DECISION DOCUMENT

550 Tenth Avenue Filling Station Site
Brownfield Cleanup Program
Manhattan, New York County
Site No. C231148
June 2022

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

DECLARATION STATEMENT - DECISION DOCUMENT

550 Tenth Avenue Filling Station Site
Brownfield Cleanup Program
Manhattan, New York County
Site No. C231148
June 2022

Statement of Purpose and Basis

This document presents the remedy for the 550 Tenth Avenue Filling Station 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 550 Tenth Avenue Filling Station Site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

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

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

2. Excavation

The existing on-site building(s) will be demolished and materials which can't be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy.

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

- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;

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

Approximately 1,975 cubic yards of 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 and establish the designed grades at the site.

4. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOH; and
- require compliance with the Department approved Site Management Plan.

5. Site Management Plan

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

a. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
   - Institutional Controls: An Environmental Easement discussed in paragraph 4.

   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;
- maintaining site access controls and Department notification; and
- a schedule of monitoring and frequency of submittals to the Department; and
- 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.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
   - monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above; and
   - a schedule of monitoring and frequency of submittals to the Department.

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.

June 10, 2022

Date

Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

550 Tenth Avenue Filling Station Site
Manhattan, New York County
Site No. C231148
June 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 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=C231148

Manhattan Community Board No. 4
330 West 42nd Street, 26th Floor
New York, NY 10036
Phone: (212) 736-4536

New York Public Library - Columbus Branch
742 10th Avenue
New York, NY 10019
Phone: (212) 586-5098

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

Site Location:
The site is located in the Clinton neighborhood of Manhattan, NY and is identified as Block 1050, Lot 61. The site is an approximately 15,939-square foot or 0.365-acre parcel bordered by 10th Avenue to the west, West 41st Street to the north, West 40th Street to the south, and the active redevelopment of former Covenant House New York Wings B and C to the east. New York City Transit (NYCT) tunnels are located to the north of the site, below West 41st Street. Lincoln Tunnel entrance roads and access ramps for the nearby Port Authority Bus Terminal are located to the south of the site, beyond West 40th Street. The site is currently occupied by Wing A of the former Covenant House New York shelter for homeless youth and a parking lot; the building is currently vacant.

Site Features:
The site is currently improved with an 8-story building with a cellar. The cellar extends to approximately 10.5 to 15 feet below sidewalk grade (ft-bsg). An asphalt parking lot is located within the northern portion of the property along West 41st Street. Construction field offices associated with the redevelopment of the adjacent site to the east are also currently present on the site. The Hudson River is located approximately 0.402 miles from the site. The site is not located in a mapped flood zone.

Current Zoning and Land Use:
The site is currently located in the C2-8 (commercial) and HY (Hudson Yards) mixed-use Zoning Districts. C2-8 districts are commercial districts that are predominantly residential in character. The site is currently improved with a vacant 8-story building and an adjacent parking lot. Previous occupants of the building include Covenant House New York medical offices. The surrounding property uses include restaurants, hotels, apartment buildings, churches, and parking lots. The closest residential area is located across 10th Avenue. New York City Transit No. 7 Line subway tunnels are located north of the site below West 41st Street.

Past Use of the Site:
The BCP site was historically a portion of former Lot 1 and former Lot 61. Between 1890 and 1911, Lot 1 was developed with multiple buildings, including a piano factory on the southern portion of the site. A filling station was in the southern portion of the lot from 1950 until about 1968. At that time, the former piano factory was used as an auto repair shop and for vehicle storage. In 1961 the site was used as a hotel with an attached garage. The current on-site structure was constructed in 1985. The site has been in its current configuration since approximately 1990. In 2003, an auto repair facility occupied a portion of Lot 1.

Between 1890 and 1911, the Lot 61 was developed with multiple buildings. Between 1930 and 1950, two of the buildings along the corner of 10th Avenue and 41st Street were demolished and replaced with a triangular-shaped retail building. A filling station was present on Lot 61 from approximately 1950 to 1987. Multiple changes in ownership occurred between 1984 and 1986. The filling station appears to have been replaced by a parking lot in maps from 1988.

