DECISION DOCUMENT

380 4th Avenue
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224358
April 2023

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

DECLARATION STATEMENT - DECISION DOCUMENT

380 4th Avenue
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224358
April 2023

Statement of Purpose and Basis

This document presents the remedy for the 380 4th 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 (the Department) for the 380 4th 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;
- 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.
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

2. Excavation

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

- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards;
- any underground storage tanks (USTs), fuel dispensers, underground piping or other structures; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

Excavation and off-site disposal of all on-site soils which exceed restricted-residential soil cleanup objectives (SCOs), as defined by 6 NYCRR Part 375-6.8 in the upper 15 feet. If a Track 2 restricted residential cleanup is achieved, a Cover System will not be a required element of the remedy. 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.

Approximately 11,200 cubic yards of contaminated soil will be removed from the site.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits.

5. 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. Institutional Controls

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 NYCDOH; and
- require compliance with the Department approved Site Management Plan.

5. 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 4.
- Engineering Controls: The Cover System (if necessary) described in Paragraph 6.

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
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 7 below (if needed) will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- 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. Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Contingent Remedial Elements

In the event that Track 2 restricted residential use is not achieved, the following contingent remedial elements will be required, and the remedy will achieve a Track 4 restricted residential cleanup.

7. Cover System

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used, it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

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.

4/6/23
Date

Janet E. Brown
Assistant Division Director

DECISION DOCUMENT

380 4th Avenue
Brooklyn, Kings County
Site No. C224358
April 2023

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, 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.

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

SECTION 2: CITIZEN PARTICIPATION

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

DECInfo Locator - Web Application
https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C224358

Brooklyn Community Board 6
250 Baltic Street
Brooklyn, NY 11201
Phone: (718) 643-3027

Park Slope Library
431 6th Avenue
Brooklyn, NY 11215
Phone: (718) 823-1853

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 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 0.459-acre site is located at 380 4th Avenue in the Gowanus neighborhood of Brooklyn in a residential, commercial, and manufacturing-zoned area. The site is bounded to the north by commercial buildings and a hotel with associated parking lots, followed by 3rd Street; to the south by a U-Haul facility parking lot, followed by 6th Street; to the east by 4th Avenue, followed by commercial and residential buildings; and to the west by a U-Haul facility and associated parking lots, followed by 3rd Avenue. The larger surrounding area is occupied predominantly by commercial and auto-related uses, with some residential uses to the east.

Site Features:
Currently, the site is vacant, but recently consisted of a slab-on-grade, one-story structure that operated as a taxi business prior to its demolition in March 2022.

Current Zoning and Land Use:
The site is currently zoned as C4-4D commercial with a residential district equivalent of R8A, which is designated for commercial areas that are substantially residential in character. It is also located within the Special Enhanced Commercial District (EC-1) and a Mandatory Inclusionary Housing Area. The site was rezoned in November 2021 as part of the Gowanus Neighborhood Plan. The surrounding area is predominately commercial and automotive-related, with some nearby industrial uses including lumber storage, a metalworks, and a salvage company.

Past Land Use:
The site was developed prior to 1920 with a multi-story building on the central portion of the site that operated as a merchandise storage company. By 1928, the building was demolished and vacant and by 1940, the site appeared to be developed with the most recent building footprint. The site most recently operated as a taxi business up until December 2021 and housed numerous vehicles on interior and exterior portions of the site, performed routine auto repair/maintenance, and stored petroleum products in drums and above ground storage tanks (ASTs) throughout the site. Five ASTs were located in the former building, consisting of two 275-gallon motor oil ASTs, one 275-

gallon transmission fluid AST, and one 275-gallon waste oil/used oil AST. One 2,500-gallon tank containing No. 2 fuel oil was encased in concrete aboveground but was listed in the NYSDEC Petroleum Bulk Storage database as an underground storage tank (UST). All tanks were removed in February 2022 as part of the building demolition process. An UST is also suspected near a fill port located in the sidewalk adjacent to the northeastern side of the building which is associated with an open spill case. Petroleum staining was observed on the concrete floor at numerous locations, which was noted to be cracked and degraded. The site building utilized a network of trench drains for the collection of wash water and other fluids that discharged to an oil/water separator prior to ultimate discharge to the municipal sewer system.

