

DECISION DOCUMENT

550 West 20th Street
Brownfield Cleanup Program
New York, New York County
Site No. C231132
May 2026



**Department of
Environmental
Conservation**

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

DECLARATION STATEMENT - DECISION DOCUMENT

550 West 20th Street
Brownfield Cleanup Program
New York, New York County
Site No. C231132
May 2026

Statement of Purpose and Basis

This document presents the remedy for the 550 West 20th Street 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 (NYSDEC) for the 550 West 20th Street site and the public's input to the proposed remedy presented by NYSDEC.

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, any future on-site buildings which are part of the remedy should be constructed, to the extent feasible, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) in order to improve energy efficiency.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise™ (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

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

- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375 6.8 for those contaminants found in site groundwater above standards; and
- soil with visual waste material or non-aqueous phase liquid;

Approximately 225 cubic yards of soil will be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depths will be used to verify that SCOs for the site have been achieved. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify NYSDEC, submit the sample results and, in consultation with NYSDEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

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

Backfill meeting the requirements of 6 NYCRR Parth 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

3. Cover System

A site cover currently exists in areas not occupied by buildings and will be maintained to allow for restricted residential use of the site. Any site redevelopment will maintain the existing site cover. The site cover may include paved surface parking areas, sidewalks, or soil where the upper two feet of exposed surface soil meets the applicable soil cleanup objectives for restricted residential use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) will be implemented to treat contaminants in groundwater. A chemical oxidant will be injected into the subsurface to destroy the contaminants in an approximately 1,200 square foot area located in the western portion of the site, an approximately 1,400 square foot area located in the central portion of the site, and an approximately 1,800 square foot area located in the eastern portion of the site where gasoline-related compounds were elevated in the groundwater via injection wells screened from 6 to 11 feet. The method and depth of injection will be determined during the remedial design.

Prior to the full implementation of this technology, laboratory and on-site pilot scale studies will be conducted to more clearly define design parameters. Between the pilot and the full-scale implementations, it is estimated that 9 shallow injection points will be installed. It is estimated that the chemical oxidant will be injected during approximately 2 separate events over several months.

Monitoring will be required up-gradient, down-gradient, and within the treatment zone. Monitoring, at a minimum, will be conducted for contaminants of concern, pH, conductivity, and oxidation/reduction potential.

Engineering and Institutional Controls

Imposition of an institutional control in the form of an Environmental Easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 4 restricted residential cleanup at a minimum and will include the imposition of a site cover.

5. 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 NYSDEC 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 NYCDOHMH; and
- require compliance with the NYSDEC 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 Remedy Element 5 above.

Engineering Controls: The cover system discussed in Remedy Element 3 above and the monitoring wells associated with In-Situ Chemical Oxidation discussed in Remedy Element 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 a building foundation or building slab be removed in the future, a cover system consistent with that described in Remedy Element 2 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs)
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and NYSDEC notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

- b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
- monitoring of groundwater to assess the performance and effectiveness of the remedy;
 - a schedule of monitoring and frequency of submittals to the NYSDEC; and
 - 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.

May 5, 2026

Date



Scott Deyette, Director
Remedial Bureau B

DECISION DOCUMENT

550 West 20th Street
New York, New York County
Site No. C231132
May 2026

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (NYSDEC), 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.

NYSDEC 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

NYSDEC 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 NYSDEC 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=C231132>

Jefferson Market Library
425 Avenue of the Americas
New York, NY 10011
Phone: (212) 243-4334

Manhattan Community Board 4
424 West 33rd Street, #580
New York, NY 10001
Phone: (212) 736-4536

Receive Site Citizen Participation Information By Email

Please note that NYSDEC's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:

The site is located at 550 West 20th Street in the Chelsea neighborhood of Manhattan, NY, and consists of a single tax parcel (Block 691, Lot 1). The site is bounded by West 20th Street to the north, mixed-use commercial and residential buildings to the east and south, and Eleventh Avenue to the west. Adjoining and surrounding properties include multi-family residential, commercial, light industrial, and transportation buildings.

