DECISION DOCUMENT

280 West 155th Street Development
Brownfield Cleanup Program
New York, New York County
Site No. C231138
October 2021

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

DECLARATION STATEMENT - DECISION DOCUMENT

280 West 155th Street Development
Brownfield Cleanup Program
New York, New York County
Site No. C231138
October 2021

Statement of Purpose and Basis

This document presents the remedy for the 280 West 155th Street Development 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 280 West 155th Street Development 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:

- soil with visual waste material or non-aqueous phase liquid; and
- soils which exceed the protection of groundwater soil cleanup objections (PGWCSOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards.

Excavation and off-site disposal of on-site soils within the proposed building footprint up to 15 feet below grade which exceed commercial SCOs, as defined by 6 NYCRR Part 375-6.8. Excavation and off-site disposal of soils outside the proposed building footprint, which exceed commercial SCOs within the upper foot, as defined by 6 NYCRR Part 375-6.8. The extent of soil excavation is shown in Figure 2.

Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Approximately 10,000 cubic yards of contaminated soil will be removed from the site as part of the ongoing Interim Remedial Measure and the Remedial Action.

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. Cover System

A site cover will be required to allow for commercial use of the site in areas where the upper one foot 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 one foot 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. 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 commercial 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 County DOH NYCDOH; and
- require compliance with the Department approved Site Management Plan.

6. Site Management Plan

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

a. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

- Institutional Controls: The Environmental Easement discussed in Paragraph 5 above.
- Engineering Controls: The Cover System discussed in Paragraph 4 above

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and 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 any part of the cover system be removed/disturbed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper foot of exposed 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: groundwater and soil vapor to assess the performance and

effectiveness of the remedy:

- monitoring of groundwater 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.

October 27, 2021

Date

Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

280 West 155th Street Development
New York, New York County
Site No. C231138
October 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, 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=C231138

Washington Heights Library
1000 St. Nicholas Avenue
New York, NY 10032
Phone: (212) 923-6054

Manhattan Community Board 10
Attn: Cicely Harris
215 West 125th Street, 4th Floor
New York, NY 10027
Phone: (212) 749-3105

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 0.86-acre site is located at 280 West 155th Street, in the Harlem section of Manhattan, NY. The site occupies a portion of Block 2040, Lot 48. The site is bounded to the north by West 155th Street and the elevated 155th Street Viaduct associated with the Macombs Dam Bridge followed by Holcombe Rucker Park; to the east by an asphalt-paved parking lot; to the south by several mixed use and residential buildings; and to the west by Frederick Douglass Boulevard with a two-story mixed-use residential/commercial building across the street.

Site Features: The site is vacant.

Current Zoning and Land Use: The site is within a commercial zoning district (C8-3) and is currently designated for garage/gas station use G6. The site is currently under construction.

Past Use of the Site: The site is located within the historical extents of the Harlem River and consists of created land. By 1893, the site was improved with a one-story building of unspecified use. Since at least 1909, the site has been developed with commercial buildings and recreational areas. The buildings in the central and western portion of the site were demolished prior to 1979. The area was used for parking starting in 1996. The building in the eastern part of the site was demolished by 2001. Since demolition of the final building, the entire site has been used for parking.

Site Geology and Hydrogeology: The site consists of historic fill material extending to depths between 12 and 25 feet below ground surface (bgs). The fill material consists of fine to coarse sand with varying proportions of silt and gravel and miscellaneous debris, including brick, wood, asphalt, plastic, and metal. Fill material is underlain by very soft to soft upper clay, medium dense silty sand, medium stiff to stiff lower clay, dense to very dense sand and gravel, and weathered/ decomposed rock. Bedrock was observed approximately 33 to 105 feet bgs. Groundwater was

encountered between about 6 and 10 feet bgs. Inferred groundwater flow is to the southwest towards the Harlem River.