Site Geology and Hydrology:
The site elevation is approximately 22 feet above the North American Vertical Datum of 1988 (NAVD 88) and is generally level. The depth to groundwater is approximately 15 feet below grade and flows in a westerly to northwesterly direction beneath the site. Actual groundwater table depth and flow direction may be affected by many factors such as subsurface openings or obstructions, pumping at nearby construction sites, and/or tidal influences from the Gowanus Canal. Groundwater in this part of Brooklyn is not used as a source of potable water, since the municipal water supply comes from upstate reservoirs.

The stratigraphy of the site consists of historic fill material including sand, silt, clay, gravel, brick, concrete, wood, and ash extending to approximately 26 to 33 feet below grade (ftbg) along the central and western portions of the site, and to shallower depths between 10 and 20 ftbg in the eastern portion of the site along 4th Avenue. The fill layer is underlain by presumed clay, silt, sand, and organic matter (peat) to at least 35 ftbg. Bedrock was not encountered during investigation activities.

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 under the Brownfield Cleanup Agreement is a Volunteer. The Applicant does 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(a)pyrene
benzo(b)fluoranthene
benzo(k)fluoranthene
chrysene
dibenz[a,h]anthracene
indeno(1,2,3-cd)pyrene
arsenic
cadmium
copper
lead
mercury
nickel
silver
benzene
isopropylbenzene
xylene (mixed)
n-propylbenzene
sec-butylbenzene
tetrachloroethylene (PCE)
trichloroethylene TCE

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.

Support of Excavation Installation

The elements of the ongoing IRM include installation of soldier piles along the site perimeter, which will enable future installation of lagging to facilitate support of excavation (SOE) for remedial excavation of the contaminated soil and fill identified during remedial investigations. IRM activities began in March 2023 and are ongoing. These activities will be documented in the Final Engineering Report (FER).

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. Soil vapor was analyzed for VOCs. Based upon investigations conducted to date, the primary contaminants of concern include VOCs, SVOCs, and metals in soil, and VOCs in groundwater and soil vapor.

Soil:

Several petroleum-related VOCs were detected in soil at concentrations above their respective protection of groundwater sol cleanup objective (PGWSCO), where applicable, but below restricted-residential soil cleanup objectives (RRSCO) primarily in the eastern and southeastern areas of the site including: benzene up to 0.41 ppm (PGWSCO of 0.06 ppm), methyl ethyl ketone up to 0.16 ppm (PGWSCO of 0.12 ppm), n-propyl benzene up to 9 ppm (PGWSCO of 3.9 ppm), and total xylenes up to 1.6 ppm (PGWSCO of 1.6 ppm).

Several SVOCs were detected throughout on-site soil at concentrations exceeding their respective RRSCOs up to a depth of 32 feet below ground surface (bgs) including: benzo(a)anthracene up to 34 ppm (RRSCO of 1 ppm), benzo(a)pyrene up to 29 ppm (RRSCO of 1 ppm), benzo(b)fluoranthene up to 36 ppm (RRSCO of 1 ppm), benzo(k)fluoranthene up to 13 ppm (RRSCO of 3.9 ppm), chrysene up to 30 ppm (RRSCO of 3.9 ppm), dibenzo(a,h)anthracene up to 4 ppm (RRSCO of 0.33 ppm), and indeno-(1,2,3-c,d)pyrene up to 16 ppm (RRSCO of 0.5 ppm).

Metals were also detected across the site at concentrations exceeding their RRSCOs including: arsenic up to of 461 ppm (RRSCO of 16 ppm), cadmium up to 5.5 ppm (RRSCO of 4.3 ppm), copper up to 12,600 ppm (RRSCO of 270 ppm), lead up to 3,160 ppm (RRSCO of 400 ppm), mercury up to 9.5 ppm (RRSCO of 0.81 ppm), nickel up to 319 ppm (RRSCO of 310 ppm), and silver up to 882 ppm (RRSCO of 180 ppm).

Toxicity Characteristic Leaching Procedure (TCLP) analysis for hazardous lead was conducted and two samples were above the 6 NYCRR Part 371.3(e) level of 5 ppm at concentrations of 5.75 ppm and 86.7 ppm.

No pesticides or PCBs were detected above their respective RRSCOs. 1,4-Dioxane was not detected in any of the samples collected and PFAS were not detected above their respective restricted residential or protection of groundwater guidance values.

