DECISION DOCUMENT

205 Park Avenue
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224319
January 2022

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

DECLARATION STATEMENT - DECISION DOCUMENT

205 Park Avenue
Brownfield Cleanup Program
Brooklyn, Kings County
Site No. C224319
January 2022

Statement of Purpose and Basis

This document presents the remedy for the 205 Park Avenue site, a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the 205 Park Avenue site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- 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 all on-site soils which exceed unrestricted use SCOs, as defined by 6 NYCRR Part 375-6.8. If a Track 1 cleanup is achieved, a Cover System will not be a required element of the remedy.

Approximately 9,000 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 complete the backfilling of the excavation and establish the designed grades at the site.

4. 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.

5. In- Situ Treatment using Activated Carbon

Activated carbon will be added to the subsurface to capture and prevent the migration of chlorinated volatile organic compounds (CVOCs) in groundwater. In the area of the captured contamination, conditions will be maintained that will allow anaerobic degradation of CVOCs to occur. Activated carbon will be added to the subsurface via 18 injection points. Approximately 9,200 pounds of a mixture of liquid activated carbon and 21,000 gallons of water will be injected to form an in-situ upgradient barrier. The upgradient barrier will be 106 feet long with a targeted injection interval of 25 to 45 feet bgs. Injection points will be spaced 6 feet apart. After the injections, monitoring will be required within, and downgradient of, the treatment zone. Monitoring will be conducted for the detected contaminants and their degradation by-products to ensure the remedy is effective.

6. Local Institutional Controls

If an Environmental Easement and Site Management Plan is not required 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 NYCDOH code which prohibits potable use of groundwater without prior approval.

Conditional Track 1

The intent of the remedy is to achieve a Track 1 unrestricted use; therefore, no environmental easement or site management plan 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, including the treatment of groundwater contamination entering the site from an upgradient source and achievement of soil vapor remedial objectives, the following contingent remedial elements will be required, and the remedy will achieve a Track 2 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 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.

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:

    - Institution Control: The Environmental Easement discussed in Section 7 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;

- 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 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 groundwater and 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.

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 28, 2022

Date

Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

205 Park Avenue
Brooklyn, Kings County
Site No. C224319
January 2022

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 comments 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=C224319

Brooklyn Public Library Marcy Branch
617 DeKalb Avenue at Nostrand Avenue
Brooklyn, NY 11216
Phone: (718) 935-0032

Brooklyn Community Board 2
350 Jay Street, 8th Floor
Brooklyn, NY 11201
Phone**:** (718) 596-5410

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 12,808-square feet site is located at 205 Park Avenue in the Wallabout section of Brooklyn, NY and is identified as Block 2033 and Lot 50 on the New York City Tax Map. The site is bounded by a courtyard and two residential buildings to the north, Vanderbilt Avenue followed by residences and a motorcycle/motor scooter repair and dealership to the east, Clermont Avenue followed by residences to the west, and Park Avenue and Brooklyn Queens Expressway followed by residences and vacant property used for parking to the south. Pedestrian sidewalks surround the site on the western, eastern, and southern sides.

Site Features: The site is a vacant lot with no buildings.

Current Zoning and Land Use: The site is zoned for R7D/C2-4. The site is currently zoned for commercial and residential use. The proposed mix use of commercial and residential building comprised of six building segments is consistent with existing zoning for the property. The surrounding parcels are currently used for a mixture of commercial establishments and residential housing. Establishments to the north and west include residential apartments. Establishments to the east include residences and a motorcycle/motor scooter repair and dealership. To the south is the Brooklyn Queens expressway, followed by residences to the southwest, residences and vacant property used for parking to the south, and vacant property to the southeast.

