

# DECISION DOCUMENT

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Kasser Scrap Metal and Rector Cleaners Site  
Brownfield Cleanup Program  
New York, New York County  
Site No. C231153  
March 2023



**Department of  
Environmental  
Conservation**

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

# DECLARATION STATEMENT - DECISION DOCUMENT

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## **Statement of Purpose and Basis**

This document presents the remedy for the Kasser Scrap Metal and Rector Cleaners Site 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 Kasser Scrap Metal and Rector Cleaners Site and the public's input to the proposed remedy presented by the Department.

## **Description of Selected Remedy**

The elements of the selected remedy are as follows:

### 1. Remedial Design

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

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

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

## 2. Excavation

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

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u); and
- soils which exceed the protection of groundwater soil cleanup objectives (PGSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

All soils in the upper two feet which exceed the restricted residential soil cleanup objectives (RRSCOs) will be excavated and transported off-site for disposal. In addition, petroleum source material (i.e., soil exceeding protection of groundwater soil cleanup objectives) and the 3,000-gallon underground storage tank (UST) associated with NYSDEC Spill No. 2107485 in the southern portion of the site will be excavated to a depth of approximately 10 feet below ground surface (bgs) and taken off-site for proper disposal.

Approximately 1,100 cubic yards of contaminated soil will be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depth for the petroleum spill area 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 the Department, submit the sample results and, in consultation with the Department, determine if further remedial excavation is necessary. Further excavation for development purposes will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

## 3. Backfill

On-site soil which does not exceed the above excavation criteria may be used below the cover system described in remedy element 4 to backfill the excavation and establish the designed grades at the site. 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 in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs), to allow for restricted residential use of the site. Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the

tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

## 6. In-Situ Solidification

In-situ solidification (ISS) will be implemented in a localized area in the southern portion of the site to reduce mobility of residual petroleum related contamination. ISS is a process that binds the soil particles in place creating a low permeability mass. The contaminated soil will be mixed in place together with solidifying agent of cementitious grout using an excavator or augers to produce a solidified mass resulting in a low permeability monolith. The solidified mass will then be covered by the building foundation to prevent direct exposure to the solidified mass. The resulting solid matrix reduces or eliminates mobility of contamination and reduces or eliminates the matrix as a source of groundwater contamination. An approximated 25 square foot area located in the southern portion of the site as indicated on Figure 3. The treatment zone will extend from the approximately 10 feet below grade to approximately 25 feet below grade in areas where non-aqueous phase liquid is present. At least one core through the cured soil-mix columns will be completed to document the effectiveness of the ISS after field implementation is completed.

## 7. In- Situ Groundwater Treatment using Activated Carbon

In-situ groundwater treatment will be implemented to address residual petroleum related volatile organic compounds (VOCs) in the southern portion of the site. Activated carbon will be applied to the subsurface to capture and prevent the migration of petroleum related VOCs. In the area of the captured contamination, conditions will be maintained that will allow anaerobic degradation of dissolved phase hydrocarbons to occur. Activated carbon will be added to the subsurface: in an approximately 1,000-square foot treatment area located in the southern portion of the site where petroleum-related compounds were elevated in the groundwater via 28 injection points at a depth of 11 to 25-feet below grade.

After the injections, monitoring will be required within, and downgradient of, the treatment zone to determine the effectiveness of the remedy. Monitoring will be conducted at a minimum upgradient and downgradient for the detected contaminants and their degradation by-products.

## 8. Institutional Control

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

- 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 NYCDOH; and
- require compliance with the Department approved Site Management Plan.

## 9. 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 8 above.
  - Engineering Controls: The Cover System discussed in paragraph 4 above
  - Operation and Maintenance Plan (O&M): to ensure continued operation, maintenance, monitoring, inspection, and reporting of components of the remedy. The plan includes but is not limited to procedures for operating and maintaining the remedy, maintaining site access controls and Department notification, and providing the Department access to the site and O&M records.