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

Groundwater:

VOCs detected above Class GA Ambient Water Quality Standards (AWQS) include: benzene up to 17 ppb (AWQS of 1 ppb), chloroform up to 12 ppb (AWQS of 7 ppb), isopropylbenzene up to 54 ppb (AWQS of 5 ppb), m,p-xylenes up to 7.5 ppb (AWQS of 5 ppb), n-propylbenzene up to 48 ppb (AWQS of 5 ppb), and sec-butylbenzene up to 14 ppb (AWQS of 5 ppb).

No SVOCs were detected above AWQS during the supplemental RI groundwater sampling. SVOCs were detected slightly above AWQS during a previous subsurface investigation but are attributed to the presence of entrained sediment. Excluding naturally occurring minerals, such as manganese and sodium, no dissolved metals were detected above standards in site groundwater. Chloroform is a common byproduct of water chlorination; its presence is likely due to leaking water and/or sewer pipes.

One PFAS compound, perfluorooctanoic acid (PFOA), was detected up to 68.2 parts per trillion (ppt) exceeding the ambient water quality guidance value of 6.7 ppt in groundwater. There are no public water supply wells within a half mile of the site and there is a municipal prohibition on the use of groundwater underlying the site.

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

Soil Vapor:

The following chlorinated VOCs were detected in soil vapor: tetrachloroethylene (PCE) up to 540 micrograms per cubic meter ($\mu g/m^3$), trichloroethylene (TCE) up to 24 $\mu g/m^3$, and carbon tetrachloride up to 1.5 $\mu g/m^3$. Additionally, petroleum-related VOCs were detected in soil vapor, with the greatest concentrations detected in the northeastern portion of the site, including butane up to 44,000 $\mu g/m^3$, cyclohexane up to 40,000 $\mu g/m^3$ and toluene up to 1,200 $\mu g/m^3$.

Data does not indicate any off-site impacts in soil vapor related to this 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.*

The site is completely fenced, which restricts public access. However, persons who enter the site could contact contaminants in the soil by walking on the site, digging or otherwise disturbing the soil. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source 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 there is no on-site building, 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 the inhalation of site contaminants due to soil vapor intrusion for any future on-site development. In addition, sampling indicates soil vapor intrusion from site-related contamination 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

- 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 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 2: Restricted use with generic soil cleanup objectives 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;
• 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.
• Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

2. Excavation

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

- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards;
- any underground storage tanks (USTs), fuel dispensers, underground piping or other structures; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

Excavation and off-site disposal of all on-site soils which exceed restricted-residential soil cleanup objectives (SCOs), as defined by 6 NYCRR Part 375-6.8 in the upper 15 feet. If a Track 2 restricted residential cleanup is achieved, a Cover System will not be a required element of the remedy. 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.

Approximately 11,200 cubic yards of contaminated soil will be removed from the site.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits.

5. 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. Institutional Controls

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 NYCDOH; and
- require compliance with the Department approved Site Management Plan.

5. Site Management Plan

A Site Management Plan is required, which includes the following:

b. 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.
- Engineering Controls: The Cover System (if necessary) described in Paragraph 6.

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
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 7 below (if needed) will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- 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. Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- monitoring for vapor intrusion for any buildings on the site, as may be required by the