Past Use of the Site: The site was developed as early as 1887 with two- and three-story dwellings and three 3-story stores. The site has had multiple tenants and uses since that time, including a meat market, drug store/pharmacy, stationary shop, bake shop, barber shop, grocery store, private residences, and various other commercial establishments. A dry cleaner (known as Park Dollars Cleaners) operated on site in the 1920s and 1930s. An auto service facility (known as Harris Auto Service) operated on site in the 1960s. The site had been owned and operated by the City of New York until 2001. In 2007, title was transferred to 462 Lexington LLC. However, the site has remained vacant since 2001 and all buildings on Site were demolished in April 2017.

Site Geology and Hydrogeology: Subsurface soil at the site consists of historic fill, which is primarily comprised of brick, concrete, asphalt and other debris in a brown silty-sand matrix. The stratigraphy of the site, from the surface down, consists of approximately 17 feet of historic fill underlain by native silty sand. Elevation of the property's existing ground surface ranges from approximately 28.8 to 29.9 feet above mean sea level (NAVD 88).

Groundwater was encountered at depths ranging from about 23.8 to 24.8 feet below ground surface (bgs) at the site. Based on the USGS geological survey data, groundwater flow in this area of Brooklyn is generally from south to north, although the groundwater gradient is relatively flat beneath the site as confirmed during the Remedial Investigation.

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) against unrestricted use standards, criteria and guidance values (SCGs) for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Participant. The Applicant has an obligation to address on-site and off-site contamination. 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 are:

benzo(b)fluoranthene	dieldrin
benzo(a)anthracene	4,4'-DDD
benzo(k)fluoranthene	4,4'-DDT
indeno(1,2,3-CD) pyrene	mercury
chrysene	lead
benzo(a)pyrene	nickel
tetrachloroethene (PCE)	barium
chloroform	trichloroethene (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.

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:

A site wide and limited off-site investigation on the Clearmont Avenue sidewalk adjoining the site were conducted to delineate contamination in soil, groundwater, and soil vapor. Soil and groundwater samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), pesticides, the emerging contaminants per-and polyfluoroalkyl substances (PFAS) and 1,4 dioxane. Soil vapor was analyzed for VOCs. According to the most recent analytical results, the primary contaminants of concern at the site are metals, SVOCs and chlorinated VOCs. Results are summarized below:

Soil – Several SVOCs were detected at concentrations that exceed their applicable protection of groundwater soil cleanup objectives (PGSCOs) and/or unrestricted use soil cleanup objectives (UUSCOs) including: benzo(a)anthracene up to 12 parts per million, or ppm (PGSCO is 1 ppm); benzo(a)pyrene up to 9.2 ppm (UUSCO is 1 ppm); benzo(k)fluoranthene up to 3.9 ppm (PGSCO is 1.7 ppm); benzo(b)fluoranthene up to 11 ppm (UUSCO is 1 ppm); chrysene up to 10 ppm (PGSCO is 1 ppm) and indeno(1,2,3-c,d)pyrene up to 6.1 ppm (UUSCO is 0.5 ppm). Several metals were detected at concentrations that exceed their respective UUSCOs, including mercury up to 0.82 ppm (UUSCO is 0.18 ppm); nickel up to 33 ppm (UUSCO is (30 ppm) and lead up to 338 ppm (UUSCO is 63 ppm). Several pesticides were detected at concentrations that exceed their respective UUSCOs including dieldrin up to 0.00655 ppm (UUSCO is 0.005 ppm); 4 ,4'-DDD up to 0.0183 ppm (UUSCO is 0.0033 ppm) and 4 ,4'-DDT up to 0.0464 ppm (UUSCO is 0.0033 ppm). Perfluorooctanoic Acid (PFOA) was detected at a maximum concentration of 0.00344 ppm (UUSCO is 0.00088 ppm) and perfluorooctanesulfonic acid (PFOS) was detected at a maximum concentration of 0.000213 ppm (UUSCO is 0.00066 ppm).