Site Features:

The site is approximately 0.363-acres (15,812 square feet) in area. The site is currently improved with an eight-to-nine story building with a cellar level on the eastern portion of the site. The site is currently vacant. The proposed redevelopment will be residential and used for affordable housing.

Current Zoning and Land Use:

The site is located in a C6-2 and C6-3 zoning district. A C6 district is characterized by commercial and high-rise mixed-use buildings. The site is also located within the West Chelsea Special District, which permits special uses related to reuse of the High Line, including high-rise residential buildings.

Past Use of the Site:

A review of historical data revealed that the site was undeveloped prior to the 1860s. From 1866 to 1909, the site contained a 250,000-cubic foot gas holder and a portion of a coal yard as part of the former West 18th Street Manufactured Gas Plant (MGP). By 1921, a house wrecker's yard, the American Red Cross, and a restaurant occupied the site. The current site building was

developed in 1931 and was occupied by Seaman's House for the Y.M.C.A.. By 1968, the site was occupied by the Narcotic Addiction Control Commission residential treatment center. By 1975, the site was occupied by the State of New York Bayview Correctional Facility until its closure in 2012. The site has remained vacant since 2012.

Site Geology and Hydrogeology:

The site elevation ranges from 8.01 feet to 7.36 feet (NAVD 88, an approximation of mean sea level). The site and surrounding area slope gently towards the southeast.

Site soils consist of urban fill in the top 25 feet, underlain by grey coarse sand and black to olive clay with varying amounts of gravel and shell fragments. Bedrock is present at depths ranging from 80-88 feet below ground surface (ft bgs), sloping towards the east.

Groundwater is present beneath the site at depths of 5.81 and 8.74 ft bgs. Groundwater beneath the site was determined to flow west towards the Hudson River, which is located approximately 440 feet west of the site.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

NYSDEC 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, an alternative that restricts 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) 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, NYSDEC 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
- 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. NYSDEC has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

6.1.2: RI Results

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

benzene
benzo(a)anthracene
benzo(a)pyrene
benzo(b)fluoranthene
benzo(k)fluoranthene

chrysene
indeno(1,2,3-cd)pyrene
mercury
lead

The contaminants 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.

Nature and Extent of Contamination

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), per- and polyfluoroalkyl substances (PFAS) and pesticides. Sub-slab soil vapor and indoor air samples were analyzed for VOCs. Based upon investigations conducted to date, the primary contaminants of concern are benzene, SVOCs, lead, and mercury in soil and groundwater.

Soil - Sample results were compared against the restricted residential soil cleanup objectives (RRSCOs) and the protection of groundwater soil cleanup objectives (PGWSCOs) for those contaminants found in groundwater above applicable standards. One VOC, benzene, was detected at a maximum concentration of 4 parts per million (ppm) compared to the PGWSCO of 0.06 ppm. SVOCs were detected including maximum concentrations of benzo(a)anthracene at 38 ppm (PGWSCO of 1.0 ppm), benzo(a)pyrene at 30 ppm (RRSCO of 1.0 ppm), benzo(b)fluoranthene at 39 ppm (RRSCO of 1.0 ppm), benzo(k)fluoranthene at 13 ppm (PGWSCO of 1.7 ppm), chrysene at 40 ppm (PGWSCO of 1.0 ppm), dibenz[a,h]anthracene at 4.7 ppm (RRSCO of 0.33 ppm), and indeno(1,2,3-cd)pyrene at 18 ppm (RRSCO of 0.5 ppm). Metals were detected including maximum concentrations of mercury at 1.9 ppm (RRSCO of 0.3 ppm) and lead at 1,170 ppm (RRSCO of 400 ppm). No PCBs, PFAS, or pesticides were detected above RRSCOs. Data does not indicate any off-site impacts in soil related to this site.