In May 2018, a portion of Lot 1 was reapportioned to be included in Lot 61. The reapportioned Lot 61 makes up the 0.365-acre site.

Site Geology and Hydrogeology:
According to the United States Geological Survey topographic map, Central Park, New York quadrangle dated 1995, the site elevation is approximately 26 feet above mean sea level. The site topography is generally flat with a slight slope to the west. The stratigraphy below the asphalt parking lot on the northwestern portion of the site consists of an approximately 9.5- to 20-foot-thick layer of historic fill underlain by a native silty sand unit. Weathered mica schist bedrock rock is present below the sand unit. During investigatory activities, a clayey silt unit was encountered from approximately 21 ft-bsg to the depth of drilling refusal at approximately 25 ft-bsg in the parking lot area.

The stratigraphy below the existing basement slab consists of a 0- to 13-foot-thick layer of historic fill. The fill material in the eastern portion of the building footprint was observed to be underlain with native silty sand to the depth of drilling refusal, which varied between 5 and 10.5 feet below the basement floor slab. Drilling refusal is presumed to be due to bedrock. In several borings within the building footprint, native material was observed directly beneath the basement slab. At these locations, drilling refusal on bedrock was encounter between 5 and 6 feet below the basement slab. Clay was also encountered in the northeastern portion of the building from 9 to 10.5 feet below the basement slab.

During on-site investigations, groundwater was encountered between 12.5 and 12.7 ft-bsg and the measured flow direction is northwest.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site,

alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

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

SECTION 5: ENFORCEMENT STATUS

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

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

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

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

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

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor
- indoor air
- sub-slab vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

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

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

6.1.2: RI Results

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

benzo(a)anthracene	trichloroethene (TCE)
chrysene	lead
tetrachloroethene (PCE)	1,2,3-trichloropropane

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.

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.

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), per- and polyfluoroalkyl substances (PFAS), and pesticides. Soil vapor samples were analyzed for VOCs. Based on the

investigations done to date, the primary contaminants of concern for the site include SVOCs and metals in soil, including hazardous lead levels in soil, SVOCs and metals in groundwater, and VOCs in soil vapor.

Soil - Several SVOCs were detected above the applicable NYSDEC restricted residential soil cleanup objectives (RRSCOs) in the northwestern corner of the site at 10 - 12 feet below grade. Benzo(a)anthracene was detected at 10.8 parts per million (ppm) which exceeds the RRSCO of 1 ppm. Chrysene was detected at 9.67 ppm which exceeds RRSCO of 3.9 ppm. Lead was detected at a maximum concentration of 8,010 ppm (RRSCO is 400 ppm) and was also detected via TCLP at a maximum concentration of 20.8 milligrams per liter (mg/l) which exceeds the hazardous waste characteristic criteria of 5 mg/l.

The PFAS compound perfluorooctanesulfonic acid (PFOS) was detected at a maximum concentration of 0.928 parts per billion (ppb) which is below the restricted residential guidance value of 8.8 ppb. No PFAS compounds were detected above restricted residential or protection of groundwater guidance values in soil.

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

Groundwater - Several SVOCs were detected above the applicable ambient water quality standards (AWQS), including benzo(a)anthracene at a maximum concentration of 0.115 ppb which exceeds the AWQS of 0.002 ppb, and chrysene at a maximum concentration of 0.108 ppb which exceeds AWQS of 0.002 ppb. The VOC 1,2,3-trichloropropane was detected at a maximum concentration of 3.47 ppb which exceeds the AWQS of 0.04 ppb. PFOS was detected at a maximum concentration of 189 parts per trillion (ppt) which exceeds the maximum contaminant level (drinking water standard) of 10 ppt. This highest concentration of PFOS was detected in the upgradient portion of the site.