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

Groundwater – Tetrachloroethene (PCE) was detected in on-site groundwater at concentrations of up to 22 parts per billion (ppb) which exceeds its respective Ambient Water Quality Standard (AWQS) of 5 ppb. Chloroform was detected up to 36 ppb (AWQS is 7 ppb). Several SVOCs were

also detected including benzo(a)anthracene up to 0.08 ppb (AWQS is 0.002 ppb); benzo(b)fluoranthene up to 0.09 ppb (AWQS is 0.002 ppb); benzo(k)fluoranthene up to 0.04 ppb (AWQS is 0.002 ppb); chrysene up to 0.06 ppb (AWQS is 0.002 ppb) and indeno (1,2,3-cd) pyrene up to 0.06 ppb (AWQS is 0.002 ppb).Perfluorooctanoic Acid (PFOA) was detected in groundwater samples at a maximum concentration of 137 parts per trillion, or ppt (maximum contaminant level (MCL) is 10 ppt) and perfluorooctanesulfonic acid (PFOS) was detected in groundwater samples at a maximum concentration of 32.4 ppt (MCL is 10 ppt).

Additionally, off-site groundwater sample was collected from an upgradient monitoring well located on the western side of the sidewalk adjoining the site. PCE was detected at concentration up to 11 ppb (AWQS is 5 ppb). Several SVOCs were also detected in off-site groundwater including benzo(a)anthracene up to 0.05 ppb (AWQS is 0.002 ppb); benzo(b)fluoranthene up to 0.09 ppb (AWQS is 0.002 ppb); benzo(k)fluoranthene up to 0.04 ppb (AWQS is 0.002 ppb); chrysene up to 0.35 ppb (AWQS is 0.002 ppb). PFOA was detected in off-site groundwater samples at a maximum concentration of 84 ppt (MCL is 10 ppt) and PFOS was detected in off-site groundwater samples at a maximum concentration of 14.6 ppt (MCL is 10 ppt).

Based on the on-site and off-site groundwater sampling results, data does not indicate any off-site impacts in groundwater related to the site.

Soil Vapor – PCE was detected in all soil vapor samples at concentrations ranging from 25.1 micrograms per cubic meter (µg/m3) to 209 µg/m3, and trichloroethene (TCE) was detected in all soil vapor samples ranging in concentration from 1.42 µg/m3 to 23.8 µg/m3. Chloroform was also detected in all soil vapor locations at a maximum concentration of 288 µg/m^3. Petroleum-related VOCs such as benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected in soil vapor ranging from 16.97 µg/m3 to 43.37 µg/m3.

Additionally, off-site soil vapor sample was collected from the western side of the sidewalk adjoining the site. PCE was detected at concentration up to 119 µg/m3 and TCE was detected up to 5.54 µg/m3. Chloroform was also detected up to 227 µg/m3. Petroleum-related VOCs such as benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected in soil vapor ranging up to 29.79 µg/m3.

Based on the on-site and off-site soil vapor sampling results, 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.*

The site is completely fenced which restricts public access. Persons who enter the site may come in contact with contaminants in soil by walking on, digging through, or otherwise disturbing the soil. People are not drinking contaminated groundwater because the area is served by a public water supply that is not affected by site contamination. Volatile organic compounds in the soil vapor (air spaces within the soil) can 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 and unoccupied, soil vapor intrusion is not a current concern. The potential exists for inhalation of site-related contaminants due to soil vapor intrusion for any future on-site redevelopment and building occupancy. Environmental sampling indicates that soil vapor intrusion from site contaminants is not a concern for off-site buildings.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

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

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

The selected remedy is referred to as the Soil Excavation, Backfill, In-situ Treatment using Activated Carbon and Soil Vapor Intrusion Evaluation remedy.

The elements of the selected remedy, as shown in Figure 2 and Figure 3, 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 all on-site soils which exceed unrestricted use SCOs, as defined by 6 NYCRR Part 375-6.8. If a Track 1 cleanup is achieved, a Cover System will not be a required element of the remedy.

Approximately 9,000 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 complete the backfilling of the excavation and establish the designed grades at the site.

4. 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.