Groundwater - Groundwater sample results were compared to the NYS Ambient Water Quality Standards and Guidance Values (AWQSGVs). VOCs were found in groundwater across the site exceeding the AWQSGVs, including maximum concentrations of benzene at 25 parts per billion (ppb) (AWQSGV is 1 ppb). SVOCs were found in groundwater across the site exceeding AWQSGVs including maximum concentrations of benzo(a)anthracene at 0.38 ppb (AWQSGV is 0.002 ppb), benzo(a)pyrene at 0.4 ppb (AWQSGV is 0 ppb), benzo(b)fluoranthene at 0.51 ppb (AWQSGV is 0.002 ppb), benzo(k)fluoranthene at 0.18 ppb (AWQSGV is 0.002 ppb), chrysene at 0.31 ppb (AWQSGV is 0.002 ppb), and indeno(1,2,3-cd)pyrene at 0.29 ppb (AWQSGV is 0.002 ppb). Metals were found in groundwater across the site including maximum concentrations of total mercury at 3.25 ppb (AWQSGV is 0.7 ppb) and total lead at 4445 ppb (AWQSGV is 25 ppb). Dissolved mercury and dissolved lead were not detected at concentrations exceeding AWQSGVs in filtered samples collected from the site. No PCBs, PFAS, or pesticides were detected above AWQSGVs. Data does not indicate any off-site impacts in groundwater related to this site.

Sub-Slab Soil Vapor and Indoor Air - VOCs were found in sub-slab soil vapor across the site, including maximum concentrations of benzene at 3.8 micrograms per cubic meter (ug/m³). Benzene was also detected in indoor air samples at a maximum concentration of 1.9 ug/m³. 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*.

Direct contact with contaminants in the soil is unlikely because the majority of the site is covered with buildings and pavement. 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. The site is currently vacant; however, the potential exists for people to inhale site contaminants in indoor air due to soil vapor intrusion in any future on-site building development and occupancy. In addition, 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

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

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

The selected remedy is a Track 4: Restricted residential use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Track 4: Hotspot Excavation, Groundwater Treatment and Cover System remedy.

The elements of the selected remedy, as shown in Figures 2 and 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, any future on-site buildings which are part of the remedy should be constructed, to the extent feasible, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) in order to improve energy efficiency.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise™ (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

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

- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375 6.8 for those contaminants found in site groundwater above standards; and
- soil with visual waste material or non-aqueous phase liquid;

Approximately 225 cubic yards of soil will be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depths will be used to verify that SCOs for the site have been achieved. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify NYSDEC, submit the sample results and, in consultation with NYSDEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

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

Backfill meeting the requirements of 6 NYCRR Parth 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

3. Cover System

A site cover currently exists in areas not occupied by buildings and will be maintained to allow for restricted residential use of the site. Any site redevelopment will maintain the existing site cover. The site cover may include paved surface parking areas, sidewalks, or soil where the upper two feet of exposed surface soil meets the applicable soil cleanup objectives for restricted residential use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) will be implemented to treat contaminants in groundwater. A chemical oxidant will be injected into the subsurface to destroy the contaminants in an approximately 1,200 square foot area located in the western portion of the site, an approximately 1,400 square foot area located in the central portion of the site, and an approximately 1,800 square foot area located in the eastern portion of the site where gasoline-related compounds were elevated in the groundwater via injection wells screened from 6 to 11 feet. The method and depth of injection will be determined during the remedial design.

Prior to the full implementation of this technology, laboratory and on-site pilot scale studies will be conducted to more clearly define design parameters. Between the pilot and the full-scale implementations, it is estimated that 9 shallow injection points will be installed. It is estimated that the chemical oxidant will be injected during approximately 2 separate events over several months.

Monitoring will be required up-gradient, down-gradient, and within the treatment zone. Monitoring, at a minimum, will be conducted for contaminants of concern, pH, conductivity, and oxidation/reduction potential.

Engineering and Institutional Controls

Imposition of an institutional control in the form of an Environmental Easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 4 restricted residential cleanup at a minimum and will include the imposition of a site cover.

5. 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 NYSDEC 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 NYCDOHMH; and
- require compliance with the NYSDEC 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 Remedy Element 5 above.

Engineering Controls: The cover system discussed in Remedy Element 3 above and the monitoring wells associated with In-Situ Chemical Oxidation discussed in Remedy Element 4, above.