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;
- description of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- provisions for the inspection and maintenance of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

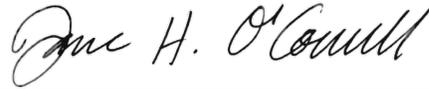
- b. a monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

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

March 14, 2023



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Date

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Jane H. O'Connell  
Regional Remediation Engineer, Region 2

# DECISION DOCUMENT

Kasser Scrap Metal and Rector Cleaners Site  
New York, New York County  
Site No. C231153  
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## **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=C231153>

Manhattan Community Board 1  
1 Centre Street, Room #2202 North  
New York, NY 10007  
Phone: (212)-669-7970

New Amsterdam Public Library  
9 Murray Street  
New York, NY 10007  
Phone: (212) 964-6598

### **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 approximate 0.258-acre site is located at 111-121 Washington Street (a.k.a. 8 Carlisle Street), Manhattan, NY 10006 (Manhattan Tax Block 53, Lot 12). The surrounding area is occupied by residential, commercial, and mixed-use buildings. Carlisle Street and a multi-story mixed-use commercial and residential building are located north of the Site. A seven-story commercial building and several multi-story multi-family residential buildings are located east of the site, followed by Greenwich Street. A multi-story multi-family residential building is located south of the site, followed by Rector Street. Washington Street, a multi-story residential building and a multi-story commercial building are located west of the Site.

#### Site Features:

The site is currently vacant. The lot consists of an asphalt-paved driveway in the northwestern part of the property and overgrown vegetation throughout the remainder of the site. The site is surrounded by a green construction fence to prevent access. The site is in a Flood Zone AE, which encompasses areas within the 1% annual chance flood and 100-year flood plain.

#### Current Zoning and Land Use:

The site is located in the C6-9 LM districts. C6-9 allows for commercial and mixed commercial/residential use. The LM zoning indicates the site is in the Special Lower Manhattan District (LM). The site is currently vacant. The surrounding properties are multi-story mixed use commercial and residential buildings. The site is located approximately 0.02 miles from the closest rail line, the 1 Broadway-Seventh Avenue Local (the "1" or "red line"). The Rector Street Subway Station is located approximately 0.04 miles from the site.

#### Past Use of the Site:

The site was developed by 1894 with several one- to five-story structures. In 1923, the structures were identified as residential dwellings and store fronts and an outhouse. Occupants of the site

included Pacific Warehouse Co. Inc. in 1920, Meehan John & Co. Awnings and Flags in 1927, Kasser Scrap Metal Dealers Inc. in 1934, and residential tenants in 1931. In 1950, the one- to two story building in the central part of the site was identified as a warehouse. By 1977, the structures on the site were demolished and the site was developed with a six-story open deck garage. Occupants of the structure included a rental car facility with on-site refueling of vehicles from 1978 to 1983 (including Avis Rent-A-Car in 1983), Carlisle Parking in 1993, 111 PKG Corporation in 1999, and Rector Cleaners in 2006. There were eleven open NYCDOB violations identified for the site between 2006 and 2021 for various violations reported in relation to the failure to maintain an elevator, work without a permit, occupancy contrary to certificate of occupancy, failure to file reports, failure to construct or maintain job site fence, construction equipment on-site with an expired permit, failure to maintain fencing in a code-compliant manner, and a failure to comply with commissioner's order to file a certificate of correction. By 2010, the garage was demolished, and the site was utilized for the storage of metal containers and miscellaneous materials and equipment. In 2012, the site was occupied by the Port Authority of New York and New Jersey as a World Trade Center maintenance support yard. The yard contained stacked container boxes, office trailers, and it was used to store various mechanical equipment as well as construction waste. The site has been vacant since 2013 and has an asphalt-paved driveway in the northwestern part of the property and overgrown vegetation throughout the remainder of the site.

#### Site Geology and Hydrogeology:

Environmental and geotechnical investigations confirmed the presence of surficial historic fill, primarily comprised of sand with varying amounts of silt, clay, gravel, brick, concrete lumber/wood, glass, and root fibers, to depths of 19-25 ft below grade. Native material identified as former river bottom deposits and consisting of successive layers of silt or clay, fine- to coarse-grained sand, and peat, was observed underlying the historic fill to depths of 36 to 41 ft below grade. Underlying the river bottom deposits, a mixture of sand, silt, clay, gravel, and cobbles/boulders was observed to depths of 43-50 ft below grade. Bedrock, consisting of mica schist of the Manhattan Formation, was observed underlying the native material from 46-53 ft below grade. Groundwater was encountered at depths ranging from about 10.5-14.5 ft below grade. Based on the remedial investigation groundwater flow direction was reported to the north-northeast. Groundwater in Manhattan is not used as a potable water source.