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

Soil Vapor, Sub-Slab Soil Vapor and Indoor Air - The maximum concentration of tetrachloroethene (PCE) detected in soil vapor was 6.1 micrograms per cubic meter (ug/m3), in sub-slab soil vapor was 4.14 ug/m3, and at 3.37 ug/m2 in indoor air. The maximum concentration of trichloroethene (TCE) in soil vapor was 2 ug/m3, in sub-slab soil vapor was 0.431 ug/m3, and 0.177 ug/m3 in indoor air.

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

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

The site is covered by a vacant building and pavement so people are not expected to come in contact with site contaminants in soil. However, persons who enter the site could contact

contaminants in the soil by digging or otherwise disturbing the soil. Contaminated groundwater is not used for drinking and the site and surrounding areas are 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 the site is vacant, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a concern for the site in its current condition, however the potential exists for indoor air impacts in future buildings on-site. Environmental sampling indicates soil vapor intrusion from site contamination is not a concern for off-site buildings.

6.5: Summary of the Remediation Objectives

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

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

RAOs for Environmental Protection

- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

Soil Vapor

RAOs for Public Health Protection

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

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

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

The selected remedy is a Track 2: Restricted use with generic soil cleanup objectives remedy.

The selected remedy is referred to as the Excavation remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. Remedial Design

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

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
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- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
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- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

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The existing on-site building(s) will be demolished and materials which can't be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy.

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

- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;

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

Approximately 1,975 cubic yards of 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 and establish the designed grades at the site.

4. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOH; and
- require compliance with the Department approved Site Management Plan.

5. Site Management Plan

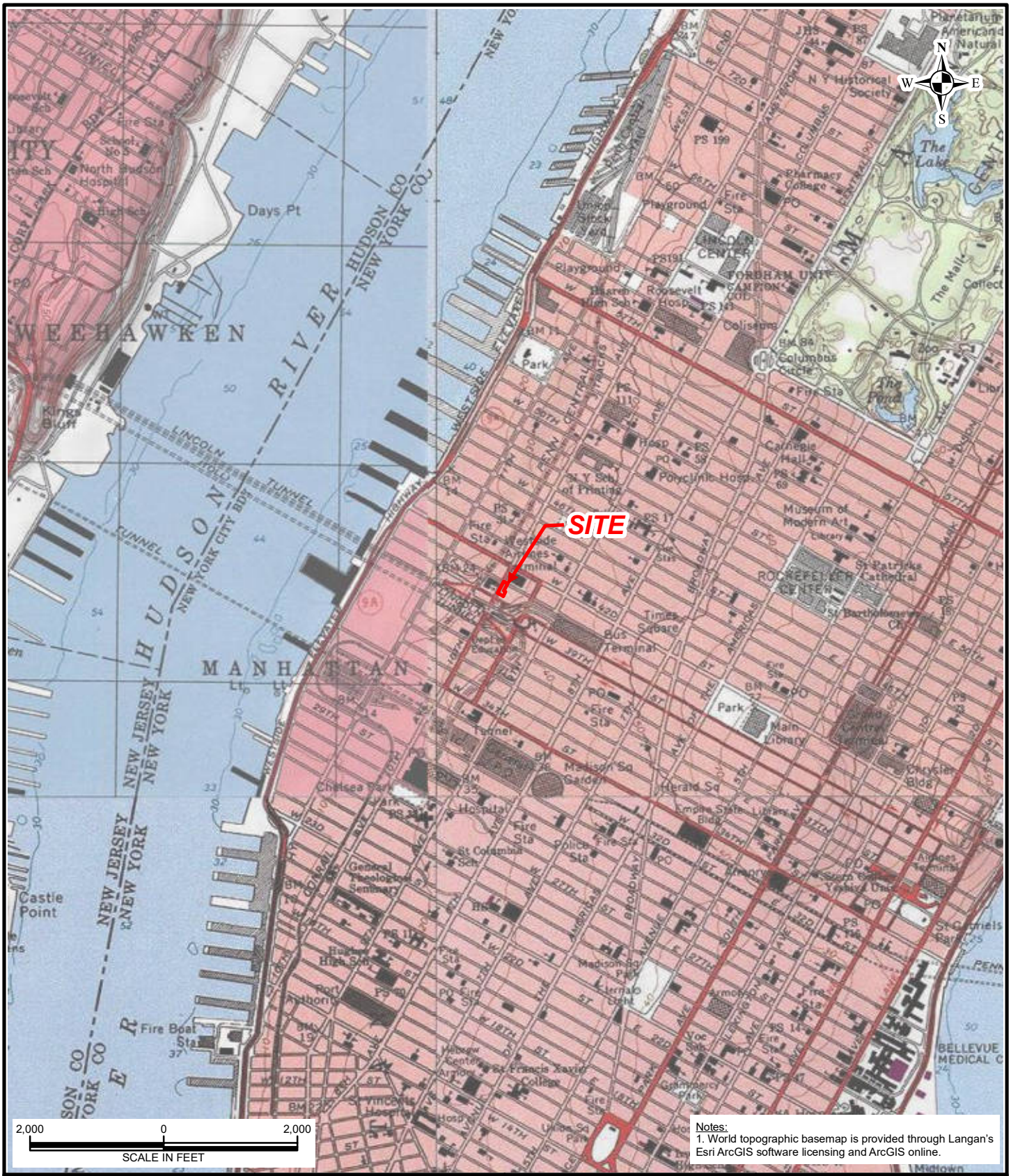
A Site Management Plan is required, which includes the following:

a. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
   - Institutional Controls: An Environmental Easement discussed in paragraph 4.

   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;
   - maintaining site access controls and Department notification; and
   - a schedule of monitoring and frequency of submittals to the Department; and
   - 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.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
   - monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above; and
   - a schedule of monitoring and frequency of submittals to the Department.



Notes:
1. World topographic basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online.

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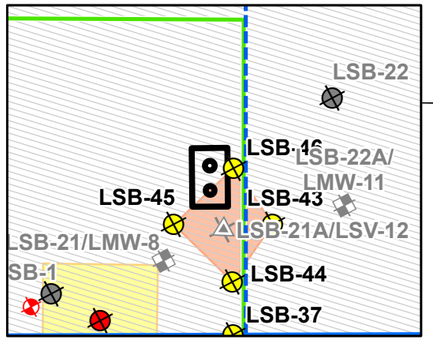
Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan International LLC
Collectively known as Langan

NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project
550 TENTH AVENUE
FILLING STATION SITE
BCP Site No. C231148
BLOCK No. 1050
LOT No. 61
MANHATTAN
NEW YORK COUNTY NEW YORK

Drawing Title
SITE LOCATION MAP

Project No.	100674402
Date	12/20/2021
Scale	1"=2,000'
Drawn By	IHB
Submission Date	1/7/2022
Figure	1



Inset A

Location	LSB-21A	LSB-21A	LSB-21	LSB-21A
Sample Name	LSB-21A_0-2_20210211	007_LSB-21A_8-9_20211014	LSB-21	008_LSB-21A_18-19_20211014
Sample Date	02/11/2021	10/14/2021	12/05/2018	10/14/2021
Sample Depth (feet bgs)	0-2	8-9	13-15	18-19
Sample Depth (feet bsl)	0-2	8-9	13-15	18-19
SVOCs (mg/kg)				
Benzo(a)anthracene	**1.37 D**	NA	<0.0436 U	NA
Benzo(a)pyrene	**1.61 D**	NA	<0.0436 U	NA
Benzo(b)fluoranthene	**1.41 D**	NA	<0.0436 U	NA
Benzo(k)fluoranthene	**1.22 D**	NA	<0.0436 U	NA
Chrysene	**1.27 D**	NA	<0.0436 U	NA
Dibenz(a,h)anthracene	**0.341 D**	NA	<0.0436 U	NA
Indeno(1,2,3-cd)pyrene	**0.909 D**	NA	<0.0436 U	NA
Pesticides (mg/kg)				
4,4'-DDT	**0.0187 D**	NA	<0.00172 U	NA
Metals - Total (mg/kg)				
Barium	**562**	NA	107	NA
Cadmium	**3.93**	NA	<0.313 U	NA
Copper	49.1	NA	34.7	NA
Lead	**3,050**	**8,010**	5.19 J	47
Manganese	310	NA	142	NA
Mercury	**0.533 J**	NA	<0.0313 U	NA
Nickel	29.3	NA	**31.4**	NA
Selenium	<2.87 U	NA	<2.61 U	NA
Zinc	**463 B**	NA	31.8	NA
Metals - TCLP (mg/l)				
Lead	NA	4.79	NA	0.143