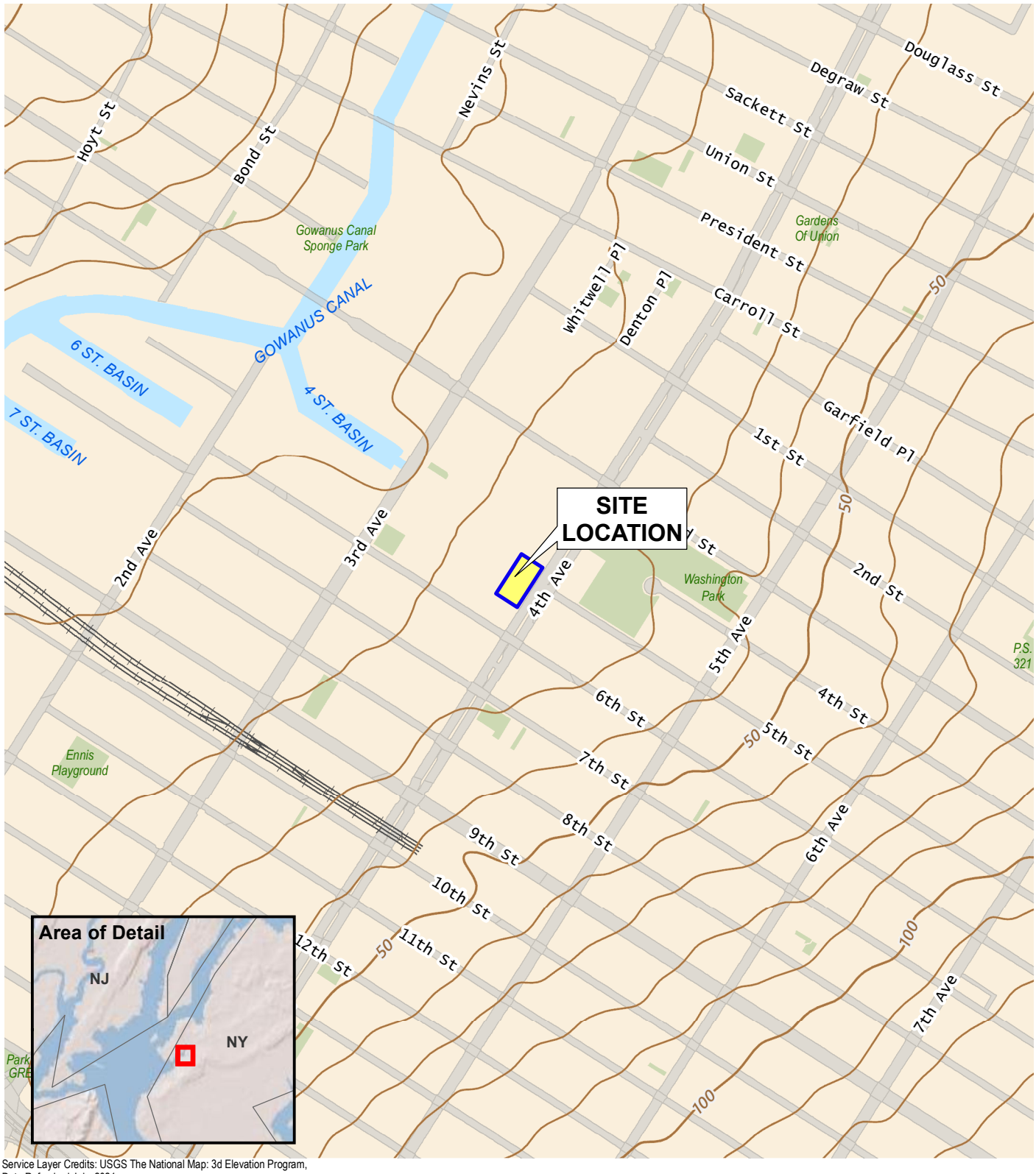
Institutional and Engineering Control Plan discussed above.

Contingent Remedial Elements

In the event that Track 2 restricted residential use is not achieved, the following contingent remedial elements will be required, and the remedy will achieve a Track 4 restricted residential cleanup.

7. Cover System

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used, it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.



Service Layer Credits: USGS The National Map: 3d Elevation Program, Data Refreshed July, 2021