A site location map is attached as Figure 1 and a site layout is attached as Figure 2.

#### **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, an alternative that restrict(s) the use of the site to restricted residential 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, 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:

1,2,4-trimethylbenzene	lead
benzene	mercury
ethylbenzene	acenaphthene
naphthalene	benzo(b)fluoranthene
n-propylbenzene	dibenzofuran
xylene (mixed)	fluoranthene
benzo(a)anthracene	fluorene
benzo(k)fluoranthene	phenanthrene
chrysene	indeno(1,2,3-cd)pyrene

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.

Nature and Extent of Contamination:

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), metals, pesticides, herbicides per- and polyfluoroalkyl substances (PFAS), and 1,4-dioxane. Soil vapor was analyzed for VOCs. Based upon investigations conducted to date, the primary contaminants of concern include petroleum VOCs and SVOCs in soil and groundwater, metals in soil, and VOCs in soil vapor.

Soil - VOCs, metals and SVOCs were detected above Protection of Groundwater Soil Cleanup Objectives (PGSCO) and/or Restricted Residential Soil Cleanup Objectives (RRSCO). VOCs exceeding applicable SCOs include 1,2,4-trimethylbenzene at 62 parts per million (ppm) (PGSCO is 3.6 ppm), benzene at 0.19 ppm (PGSCO is 0.06 ppm), ethylbenzene at 12 ppm (PGSCO is 1 ppm), n-propylbenzene at 57 ppm (PGSCO is 3.9 ppm) and total xylenes at 36 ppm (PGSCO is 1.6 ppm). Metals exceeding applicable SCOs include lead at 3,700 ppm (RRSCO is 400 ppm) and mercury at 3.55 ppm (RRSCO is 0.81 ppm). SVOCs exceeding applicable SCOs in soil include acenaphthene at 500 ppm (PGSCO: 98 ppm and RRSCO: 100 ppm), benzo(a)anthracene at 62 ppm (PGSCO and RRSCO: 1 ppm), benzo(b)fluoranthene at 29 ppm (PGSCO: 1.7 ppm and RRSCO: 1 ppm), benzo(k)fluoranthene at 8.4 ppm (PGSCO: 1.7 ppm and RRSCO: 3.9 ppm), chrysene at 52 ppm (PGSCO: 1 ppm and RRSCO: 3.9 ppm), dibenzofuran at 340 ppm (RRSCO: 59 ppm), fluoranthene at 340 ppm (RRSCO: 100 ppm), fluorene at 370 ppm (RRSCO: 100 ppm), indeno(1,2,3-cd)pyrene at 5 ppm (RRSCO: 0.5 ppm), and naphthalene at 420 ppm (RRSCO: 100 ppm), phenanthrene at 860 ppm (RRSCO: 100 ppm). Non-aqueous phase liquid was present in soil in an isolated area in the southern portion of the site. Data does not indicate any off-site impacts in soil related to this site.

Groundwater: Groundwater samples collected at the site exceeded the Ambient Water Quality Standards (AWQSs) for VOCs and SVOCs. The highest concentrations of VOCs detected above AWQS include 1,2,4-trimethylbenzene at 50 parts per billion (ppb) (AWQS: 5 ppb), benzene at 9.2 ppb (AWQS: 1 ppb), ethylbenzene at 11 ppb (AWQS: 5 ppb), m,p-xylene at 19 ppb (AWQS: 5 ppb), naphthalene at 440 ppb (AWQS: 10 ppb), n-propylbenzene 43 ppb (AWQS: 5 ppb), and total xylenes at 27 ppb (AWQS: 5 ppb). The highest concentrations of SVOCs detected above AWQS include acenaphthene at 92 ppb (AWQS: 20 ppb), benzo(a)anthracene at 0.09 ppb (AWQS: 0.002 ppb), benzo(b)fluoranthene at 0.1 ppb (AWQS: 0.002 ppb), benzo(k)fluoranthene at 0.03 ppb (AWQS: 0.002 ppb), chrysene at 0.22 ppb (AWQS: 0.002 ppb), and indeno(1,2,3-cd)pyrene at 0.06 ppb (AWQS: 0.002 ppb). Perfluorooctanesulfonic acid (PFOS) was detected in groundwater at a maximum concentration of 73.2 parts per trillion (ppt) and perfluorooctanoic acid (PFOA) was detected at a maximum concentration of 73 ppt, exceeding the maximum contaminant limit (MCL – drinking water standard) of 10 ppt each. Data does not indicate any off-site impacts in groundwater related to this site.