Location	LSB-44	LSB-44
Sample Name	009_LSB-44_0-2_20211014	012_LSB-44_9-18_20211014
Sample Date	10/14/2021	10/14/2021
Sample Depth	0-2	9-18
Metals - Total (mg/kg)		
Lead	5.87	**745**
Metals - TCLP (mg/l)		
Lead	<0.125 U	<0.125 U

Location	LSB-46
Sample Name	004_LSB-46_9-18_20211014
Sample Date	10/14/2021
Sample Depth (feet bsl)	9-18
Metals - Total (mg/kg)	
Lead	**1,000**
Metals - TCLP (mg/l)	
Lead	2.04

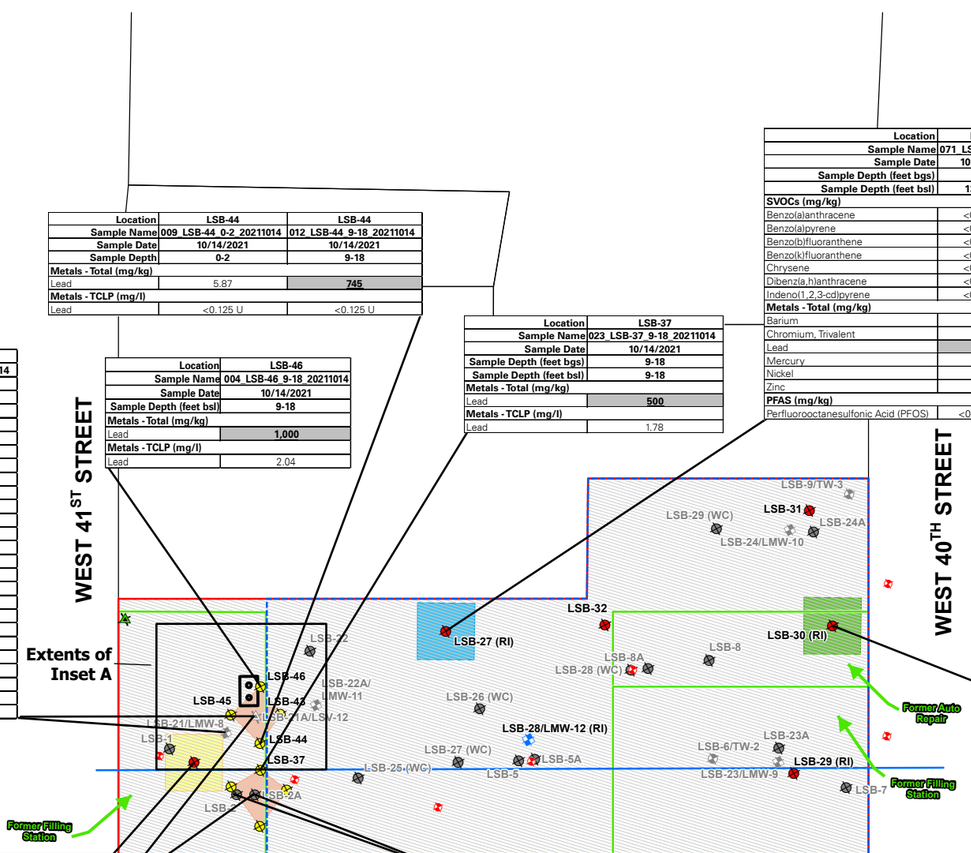
Location	LSB-37
Sample Name	023_LSB-37_9-18_20211014
Sample Date	10/14/2021
Sample Depth (feet bgs)	9-18
Sample Depth (feet bsl)	9-18
Metals - Total (mg/kg)	
Lead	**500**
Metals - TCLP (mg/l)	
Lead	1.78