This plan includes, but may not be limited to:

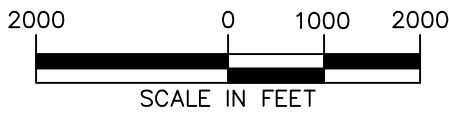
- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
 - descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
 - a provision for evaluation of the potential for soil 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 a building foundation or building slab be removed in the future, a cover system consistent with that described in Remedy Element 2 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs)
 - provisions for the management and inspection of the identified engineering controls;
 - maintaining site access controls and NYSDEC notification; and
 - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.
- b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
- monitoring of groundwater to assess the performance and effectiveness of the remedy;
 - a schedule of monitoring and frequency of submittals to the NYSDEC; and
 - monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.



SITE

LEGEND:

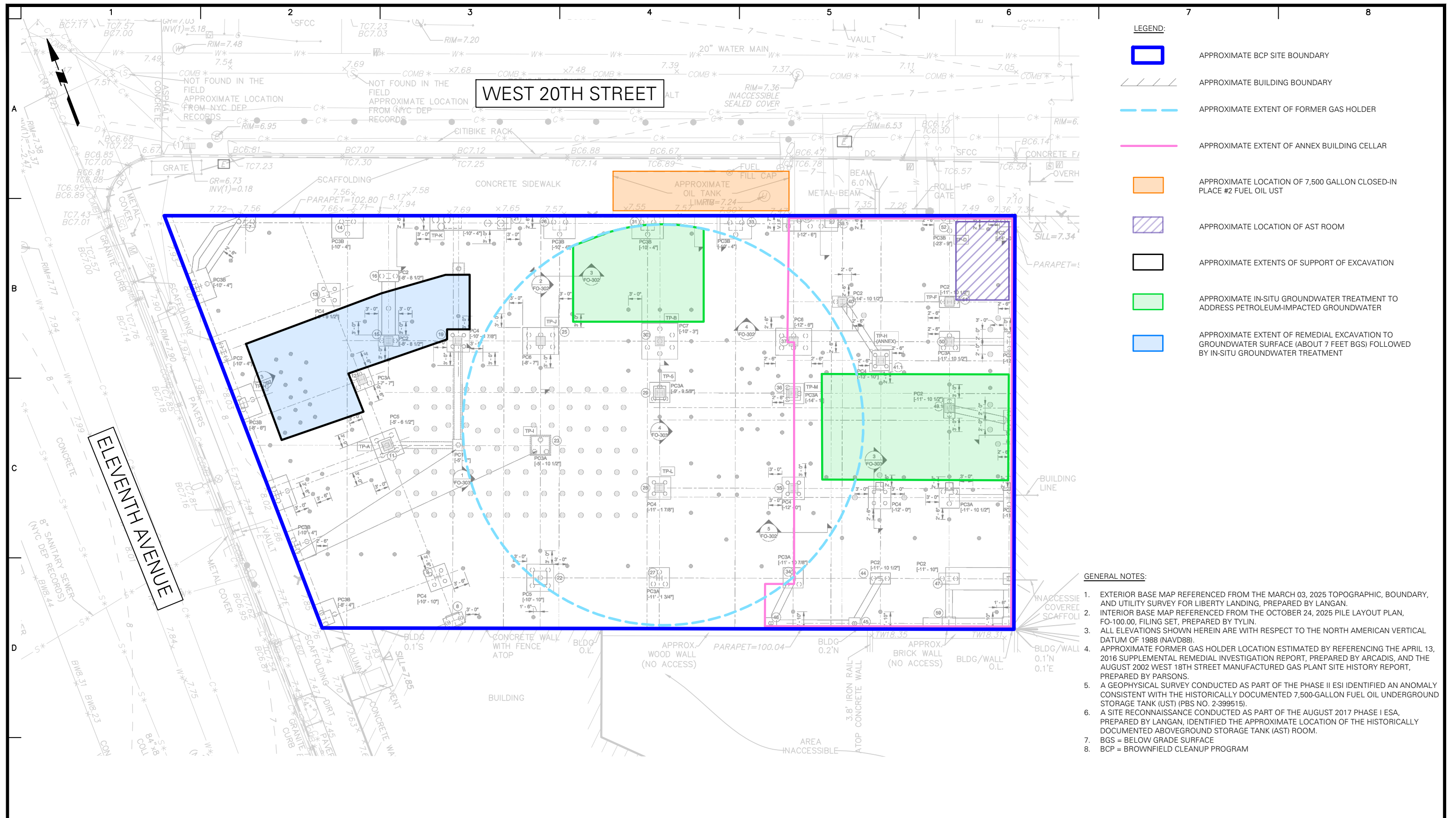
APPROXIMATE BCP SITE BOUNDARY



GENERAL NOTE:

1. BASE MAP TAKEN FROM THE 2016 UNITED STATES GEOLOGICAL SURVEY (USGS) 7.5-MINUTE TOPOGRAPHICAL QUADRANGLE MAP FOR JERSEY CITY, NJ-NY.
2. BCP = BROWNFIELD CLEANUP PROGRAM