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 commercial use (which allows for industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant(s) under the Brownfield Cleanup Agreement is a/are Volunteer(s). The Applicant(s) does/do not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

lead
arsenic
tetrachloroethene (PCE)
barium
mercury
benzo(a)anthracene
benzo(a)pyrene
indeno(1,2,3-cd)pyrene
tert-butyl methyl ether (MTBE)
polycyclic aromatic hydrocarbons (PAHs), total
petroleum products

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

- groundwater
- soil

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

The following IRM is underway at this site based on conditions observed during the RI.

- Excavating contaminated historic fill to 11 feet below grade to accommodate installation of Support of Excavation (SOE) infrastructure for remediation; and
- Decommissioning monitoring wells.

Results of the IRM 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), pesticides and 1,4-dioxane. Soil vapor was analyzed for VOCs. Based upon investigations conducted to date, the primary contaminants of concern for the site include chlorinated VOCs (CVOCs), SVOCs, metals, and petroleum products.

Soil – Soil data were compared to Commercial Use Soil Cleanup Objectives (CUSCOs) and Protection of Groundwater Soil Cleanup Objectives (PGSCO). The contaminants of concern in soil are SVOCs, metals, and non-aqueous phase liquids (NAPL) found in soil to depths of up to 14 feet below ground surface. SVOCs were detected throughout the site including benzo(a)anthracene detected at a maximum concentration of 19 parts per million (ppm), exceeding the CUSCO of 5.6 ppm; benzo(a)pyrene at a maximum concentration of 21 ppm (CUSCO is 1 ppm); benzo(b)fluoranthene at a maximum concentration of 24 ppm (CUSCO is 56 ppm) and indeno(1,2,3-cd)pyrene at a maximum concentration of 12 ppm (CUSCO is 5.6 ppm). Lead was detected at 9,450 ppm (CUSCO is 1000 ppm); barium was detected at a maximum of 586 ppm (CUSCO of 400 ppm); arsenic was detected at a maximum of 51 ppm (CUSCO is 16 ppm); and mercury was detected at a maximum of 11.5 ppm (CUSCO of 2.8 ppm).

1,4-dioxane was not detected above the reporting limit. Perfluorooctanoic acid (PFOA) was detected at a maximum of 1.58 parts per billion (ppb); the guidance value for commercial use is 500 ppb and protection of groundwater is 1.1 ppb. Perfluorooctanesulfonic acid (PFOS) was detected on site at a maximum of 2.02 ppb; the guidance value for commercial use is 440 ppb and protection of groundwater is 3.7 ppb. All PFOA and PFOS detected above PGSCOs were in the top 15 feet of the Track 2 area and will be removed as part of the remedy. Data does not indicate any off-site impacts in soil related to this site.

Groundwater – Groundwater data was compared to NYSDEC TOGS Ambient Water Quality Standards (AWQSs). The VOCs tert-butyl methyl ether (MTBE) was detected at a maximum detection of 18 ppb; the AWQS is 10 ppb. SVOCs and metals were not detected above the AWQSs in filtered groundwater samples. No pesticides, herbicides, or polychlorinated biphenyl (PCBs) were detected above AWQSs in unfiltered groundwater samples.

1,4-dioxane was not detected above the reporting limit and is not considered a contaminant of concern. PFOA was detected at a maximum of 43.4 parts per trillion (ppt); the guidance value is 10 ppt. PFOS was detected at a maximum of 62.8 ppt; the guidance value is 10 ppt. PFOA and PFOS concentrations in the upgradient onsite wells indicate that PFOA and PFOS may be attributed to an upgradient source. Data indicates potential for off-site petroleum impacts to groundwater, including from MTBE and NAPL, related to this site which will be addressed through the Spills Program.

Soil Vapor – PCE was detected throughout the site ranging from 3.75 to 345 micrograms per cubic meter ($\mu g/m^3$). 1,1,1-Trichloroethane was detected at one soil vapor point at 2.22 $\mu g/m^3$. 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.*

Since the site is fenced and covered by asphalt or concrete, people will not come into contact with site-related soil and groundwater contamination unless they dig below the surface. 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. Environmental sampling indicates soil vapor intrusion is not a concern for off-site buildings.