Location	LSB-27
Sample Name	071_LSB-27_0.0-2.0
Sample Date	10/26/2021
Sample Depth (feet bgs)	2-4
Sample Depth (feet bsl)	13.5-15.5
SVOCs (mg/kg)	
Benzo(a)anthracene	<0.0487 U
Benzo(a)pyrene	<0.0487 U
Benzo(b)fluoranthene	<0.0487 U
Benzo(k)fluoranthene	<0.0487 U
Chrysene	<0.0487 U
Dibenz(a,h)anthracene	<0.0487 U
Indeno(1,2,3-cd)pyrene	<0.0487 U
Metals - Total (mg/kg)	
Barium	91.2
Chromium, Trivalent	21
Lead	**558**
Mercury	0.0741
Nickel	22.1
Zinc	49.1
PFAS (mg/kg)	
Perfluorooctanesulfonic Acid (PFOS)	<0.000271 U

Analyte	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Protection of Groundwater SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs	RCRA Characteristics of Hazardous Waste
SVOCs (mg/kg) (mg/kg)				
Benzo(a)anthracene	1	1	1	NS
Benzo(a)pyrene	1	22	1	NS
Benzo(b)fluoranthene	1	1.7	1	NS
Benzo(k)fluoranthene	0.8	1.7	3.9	NS
Chrysene	1	1	3.9	NS
Dibenz(a,h)anthracene	0.33	1000	0.33	NS
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	NS
Pesticides (mg/kg)				
4,4'-DDT	0.0033	136	7.9	NS
Metals - Total (mg/kg)				
Barium	350	820	400	NS
Cadmium	2.5	7.5	4.3	NS
Chromium, Trivalent	30	NS	180	NS
Copper	50	1720	270	NS
Lead	63	450	400	NS
Manganese	1600	2000	2000	NS
Mercury	0.18	0.73	0.81	NS
Nickel	30	130	310	NS
Selenium	3.9	4	180	NS
Zinc	109	2480	10000	NS
PFAS (mg/kg)				
Perfluorooctanesulfonic Acid (PFOS)	0.00088	0.0037	0.044	NS
Metals -TCLP (mg/l)				
Lead	NS	NS	NS	5

Exceedance Summary

10 - Result exceeds Unrestricted Use SCOs
10 - Result exceeds Protection of Groundwater SCOs
10 - Result exceeds Restricted Use Restricted-Residential SCOs
10 - Result exceeds RCRA Characteristics of Hazardous Waste



TENTH AVENUE

Location	WC-1B	WC-1B
Sample Name	WC-1B_021121	DUP01_20210211
Sample Date	2/11/2021	2/11/2021
Sample Depth	9-18	9-18
VOCs		
Acetone	0.016 J	0.035
SVOCs		
3 & 4 Methylphenol (m&p Cresol)	**0.396 J**	0.175 J
Benzo(a)anthracene	**25.9 J**	**10.8 J**
Benzo(a)pyrene	**22.5 J**	**9.45 J**
Benzo(b)fluoranthene	**21.4 J**	**8.95 J**
Benzo(k)fluoranthene	**16.9 J**	**7.34 J**
Chrysene	**23.6 J**	**10.3 J**
Dibenz(a,h)anthracene	**5.54 J**	**2.35 J**
Dibenzofuran	**7.97 J**	2.62 J
Indeno(1,2,3-cd)pyrene	**12.6 J**	**5.48 J**
Naphthalene	**16.9 J**	7.43 J
Metals		
Cadmium	<0.357 UJ	**20.9 J**
Lead	**9,340 J**	**488 J**
Mercury	**0.251 J**	**0.505 J**
Zinc	44.4 J	**9,690 J**

