

DECISION DOCUMENT

45 Commercial Street
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224304
April 2021



**Department of
Environmental
Conservation**

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

DECLARATION STATEMENT - DECISION DOCUMENT

45 Commercial Street
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224304
April 2021

Statement of Purpose and Basis

This document presents the remedy for the 45 Commercial Street 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 45 Commercial Street 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;
- 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 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

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;
- soil containing total SVOCs exceeding 500 ppm; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

All soils in the upper two feet which exceed the restricted residential SCOs will be excavated and transported off-site for disposal.

Approximately 3500 cubic yards of contaminated soil will be removed from the site.

3. Backfill

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

4. 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.

5. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the migration of vapors into the building from soil.

6. Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 4 restricted residential cleanup.

7. 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 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.

8. 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 6 above.

Engineering Controls: The soil cover discussed in Paragraph 4 and the sub-slab depressurization system discussed in Paragraph 5 above.

This plan includes, but may not be limited to:

- 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 that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above 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. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of soil vapor to assess the performance and effectiveness of the remedy;
- 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.

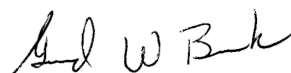
c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection and reporting of any mechanical or physical components of the active vapor mitigation system. The plan includes, but is not limited to:

- procedures for operating and maintaining the system; and
- compliance inspection of the system to ensure proper O&M as well as providing the data for any necessary reporting.

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.

April 13, 2021



Date

Gerard Burke, Bureau Director
Division of Environmental Remediation

DECISION DOCUMENT

45 Commercial Street
Brooklyn, Kings County
Site No. C224304
April 2021

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 repositories:

DECInfo Locator - Web Application

<https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C224304>

Leonard Library
81 Devoe Street at Leonard Street
Brooklyn, NY 11211
Phone: (718) 486-6006

Brooklyn Community Board 1
435 Graham Avenue
Brooklyn, NY 11211
Phone: (718) 389-0009

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 site is located at 45 Commercial Street in the Greenpoint neighborhood of Brooklyn (Tax Block 2472, Lot 70). There is a parcel under construction to the north, followed by Newtown Creek, a parking lot to the east, Commercial Street to the south, and multi-story commercial/ residential building to the west.

Site Features: The site is approximately 44,600 square feet, flat, and is paved with concrete and asphalt.

Current Zoning and Land Use: The site is located in an R6/R8/C2-4 mixed-use residential and commercial district. The site is currently vacant.

Past Use of the Site: Coal and lumber storage were the primary uses of the property from the late 1800s until about 1980. Since then, the site has been used for parking and equipment & material storage.

Site Geology and Hydrogeology: The site consists of a surficial layer of historic fill material overlying native fine- to coarse-grained sandy and silty soil. The historic fill is composed of varying amounts of sand and silt from surface grade to depths of 10 to 15 feet below ground surface (bgs). Bedrock was not encountered during any environmental investigations performed at the site.

Groundwater was encountered at 8-10 feet bgs. Groundwater flow was toward the west during the investigation, toward the confluence of the East River and Newtown Creek.

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 Applicants under the Brownfield Cleanup Agreement are Volunteers. The Applicants 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 contaminants of concern identified at this site are:

lead	benzo(a)pyrene
copper	chrysene
arsenic	semi-volatile organic compounds (SVOCs)
mercury	acetone
barium	n-hexane
benzo(a)anthracene	n-pentane

The contaminants 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.

Nature and Extent of Contamination: The property has been the subject of various investigations since 2001. The most recent investigation results from 2019 and from the 2020 Remedial Investigation Report are described below:

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), pesticides and the emerging contaminants per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane. Soil vapor was analyzed for VOCs.

Soil- The primary contaminants in soil at this site are metals and SVOCs. Arsenic, copper and lead, with lesser amounts of barium and mercury, exceed the applicable restricted residential soil cleanup objectives (RRSCOs). Arsenic was found at a maximum concentration of up to 60 parts per million (ppm) compared to the RRSCO of 16 ppm, though later samples contained arsenic ranging from 8-16 ppm sitewide. Copper was found at 599 ppm (RRSCO is 270 ppm). Lead in soil ranges up to 10,900 ppm (RRSCO is 400 ppm). Individual SVOCs, such as benzo(a)anthracene, benzo(a)pyrene, and chrysene, were found throughout the site above the RRSCOs. In one location, SVOCs totaled 789 ppm which exceeds the 500 ppm total cleanup objective.

For emerging contaminants, perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were detected. PFOS was measured in two soil samples, below the guidance value for unrestricted use of 0.88 parts per billion (ppb). PFOA was detected in one soil sample at 1.7 ppb, exceeding the unrestricted use and the protection of groundwater guidance values of 0.66 ppb and 1.1 ppb, respectively, but below the restricted residential standard of 33 ppb.

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

Groundwater- Groundwater exceeds ambient water quality standards (AWQS) for the naturally-occurring metals iron, sodium, magnesium and manganese, and the VOC 1,2-dichloroethane (1,2-DCA) which was detected at 1 part per billion (ppb), slightly exceeding the standard of 0.6 ppb.