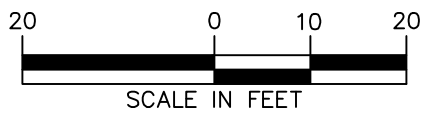
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| <p>LANGAN 368 Ninth Avenue, 8th Floor New York, NY 10001 T: 212.479.5400 F: 212.479.5444 www.langan.com</p> <p>Langan Engineering, Environmental, Surveying Landscape Architecture and Geology, D.P.C. S.A. Langan Engineering, Environmental, Surveying Landscape Architecture and Geology, D.P.C. Langan Engineering and Environmental Services, Inc. Langan CT, Inc. Langan International LLC Collectively known as Langan</p> | <p>Project</p> <p>550 WEST 20TH STREET</p> <p>BLOCK NO. 691, LOT NO. 1 MANHATTAN</p> <p>NEW YORK NEW YORK</p> | <p>Figure Title</p> <p>SITE LOCATION MAP</p> | <p>Project No. 170864001</p> <p>Date 02/18/2025</p> <p>Scale 1" = 2000'</p> <p>Drawn By CN</p> <p>Checked By ERA</p> <p>Submission Date</p> | |
| | | | 1 | <p>Figure No.</p> <p>Sheet 1 of 13</p> |
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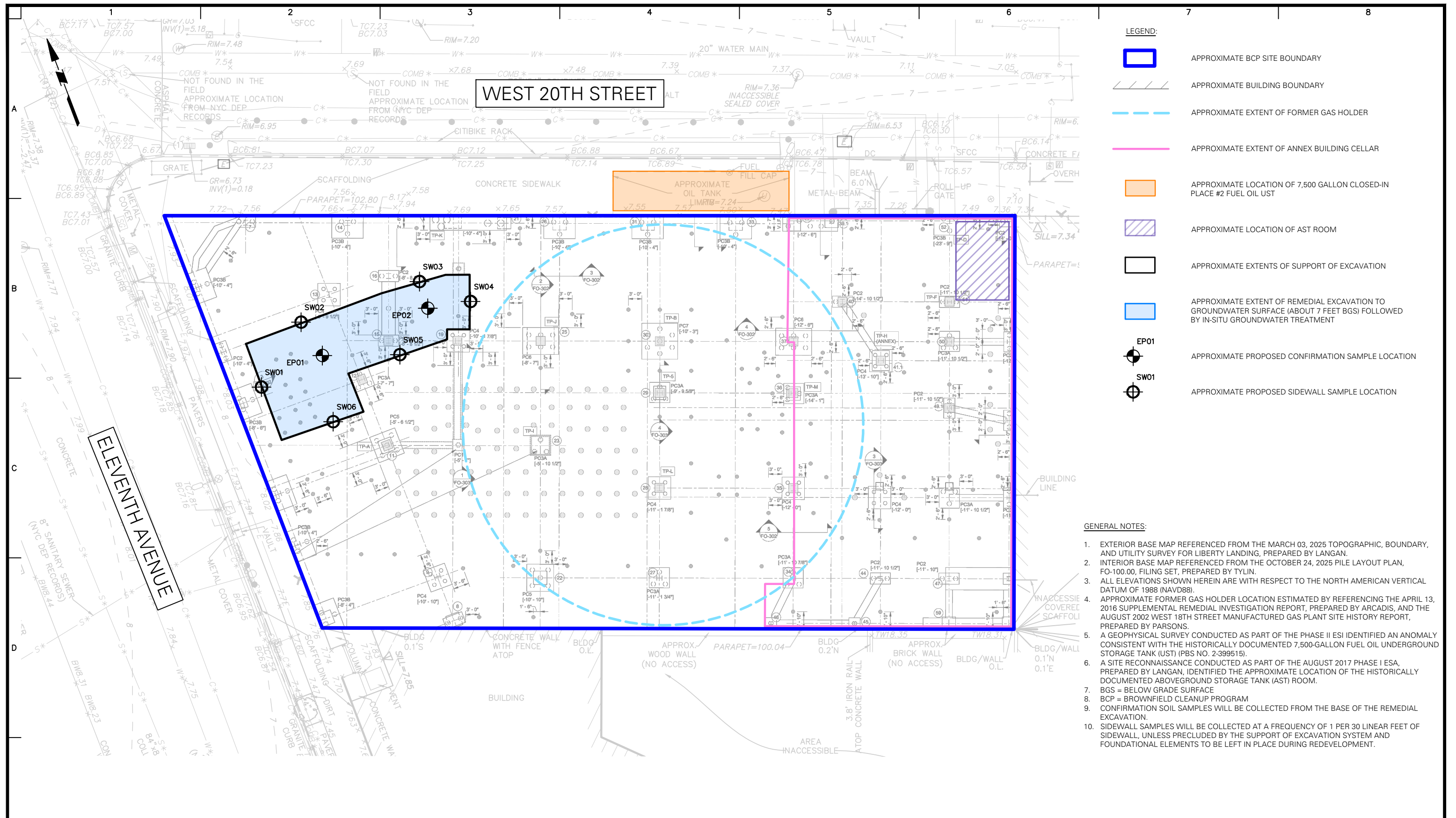
- LEGEND:**
- APPROXIMATE BCP SITE BOUNDARY
 - APPROXIMATE BUILDING BOUNDARY
 - APPROXIMATE EXTENT OF FORMER GAS HOLDER
 - APPROXIMATE EXTENT OF ANNEX BUILDING CELLAR
 - APPROXIMATE LOCATION OF 7,500 GALLON CLOSED-IN PLACE #2 FUEL OIL UST
 - APPROXIMATE LOCATION OF AST ROOM
 - APPROXIMATE EXTENTS OF SUPPORT OF EXCAVATION