6.5: Summary of the Remediation Objectives

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

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

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

RAOs for Environmental Protection

- 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 2 and Track 4: Restricted use with site-specific 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:

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:

- soil with visual waste material or non-aqueous phase liquid; and
- soils which exceed the protection of groundwater soil cleanup objections (PGWCSOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards.

Excavation and off-site disposal of on-site soils within the proposed building footprint up to 15 feet below grade which exceed commercial SCOs, as defined by 6 NYCRR Part 375-6.8. Excavation and off-site disposal of soils outside the proposed building footprint, which exceed commercial SCOs within the upper foot, as defined by 6 NYCRR Part 375-6.8. The extent of soil excavation is shown in Figure 2.

Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Approximately 10,000 cubic yards of contaminated soil will be removed from the site as part of the ongoing Interim Remedial Measure and the Remedial Action.

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. Cover System

A site cover will be required to allow for commercial use of the site in areas where the upper one foot 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 one foot 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. 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 commercial 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 County DOH NYCDOH; and
- require compliance with the Department approved Site Management Plan.

6. Site Management Plan

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

a. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

    - Institutional Controls: The Environmental Easement discussed in Paragraph 5 above.
    - Engineering Controls: The Cover System discussed in Paragraph 4 above

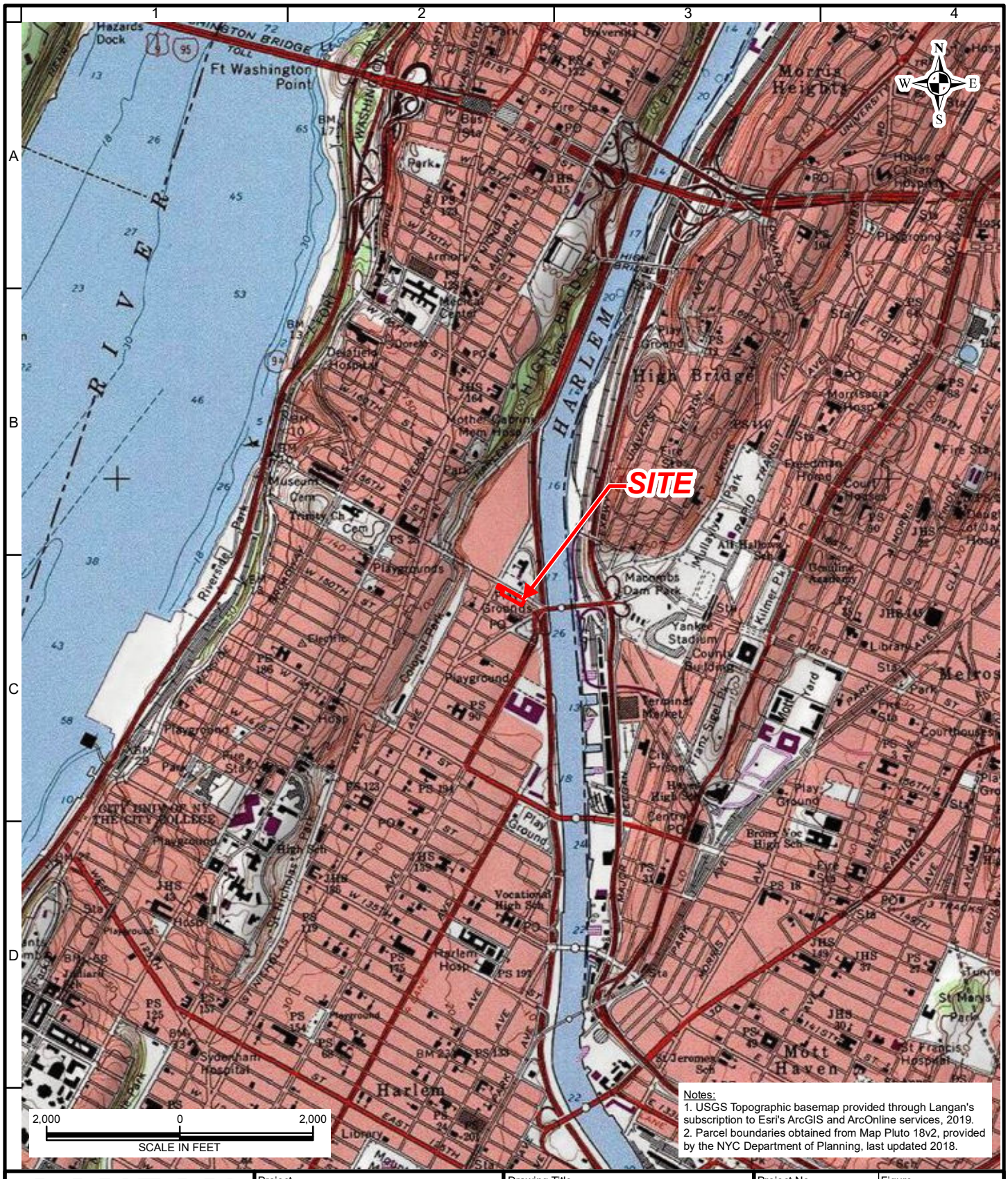
This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and 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 any part of the cover system be removed/disturbed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper foot of exposed 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: groundwater and soil vapor to assess the performance and effectiveness of the remedy:

- monitoring of groundwater 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.



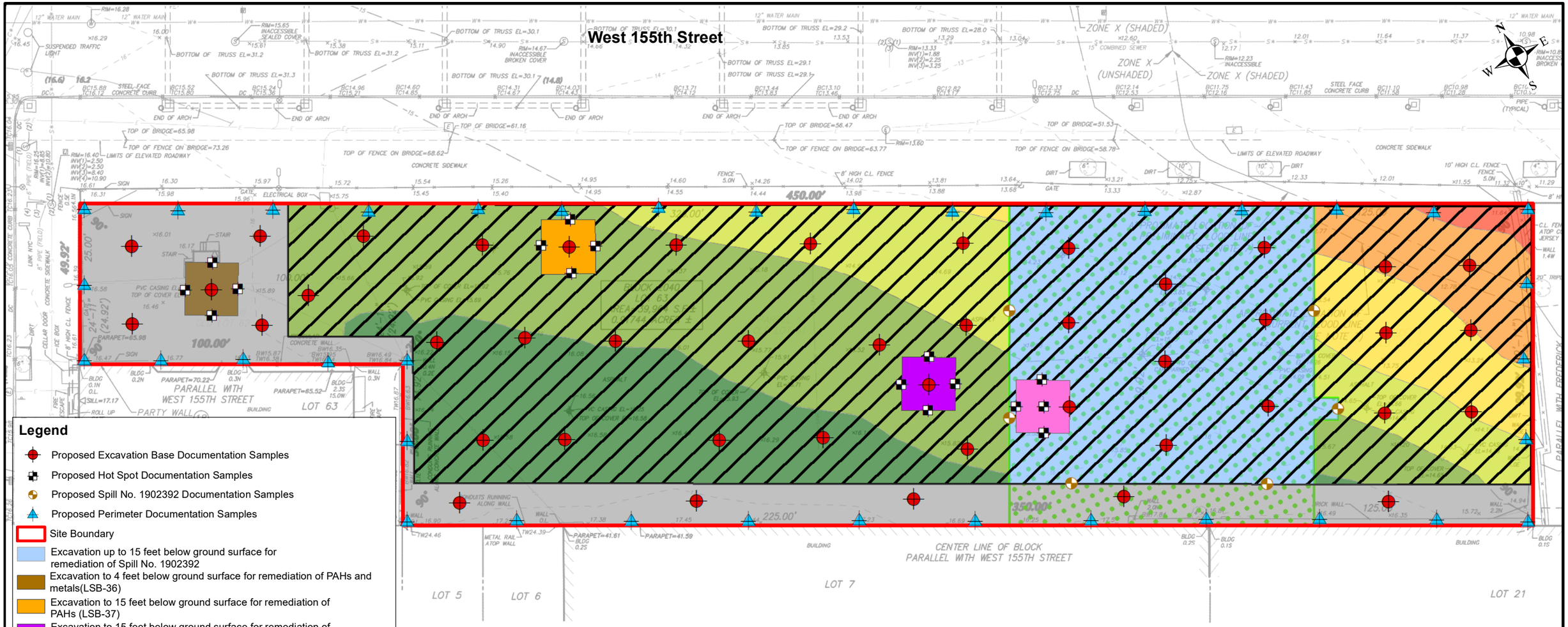
LANGAN
300 Kimball Drive
Parsippany, NJ 07054
T: 973.560.4900 F: 973.560.4901 www.langan.com
Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC
Collectively known as Langan
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project
280 WEST 155TH STREET DEVELOPMENT
NYSDEC BCP Site No.: C231138
BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)
MANHATTAN NEW YORK NEW YORK