PFOA and PFOS were reported at concentrations of up to 170 and 25 parts per trillion (ppt), respectively, exceeding the Maximum Contaminant Level (drinking water standard) of 10 ppt in groundwater.

1,4-dioxane was reported at concentrations of up to 0.1 ppb, which is below the Maximum Contaminant Level (drinking water standard) of 1 ppb.

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

Soil Vapor - Five soil vapor samples were obtained in 2020. The primary contaminants in soil vapor are volatile organic compounds such as acetone 860 ug/m³ (micrograms per cubic meter), n-pentane (180 u/gm³) and n-hexane (470 ug/m³). One of the five samples contained PCE at 1.8 ug/m³ which is just above the detection level. Other chlorinated compounds were detected in the soil vapor, such as dichlorodifluoromethane (R-12) (3 ug/m³) and trichlorofluoromethane (R-11) (2.2ug/m³).

Data does not indicate any off-site impacts in 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 is restricted by a fence. However, people who enter the site may come into contact with site related soil and groundwater contamination if they dig below the surface. Volatile organic compounds in soil vapor (air spaces within soil) may move into buildings and affect 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 vacant so inhalation of site contaminants in indoor air via vapor intrusion is not a current concern. However, the potential exists for inhalation of site contaminants due to soil vapor intrusion for any future on-site development. In addition, sampling indicates soil vapor intrusion, as a result of this site, is not a concern for other 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.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

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.

- 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 4 remedy.

The selected remedy is referred to as the Excavation, Site Cover System, and Vapor Mitigation 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 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

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);

- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;
- soil containing total SVOCs exceeding 500 ppm; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

All soils in the upper two feet which exceed the restricted residential SCOs will be excavated and transported off-site for disposal.

Approximately 3,500 cubic yards of contaminated soil will be removed from the site.

3. Backfill

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

4. 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.

5. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the migration of vapors into the building from soil.

6. Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 4 restricted residential cleanup.

7. 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 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.

8. 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 6 above.

Engineering Controls: The soil cover discussed in Paragraph 4 and the sub-slab depressurization system discussed in Paragraph 5 above.

This plan includes, but may not be limited to:

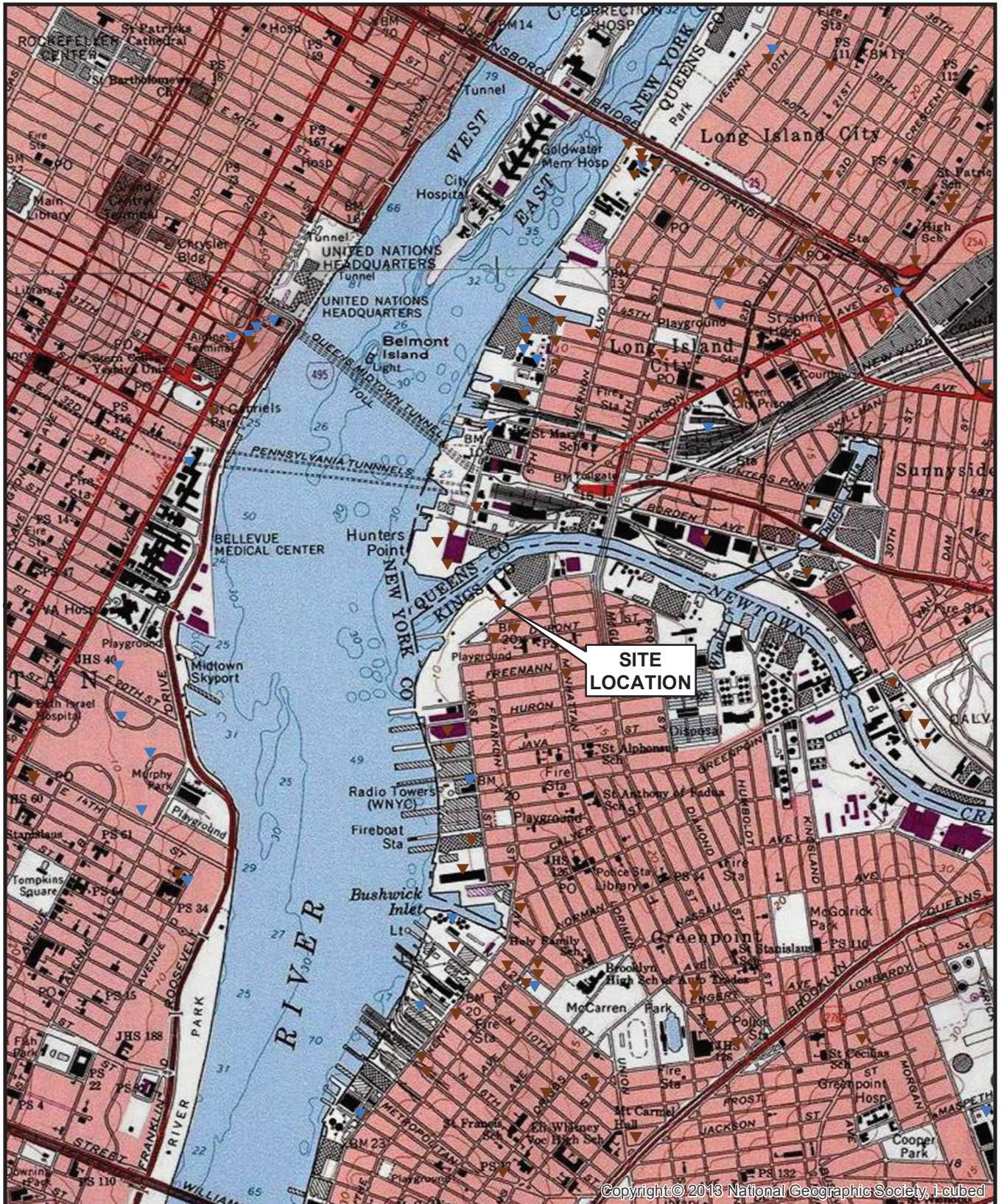
- Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- Descriptions of the provisions of the environmental easement including any land use, and/or groundwater and/or surface water use restrictions;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above 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. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of soil vapor to assess the performance and effectiveness of the remedy;
- 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.