Location	LSB-26	LSB-26	LSB-26
Sample Name	072_LSB-26_0.0-2.0	073_LSB-26_10.0-12.0	074_LSB-26_13.0-15.0
Sample Date	10/26/2021	10/26/2021	10/26/2021
Sample Depth (feet bgs)	0-2	10-12	13-15
Sample Depth (feet bsl)	0-2	10-12	13-15
SVOCs (mg/kg)			
Benzo(a)anthracene	**1.12 D**	**2.55 D**	NA
Benzo(a)pyrene	**1.2 D**	**2.49 D**	NA
Benzo(b)fluoranthene	1 D	**2.18 D**	NA
Benzo(k)fluoranthene	**1.04 D**	**2.13 D**	NA
Chrysene	**1.19 D**	**2.68 D**	NA
Dibenz(a,h)anthracene	0.136 D	**0.414 D**	NA
Indeno(1,2,3-cd)pyrene	**0.851 D**	**1.62 D**	NA
Metals - Total (mg/kg)			
Barium	**2830**	**1010**	NA
Chromium, Trivalent	26.8	18.4	NA
Lead	**5970**	**2300**	NA
Mercury	**1.11**	**1.15 J**	NA
Nickel	29.4	15.1	NA
Zinc	**994**	**440**	NA
PFAS (mg/kg)			
Perfluorooctanesulfonic Acid (PFOS)	<0.000283 U	<0.000269 U	**0.000928**

Location	LSB-2A	LSB-2A	LSB-2A	LSB-2A	LSB-2	LSB-2A
Sample Name	LSB-2A_0-2_20210211	043_LSB-2A_8-9_20211015	LSB-2A_11-13_20210211	DUP01_20210211	LSB-2 (15-17)	044_LSB-2A_18-19_20211015
Sample Date	02/11/2021	10/15/2021	02/11/2021	02/11/2021	11/20/2017	10/15/2021
Sample Depth (feet bgs)	0-2	8-9	11-13	11-13	15-17	18-19
Sample Depth (feet bsl)	0-2	8-9	11-13	11-13	15-17	18-19
SVOCs (mg/kg)						
Benzo(a)anthracene	**10.8 D**	NA	NA	NA	<0.05 U	NA
Benzo(a)pyrene	**9 D**	NA	NA	NA	<0.05 U	NA
Benzo(b)fluoranthene	**8.44 D**	NA	NA	NA	<0.05 U	NA
Benzo(k)fluoranthene	**7.34 D**	NA	NA	NA	<0.05 U	NA
Chrysene	**9.67 D**	NA	NA	NA	<0.05 U	NA
Dibenz(a,h)anthracene	**2.49 D**	NA	NA	NA	<0.05 U	NA
Indeno(1,2,3-cd)pyrene	**5.46 D**	NA	NA	NA	<0.05 U	NA
Pesticides (mg/kg)						
4,4'-DDT	<0.00195 U	NA	<0.00201 U	<0.00202 U	NA	NA
Metals - Total (mg/kg)						
Barium	93.9	NA	NA	NA	71.6	NA
Cadmium	0.955	NA	NA	NA	<0.36 U	NA
Copper	17.3	NA	NA	NA	15.8 J	NA
Lead	**105**	**1,580**	NA	NA	**119 B**	59.2
Manganese	209	NA	NA	NA	**1,660**	NA
Mercury	<0.0395 U	NA	NA	NA	0.0816	NA
Nickel	17.9	NA	NA	NA	<0.6 UJ	NA
Selenium	<2.99 U	NA	NA	NA	**19.3 B**	NA
Zinc	**350 B**	NA	NA	NA	29.7	NA
PFAS (mg/kg)						
Perfluorooctanesulfonic Acid (PFOS)	**0.0107**	NA	NA	NA	NA	NA
Metals -TCLP (mg/l)						
Lead	<0.125 U	2.21	NA	NA	NA	0.572

