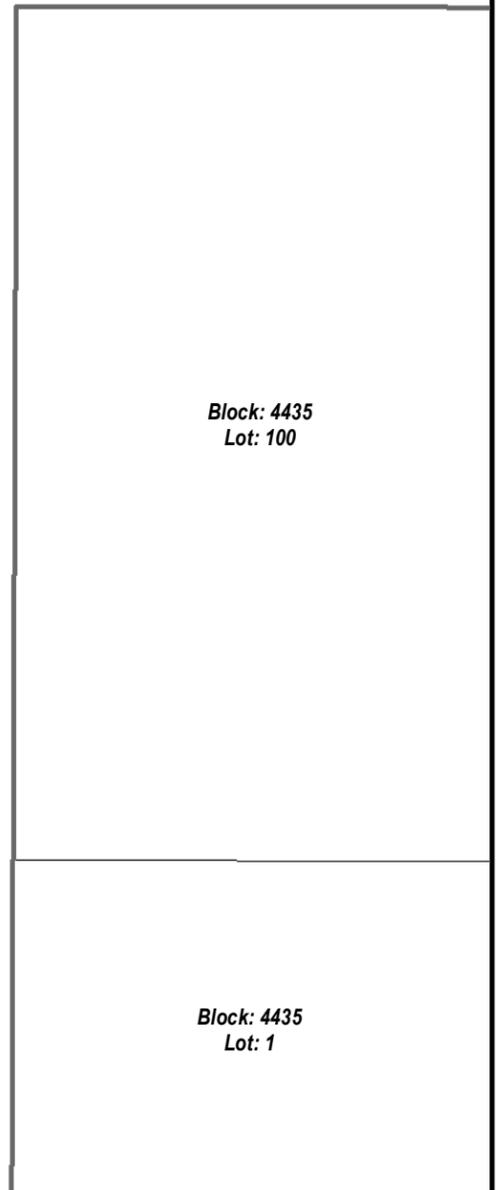
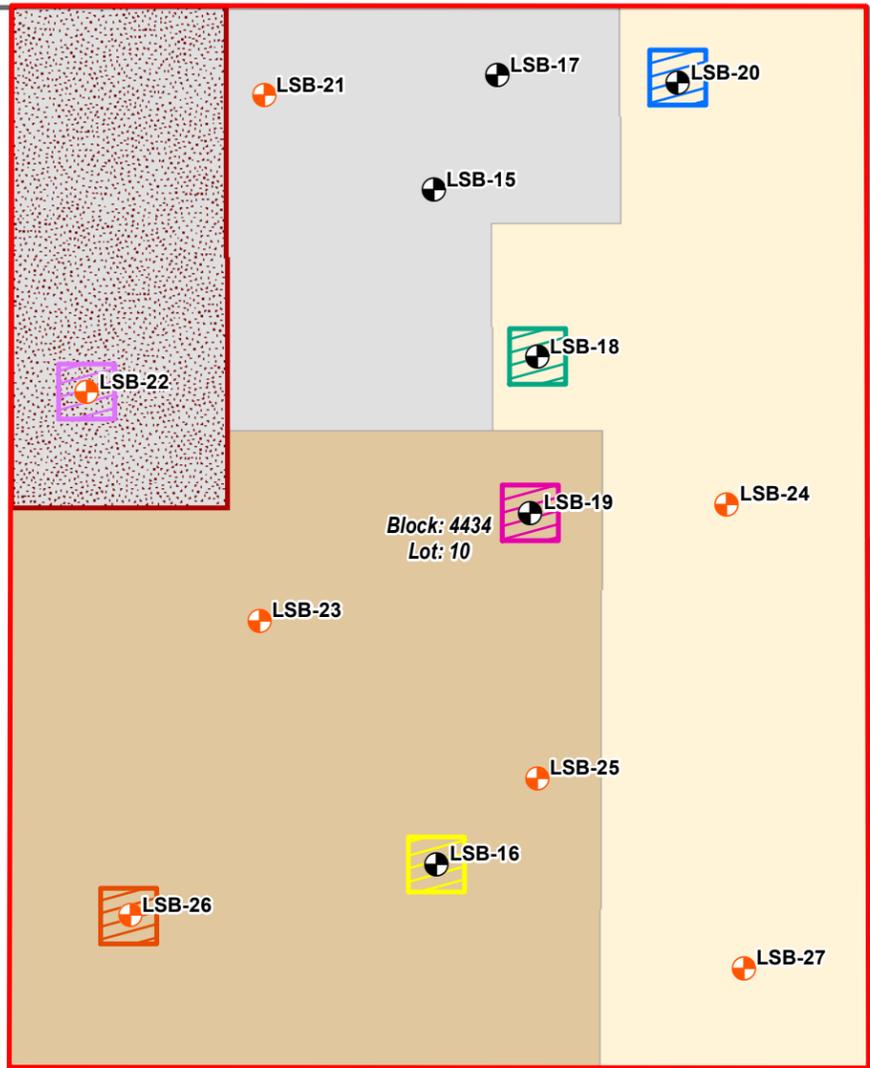


# FLATLANDS AVENUE

# PENNSYLVANIA AVENUE

**Legend**

- Site Boundary
- Tax Parcel
- Tax Block
- Remedial Excavation to 15 feet bgs
- Remedial Excavation to 16 feet bgs
- Remedial Excavation to 20 feet bgs
- Remedial Excavation to approximately 16 feet bgs for the removal of the metals hot spot area
- Remedial Excavation to approximately 18 feet bgs for the removal of the metals hot spot area
- Remedial Excavation to approximately 19.5 feet bgs for the removal of the metals hot spot area
- Remedial Excavation to approximately 21 feet bgs for the removal of the metals and PCB hot spot area
- Remedial Excavation to approximately 22.5 feet bgs for the removal of the metals and PCB hot spot area
- Remedial Excavation to approximately 23.5 feet bgs for the removal of the metals and pesticides hot spot area
- Area to be raised to development depth with imported material following the remedial excavation
- 2018 Phase II Soil Boring Location
- 2021 RI Soil Boring Location



**LANGAN**  
 300 Kimball Drive  
 Parsippany, NJ 07054  
 T: 973.560.4900 F: 973.560.4901 www.langan.com

Langan Engineering & Environmental Services, Inc.  
 Langan Engineering, Environmental, Surveying,  
 Landscape Architecture and Geology, D.P.C.  
 Langan International LLC  
 Collectively known as Langan

NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project  
**12096 FLATLANDS AVENUE**  
 BLOCK No. 4434, LOT No. 10  
 BROOKLYN  
 NEW YORK

Drawing Title  
**ALTERNATIVE I – TRACK 1 CLEANUP**

Project No. 100688801	Figure <b>2</b>
Date 6/8/2023	
Scale 1" = 50'	
Drawn By IHB	
Last Revised 6/9/2023	

References:  
 1. Parcel information from MapPLUTO 21v1 copyrighted by the New York City Department of Planning.  
 2. Topographic contours obtained from "V-001.0.0 - Boundary and Topographic Survey," drawn by Control Point Associates, Inc., last updated June 22, 2021.  
 3. bgs = below ground surface  
 4. SCOs = Soil Cleanup Objectives