AKRF
440 Park Avenue South, New York, NY 10016

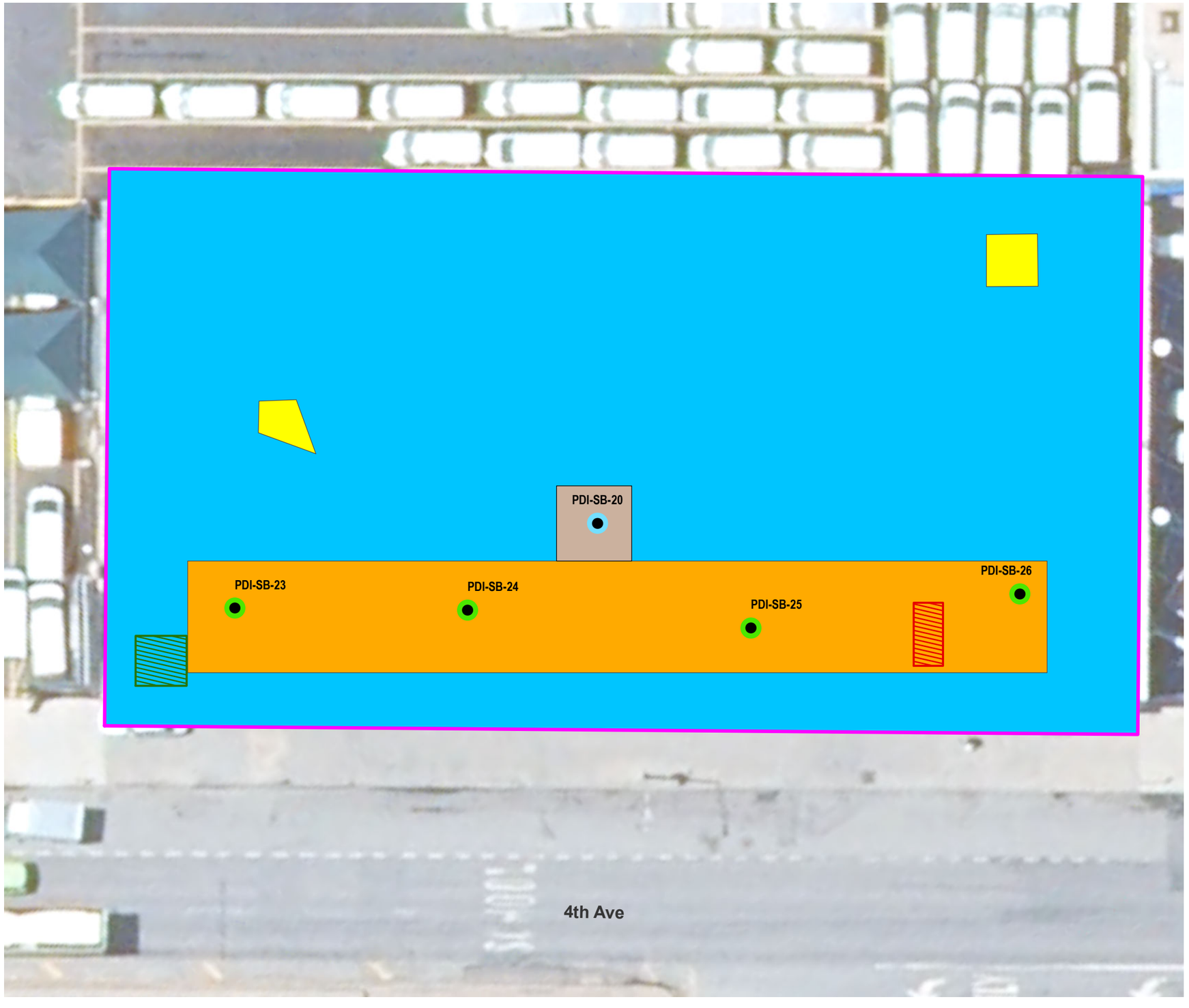
380 4th Avenue
Brooklyn, New York

BCP SITE LOCATION

DATE
5/2/2022

PROJECT NO.
210226

FIGURE
1



LEGEND

- PROJECT SITE BOUNDARY
- EXCAVATION TO 15 FEET BGS
- EXCAVATION TO 20 FEET BGS TO REMOVE HAZARDOUS SOIL
- EXCAVATION TO 20 FEET BGS TO REMOVE PETROLEUM CONTAMINATION
- EXCAVATION TO 25 FEET BGS TO REMOVE PETROLEUM CONTAMINATION
- PREVIOUS INVESTIGATION SOIL BORING LOCATION WITH PETROLEUM CONTAMINATION OBSERVED UP TO 20 FEET BGS.
- PREVIOUS INVESTIGATION SOIL BORING LOCATION WITH PETROLEUM CONTAMINATION OBSERVED UP TO 25 FEET BGS.
- FORMER ENCASED IN CONCRETE ABOVEGROUND STORAGE TANK (REMOVED FEB. 2022)
- SUSPECT UNDERGROUND STORAGE TANK

Note:
BGS - Below Ground Surface

0 10 20 40

SCALE IN FEET

Map Source:
NYCDCP (NYC Dept. of City Planning) GIS database

AKRF
440 Park Avenue South, New York, NY 10016

380 4th Avenue
Brooklyn, New York

PROPOSED REMEDIAL EXCAVATION PLAN

DATE
3/29/2023

PROJECT NO.
210226

FIGURE
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