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection and reporting of any mechanical or physical components of the active vapor mitigation system. The plan includes, but is not limited to:

- procedures for operating and maintaining the system; and
- compliance inspection of the system to ensure proper O&M as well as providing the data for any necessary reporting.



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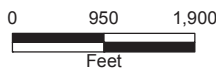


Figure 1 Site Location Map

45 Commercial Street
Greenpoint, Brooklyn
Site No. C224304

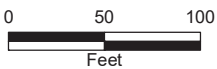









Figure 2 Site Map

45 Commercial Street
Brooklyn, Kings County
Site No. C224304



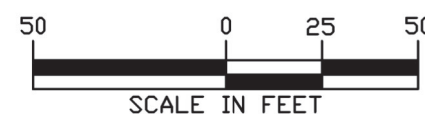
LEGEND:

-  APPROXIMATE SITE BOUNDARY
-  APPROXIMATE TAX LOT BOUNDARY
-  PROPOSED TRACK 4 EXCAVATION EXTENTS TO 2 FEET BGS
-  PROPOSED HCTSPOT EXCAVATION TO REMOVE HAZARDOUS CONCENTRATIONS OF LEAD TO ABOUT 4 FEET BGS (ABOUT EL. +8 FEET) AROUND RI BORING LB17 AND ABOUT 7 FEET BGS (ABOUT EL. +5 FEET) AROUND RI BORING LB22
-  PROPOSED HCTSPOT EXCAVATION TO REMOVE SVOC AND ARSENIC-IMPACTED SOIL TO ABOUT 9 FEET BELOW BGS (ABOUT EL. +2 FEET) AROUND RI BORING LB16 AND SI BORING LB11
-  PROPOSED HCTSPOT EXCAVATION TO REMOVE SOIL CONTAINING A HAZARDOUS CONCENTRATION OF LEAD AND PFOA AT A CONCENTRATION ABOVE ITS MCL TO ABOUT 7 FEET BGS (ABOUT EL. +5 FEET) AROUND RI BORING LB18
-  PROPOSED ENDPOINT SAMPLE LOCATION

NOTES:

1. BASE MAP SOURCES: TOPOGRAPHIC BOUNDARY & UTILITY SURVEY DRAWING, DATED MAY 25, 2018, PREPARED BY LANGAN.
2. NORTH ARROW SHOWS TRUE NORTH.
3. ELEVATIONS SHOWN IN THE FIGURE ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), WHICH IS APPROXIMATELY 1.1 FEET ABOVE MEAN SEA LEVEL DATUM AT SANDY HOOK, NEW JERSEY AS DEFINED BY THE UNITED STATES GEOLOGIC SURVEY (USGS NGVD 1929).
4. ALL LOCATIONS ARE APPROXIMATE.
5. A TOTAL OF FIVE ENDPOINT SAMPLES (FOUR SIDEWALL SAMPLES AND ONE BASE SAMPLE) WILL BE COLLECTED AT EACH HOTSPOT EXCAVATION.
6. PFOA = PERFLUOROCTANIC ACID
7. NYSDEC = NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
8. SVOC = SEMIVOLATILE ORGANIC COMPOUND
9. BGS = BELOW GRADE SURFACE
10. RI = REMEDIAL INVESTIGATION
11. SI = SUBSURFACE INVESTIGATION
12. MCL = MAXIMUM CONTAMINANT LEVEL

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.



LANGAN
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Project
45 COMMERCIAL STREET
 BLOCK No. 2472, LOT No. 70
 BROOKLYN
 KINGS COUNTY NEW YORK

Figure Title
TRACK 4 CLEANUP PLAN

Project No.
 170229024
 Date
 10/21/2020
 Drawn By
 RB
 Checked By
 JL

Figure No.
3