 - APPROXIMATE IN-SITU GROUNDWATER TREATMENT TO ADDRESS PETROLEUM-IMPACTED GROUNDWATER
 - APPROXIMATE EXTENT OF REMEDIAL EXCAVATION TO GROUNDWATER SURFACE (ABOUT 7 FEET BGS) FOLLOWED BY IN-SITU GROUNDWATER TREATMENT

- GENERAL NOTES:**
1. EXTERIOR BASE MAP REFERENCED FROM THE MARCH 03, 2025 TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY FOR LIBERTY LANDING, PREPARED BY LANGAN.
 2. INTERIOR BASE MAP REFERENCED FROM THE OCTOBER 24, 2025 PILE LAYOUT PLAN, FO-100.00, FILING SET, PREPARED BY TYLIN.
 3. ALL ELEVATIONS SHOWN HEREIN ARE WITH RESPECT TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 4. APPROXIMATE FORMER GAS HOLDER LOCATION ESTIMATED BY REFERENCING THE APRIL 13, 2016 SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT, PREPARED BY ARCADIS, AND THE AUGUST 2002 WEST 18TH STREET MANUFACTURED GAS PLANT SITE HISTORY REPORT, PREPARED BY PARSONS.
 5. A GEOPHYSICAL SURVEY CONDUCTED AS PART OF THE PHASE II ESI IDENTIFIED AN ANOMALY CONSISTENT WITH THE HISTORICALLY DOCUMENTED 7,500-GALLON FUEL OIL UNDERGROUND STORAGE TANK (UST) (PBS NO. 2-399515).
 6. A SITE RECONNAISSANCE CONDUCTED AS PART OF THE AUGUST 2017 PHASE I ESA, PREPARED BY LANGAN, IDENTIFIED THE APPROXIMATE LOCATION OF THE HISTORICALLY DOCUMENTED ABOVEGROUND STORAGE TANK (AST) ROOM.
 7. BGS = BELOW GRADE SURFACE
 8. BCP = BROWNFIELD CLEANUP PROGRAM