5. In- Situ Treatment using Activated Carbon

Activated carbon will be added to the subsurface to capture and prevent the migration of chlorinated volatile organic compounds (CVOCs) in groundwater. In the area of the captured contamination, conditions will be maintained that will allow anaerobic degradation of CVOCs to occur. Activated carbon will be added to the subsurface via 18 injection points. Approximately 9,200 pounds of a mixture of liquid activated carbon and 21,000 gallons of water will be injected to form an in-situ upgradient barrier. The upgradient barrier will be 106 feet long with a targeted injection interval of 25 to 45 feet bgs. Injection points will be spaced 6 feet apart. After the injections, monitoring will be required within, and downgradient of, the treatment zone. Monitoring will be conducted for the detected contaminants and their degradation by-products to ensure the remedy is effective.

6. Local Institutional Controls

If an Environmental Easement and Site Management Plan is not required 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 NYCDOH code which prohibits potable use of groundwater without prior approval.

Conditional Track 1

The intent of the remedy is to achieve a Track 1 unrestricted use; therefore, no environmental easement or site management plan 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, including the treatment of groundwater contamination entering the site from an upgradient source and achievement of soil vapor remedial

objectives, the following contingent remedial elements will be required, and the remedy will achieve a Track 2 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 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.

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:

    - Institution Control: The Environmental Easement discussed in section 7 above.

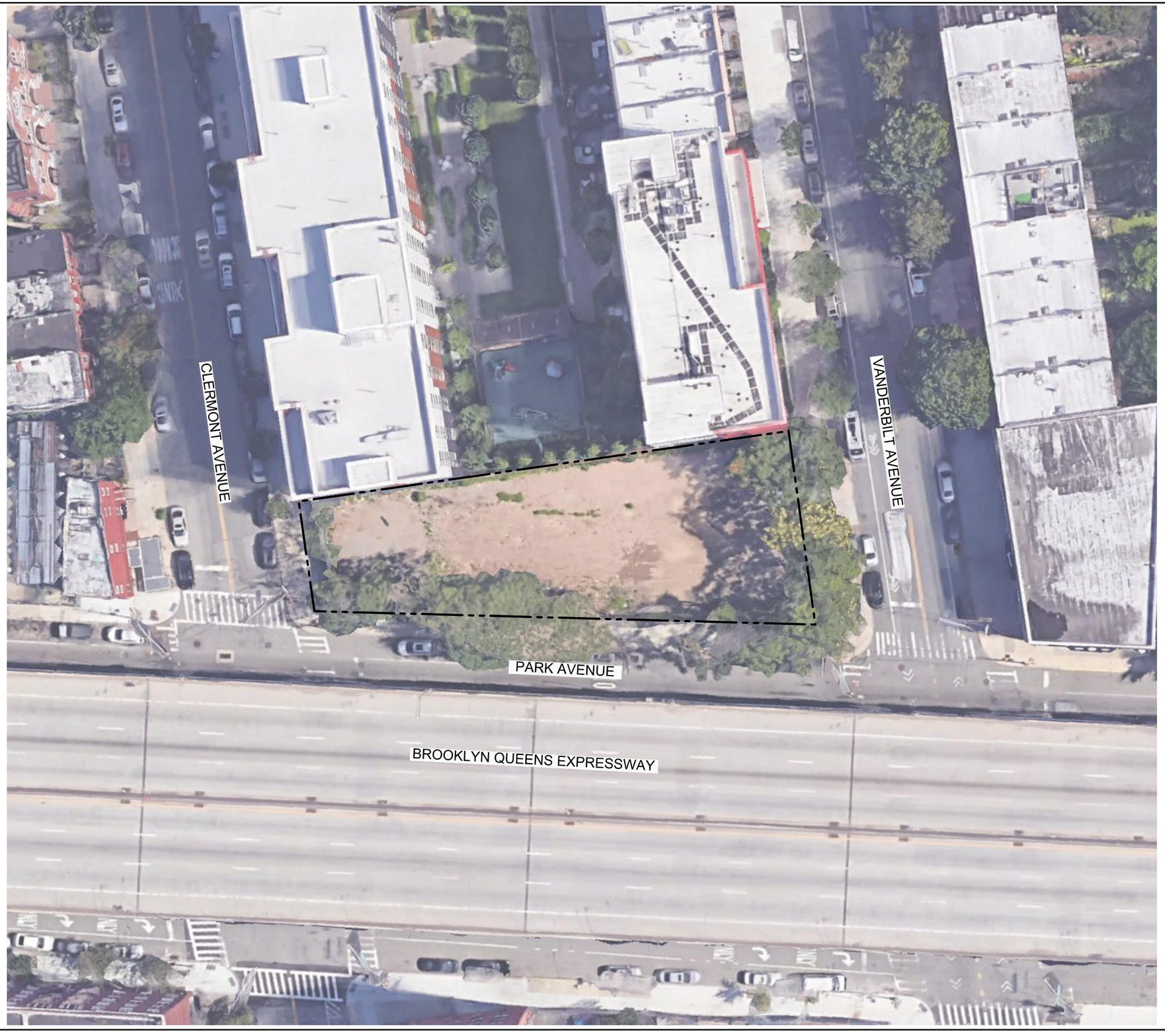
This plan includes, but may not be limited to:

- 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;
- 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 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 groundwater and 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.



LEGEND:

SITE BOUNDARY

NOTES:

1. BASE MAP DEVELOPED FROM 2019 GOOGLE EARTH PROFESSIONAL WITH AN IMAGERY DATE OF 6/15/2018.

N

W E

S

0 20' 40' 80'

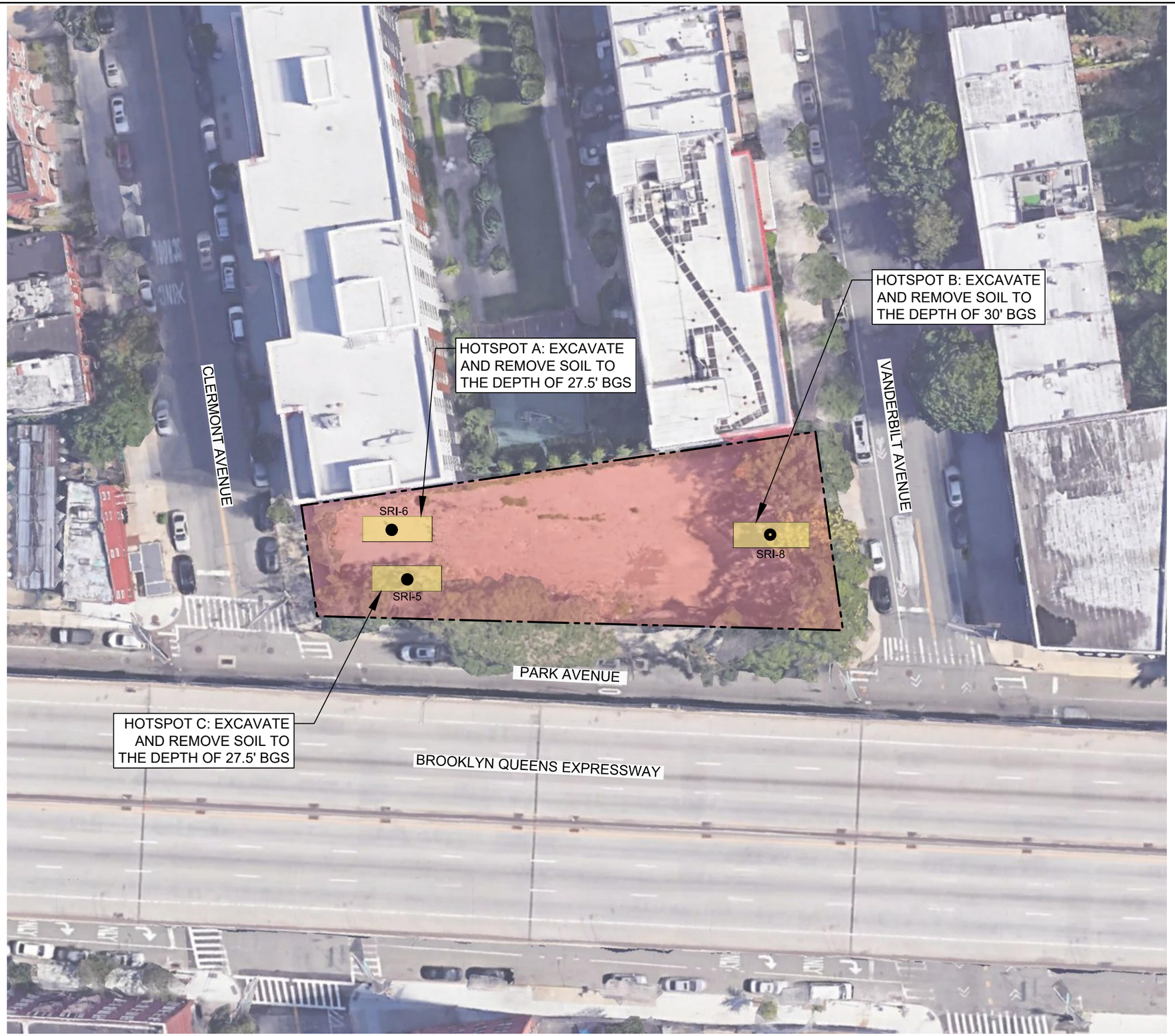
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