Location	LSB-30	LSB-30
Sample Name	067_LSB-30_1.0-3.0	068_LSB-30_3.0-5.0
Sample Date	10/26/2021	10/26/2021
Sample Depth (feet bgs)	1-3	3-5
Sample Depth (feet bsl)	12.5-14.5	14.5-16.5
SVOCs (mg/kg)		
Benzo(a)anthracene	<0.0488 U	<0.0485 U
Benzo(a)pyrene	<0.0488 U	<0.0485 U
Benzo(b)fluoranthene	<0.0488 U	<0.0485 U
Benzo(k)fluoranthene	<0.0488 U	<0.0485 U
Chrysene	<0.0488 U	<0.0485 U
Dibenz(a,h)anthracene	<0.0488 U	<0.0485 U
Indeno(1,2,3-cd)pyrene	<0.0488 U	<0.0485 U
Metals - Total (mg/kg)		
Barium	112	64.2
Chromium, Trivalent	**198**	11.4
Lead	58.9	32.8
Mercury	0.157	0.103
Nickel	**47.4**	15.6
Zinc	97	31.4
PFAS (mg/kg)		
Perfluorooctanesulfonic Acid (PFOS)	<0.000293 U	<0.000255 U

Legend

- Additional excavation to el 7.5 NAVD88 (corresponding to approximately 17 feet bsl) for the removal of PAHs and metals above the Restricted Residential RUSCOs
- Additional excavation to el 8 NAVD88 (corresponding to approximately 16.5 feet bsl) for the removal of metals above the Restricted Residential RUSCOs
- Excavation to el 9 NAVD88 (corresponding to approximately 15.5 feet bsl) for removal of metals above the Restricted Residential RUSCOs
- Excavation to el 5.5 NAVD88 (corresponding to approximately 19 feet bsl) for removal of hazardous lead and elevated lead above the Restricted Residential RUSCOs
- General Excavation to el 13 NAVD88 (corresponding to approximately 11.5 feet bsl) and removal of contaminated fill and PAHs and metals above the Restricted Residential RUSCOs
- Building Outline
- Early foundation element location
- RI Soil Boring Location
- RI Soil Boring/Permanent Monitoring Well Location
- RI Soil Boring/Exterior Soil Vapor Point Location
- Hazardous Lead Delineation Soil Boring Location
- Geotech Phase 2 Boring Location (2019)
- Historical Soil Boring Location
- Historical Soil Boring/ Permanent Monitoring Well Location
- Historical Soil Boring/ Soil Vapor Location
- Historical Soil Boring/ Temporary Monitoring Well Location
- Cross Section A-A'
- Site Boundary
- AOC-2 – Historical Uses of Concern

Notes:
1. Property boundary digitized from basemap and measurements provided on the New York City Digital Tax Map maintained online by the Department of Finance.
2. Soil boring, temporary monitoring well, and soil vapor sampling locations based on field measurements. Permanent monitoring well locations based on survey data.
3. Historical filling station and automobile repair locations obtained from Sanborn Fire Insurance Maps provided in the Phase I Environmental Site Assessment prepared by TRC Engineers, Inc., dated September 2015.
4. AOC-1 consists of historic fill, which is present throughout the site.
5. Site footprint will be covered and demarcated by the redevelopment extents if a Track 4 remedy is achieved.

40 0 40
SCALE IN FEET

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Langan International LLC
Collectively known as Langan
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project
550 TENTH AVENUE FILLING STATION SITE
BCP Site No. C231148
BLOCK No. 1050,
LOT No. 61
MANHATTAN
NEW YORK COUNTY NEW YORK

Drawing Title
ALTERNATIVE II TRACK 2 CLEANUP PLAN VIEW

Project No. 100674402
Date 1/4/2021
Scale 1"=40'
Drawn By IHB
Last Revised 5/4/2022
Figure 2

Path: \\langan.com\data\PAR\data4\100674401\Project Data\ArcGIS\APRX\11A\Figure 1A.aprx