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



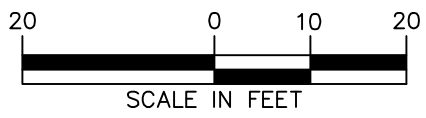
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| Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. 368 Ninth Avenue, 8th Floor New York, NY 10001 T: 212.479.5400 F: 212.479.5444 www.langan.com | Project 550 WEST 20TH STREET BLOCK No. 691, LOT No. 1 MANHATTAN NEW YORK | Figure TRACK 4 CLEANUP PLAN | Project No. 170864001 | Figure 2 |
| | | | Date 03/18/2026 | Drawn By PJD |
| | | | Checked By ERA | |



- LEGEND:**
- APPROXIMATE BCP SITE BOUNDARY
 - APPROXIMATE BUILDING BOUNDARY
 - APPROXIMATE EXTENT OF FORMER GAS HOLDER
 - APPROXIMATE EXTENT OF ANNEX BUILDING CELLAR
 - APPROXIMATE LOCATION OF 7,500 GALLON CLOSED-IN PLACE #2 FUEL OIL UST
 - APPROXIMATE LOCATION OF AST ROOM
 - APPROXIMATE EXTENTS OF SUPPORT OF EXCAVATION
 - APPROXIMATE EXTENT OF REMEDIAL EXCAVATION TO GROUNDWATER SURFACE (ABOUT 7 FEET BGS) FOLLOWED BY IN-SITU GROUNDWATER TREATMENT
 - EP01 APPROXIMATE PROPOSED CONFIRMATION SAMPLE LOCATION
 - SW01 APPROXIMATE PROPOSED SIDEWALL SAMPLE LOCATION

- GENERAL NOTES:**
1. EXTERIOR BASE MAP REFERENCED FROM THE MARCH 03, 2025 TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY FOR LIBERTY LANDING, PREPARED BY LANGAN.
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 6. A SITE RECONNAISSANCE CONDUCTED AS PART OF THE AUGUST 2017 PHASE I ESA, PREPARED BY LANGAN, IDENTIFIED THE APPROXIMATE LOCATION OF THE HISTORICALLY DOCUMENTED ABOVEGROUND STORAGE TANK (AST) ROOM.
 7. BGS = BELOW GRADE SURFACE
 8. BCP = BROWNFIELD CLEANUP PROGRAM
 9. CONFIRMATION SOIL SAMPLES WILL BE COLLECTED FROM THE BASE OF THE REMEDIAL EXCAVATION.
 10. SIDEWALL SAMPLES WILL BE COLLECTED AT A FREQUENCY OF 1 PER 30 LINEAR FEET OF SIDEWALL, UNLESS PRECLUDED BY THE SUPPORT OF EXCAVATION SYSTEM AND FOUNDATIONAL ELEMENTS TO BE LEFT IN PLACE DURING REDEVELOPMENT.

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| Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. 368 Ninth Avenue, 8th Floor New York, NY 10001 T: 212.479.5400 F: 212.479.5444 www.langan.com | Project 550 WEST 20TH STREET BLOCK No. 691, LOT No. 1 MANHATTAN NEW YORK | Figure PROPOSED CONFIRMATION SAMPLE LOCATION PLAN | Project No. 170864001 Date 04/16/2026 Drawn By PJD Checked By ERA | 3 |
| | Project NEW YORK | Figure NEW YORK | | |