205 PARK AVENUE
BROOKLYN, NEW YORK

SITE PLAN

PREPARED BY: GZA GeoEnvironmental of NY Engineers and Scientists www.gza.com		PREPARED FOR: 462 LEXINGTON, LLC.	
PROJ MGR: ZS	REVIEWED BY: ZS	CHECKED BY: DW	FIGURE 1
DESIGNED BY: ZS	DRAWN BY: PB/MT	SCALE: 1" = 40'	
DATE: JANUARY 2020	PROJECT NO. 12.0076834.10	REVISION NO.	SHEET NO.



LEGEND:

- SITE BOUNDARY
- HOTSPOT EXCAVATION AREA
- SOIL BORING
- TO BE EXCAVATED TO 16 TO 18 FEET BELOW GROUND SURFACE

NOTES:

1. BASE MAP DEVELOPED FROM 2019 GOOGLE EARTH PROFESSIONAL WITH AN IMAGERY DATE OF 6/15/2018.

N
W E
S

0 20' 40' 80'

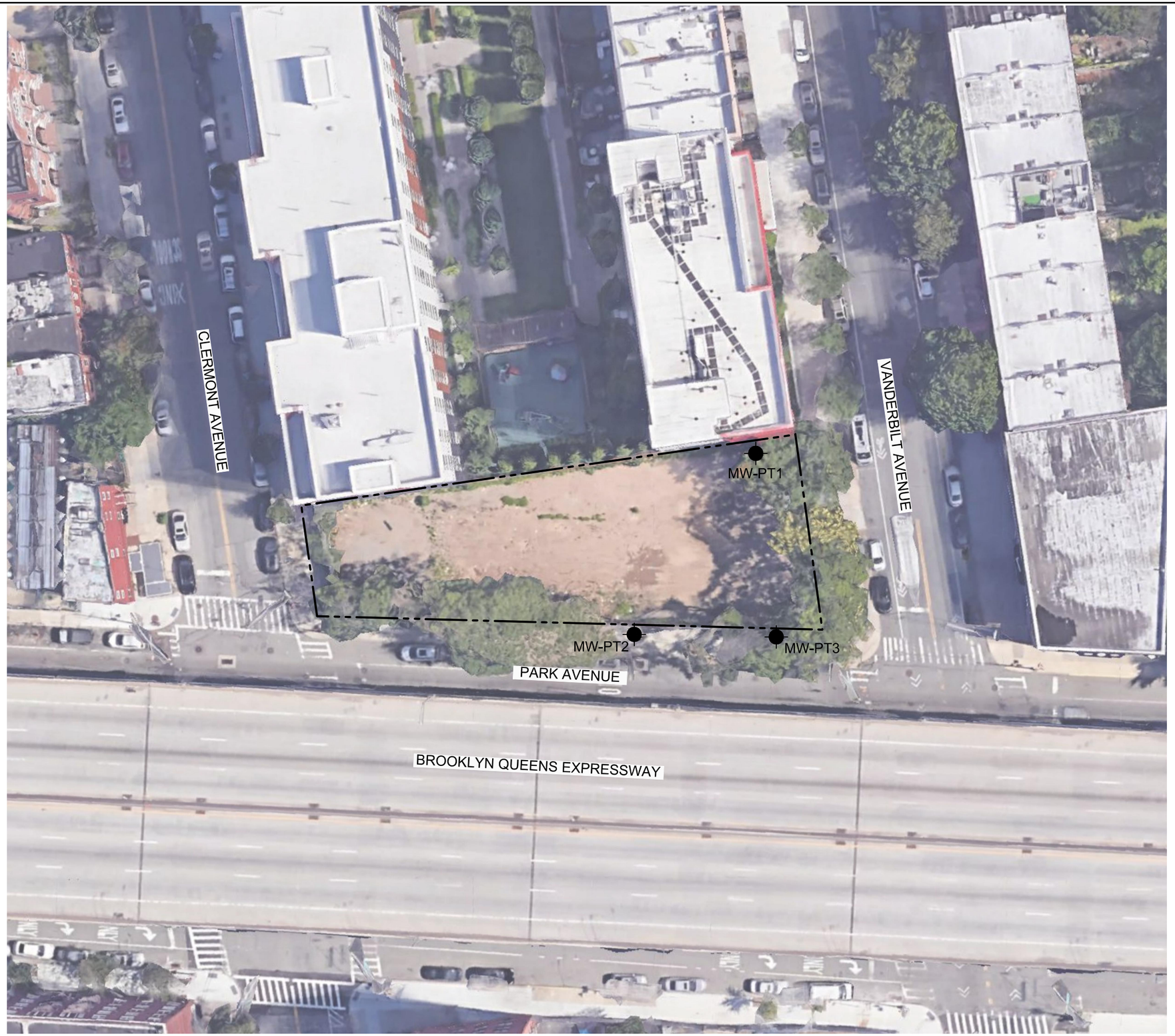
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

205 PARK AVENUE
BROOKLYN, NEW YORK

REMEDIATION PLAN - CONDITIONAL
TRACK 1 SOIL CLEAN UP PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: 462 LEXINGTON, LLC.	