Drawing Title
SITE LOCATION MAP

Project No. 100765102	Figure 1
Date 1/14/2021	
Scale 1 " = 2,000 '	
Drawn By IHB	

Path: \\Langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\MXD\Environmental_Figures\2021-01 - RAWP\Figure 1 - Site Location Map.mxd Date: 1/14/2021 User: jrosol Time: 9:45:12 AM



Legend

- Proposed Excavation Base Documentation Samples
- Proposed Hot Spot Documentation Samples
- Proposed Spill No. 1902392 Documentation Samples
- Proposed Perimeter Documentation Samples
- Site Boundary
- Excavation up to 15 feet below ground surface for remediation of Spill No. 1902392
- Excavation to 4 feet below ground surface for remediation of PAHs and metals(LSB-36)
- Excavation to 15 feet below ground surface for remediation of PAHs (LSB-37)
- Excavation to 15 feet below ground surface for remediation of metals (LSB-39)
- Excavation to 4 feet bgs for remediation of metals (LSB-40)
- AOC-1 (Petroleum Impacts from Historical Site Operations)
- Track 4 Remediation Area - Construction of composite cover consisting of concrete and/or asphalt pavement at street level
- Track 2 Remediation Area

Depth of Track 2 Excavation

- 5 feet bgs
- 6 feet bgs
- 7 feet bgs
- 8 feet bgs
- 9 feet bgs
- 10 feet bgs

Notes:
1. Current site elevations for determination of cut area and site boundary obtained from Topographic, Boundary, and Utility Survey prepared by Langan dated 19 August 2020.
2. Proposed cellar excavation extents shown according to Partial Cellar Floor Plans A-101 and A-102 prepared by SGW Architects, P.C. dated 18 December 2020.

30 0 30
SCALE IN FEET

LANGAN
300 Kimball Drive
Parsippany, NJ 07054
T: 973.560.4900 F: 973.560.4901 www.langan.com
Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC
Collectively known as Langan
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project
280 WEST 155TH STREET DEVELOPMENT
NYSDEC BCP Site No.: C231138
BLOCK No. 2040, LOT No. 48
(Former Lots 48, 61 and 62)
NEW YORK
MANHATTAN NEW YORK

Drawing Title
PROPOSED REMEDIAL EXCAVATION AND END POINT SAMPLING PLAN

Project No.	100765102
Date	9/9/2021
Scale	1 " = 30 '
Drawn By	ATR
Figure	2

Path: \\langan.com\data\PAR\data1\100765102\Project Data\ArcGIS\MXD\Environmental_Figures\2021-08 - Decision Document\Figure 2 - Proposed Remedial Excavation and Endpoint Sampling Plan_Track2.mxd Date: 9/9/2021 User: jrosol Time: 1:07:32 PM