PROJ MGR: ZS	REVIEWED BY: ZS	CHECKED BY: DW	FIGURE 2
DESIGNED BY: ZS	DRAWN BY: MT/CJB	SCALE: 1" = 40'	
DATE: DECEMBER 2021	PROJECT NO. 12.0076834.10	REVISION NO.	SHEET NO.



LEGEND:

SITE BOUNDARY

PROPOSED MONITORING WELL LOCATION

NOTES:

1. BASE MAP DEVELOPED FROM 2019 GOOGLE EARTH PROFESSIONAL WITH AN IMAGERY DATE OF 6/15/2018.

N

W E

S

0 20' 40' 80'

SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

205 PARK AVENUE
BROOKLYN, NEW YORK

POST TREATMENT GROUNDWATER SAMPLING LOCATIONS

PREPARED BY:		PREPARED FOR:	
GZA GeoEnvironmental of NY Engineers and Scientists www.gza.com		462 LEXINGTON, LLC.	
PROJ MGR: ZS	REVIEWED BY: ZS	CHECKED BY: DW	FIGURE 3
DESIGNED BY: ZS	DRAWN BY: MT	SCALE: 1" = 40'	
DATE: DECEMBER 2021	PROJECT NO. 12.0076834.10	REVISION NO.	SHEET NO.