Soil Vapor: Soil vapor containing primarily petroleum related VOC's were detected at the site including acetone at 120 micrograms per cubic meter ( $\text{ug}/\text{m}^3$ ), cyclohexane at 140  $\text{ug}/\text{m}^3$ , n-hexane at 200  $\text{ug}/\text{m}^3$ , propylene at 130 micrograms per cubic meter ( $\text{ug}/\text{m}^3$ ), m,p-xylene at 72  $\text{ug}/\text{m}^3$ , and toluene at 52  $\text{ug}/\text{m}^3$ . 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*.

The site is fenced, access is restricted, and people will not come into contact with site-related soil and groundwater contamination unless they dig below the ground surface. People are not drinking

site-related contaminants in the groundwater since the area is served by a public water supply 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 vacant so inhalation of site contaminants in indoor air via vapor intrusion is not a current concern. However, the potential exists for inhalation of site contaminants due to soil vapor intrusion for any future on-site development or occupancy. 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 groundwater 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 use with generic soil cleanup objectives remedy.

The selected remedy is referred to as the Excavation, Groundwater Treatment, and In-situ Stabilization remedy.

The elements of the selected remedy, as shown in Figure 3, are as follows:

### 1. Remedial Design

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

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

### 2. Excavation

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

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u); and
- soils which exceed the protection of groundwater soil cleanup objectives (PGSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- any underground storage tanks (USTs), fuel dispensers, underground piping or other

structures associated with a source of contamination.

All soils in the upper two feet which exceed the restricted residential soil cleanup objectives (RRSCOs) will be excavated and transported off-site for disposal. In addition, petroleum source material (i.e., soil exceeding protection of groundwater soil cleanup objectives) and the 3,000-gallon underground storage tank (UST) associated with NYSDEC Spill No. 2107485 in the southern portion of the site will be excavated to a depth of approximately 10 feet below ground surface (bgs) and taken off-site for proper disposal.

Approximately 1,100 cubic yards of contaminated soil will be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depth for the petroleum spill area 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 the Department, submit the sample results and, in consultation with the Department, determine if further remedial excavation is necessary. Further excavation for development purposes will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

### 3. Backfill

On-site soil which does not exceed the above excavation criteria may be used below the cover system described in remedy element 4 to backfill the excavation and establish the designed grades at the site. 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 in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs), to allow for restricted residential use of the site. Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

### 6. In-Situ Solidification

In-situ solidification (ISS) will be implemented in a localized area in the southern portion of the site to reduce mobility of residual petroleum related contamination. ISS is a process that binds the soil particles in place creating a low permeability mass. The contaminated soil will be mixed in place together with solidifying agent of cementitious grout using an excavator or augers to produce a solidified mass resulting in a low permeability monolith. The solidified mass will then be covered by the building foundation to prevent direct exposure to the solidified mass. The resulting solid matrix reduces or eliminates mobility of contamination and reduces or eliminates the matrix as a

source of groundwater contamination. An approximated 25 square foot area located in the southern portion of the site as indicated on Figure 3. The treatment zone will extend from the approximately 10 feet below grade to approximately 25 feet below grade in areas where non-aqueous phase liquid is present. At least one core through the cured soil-mix columns will be completed to document the effectiveness of the ISS after field implementation is completed.

#### 7. In- Situ Groundwater Treatment using Activated Carbon

In-situ groundwater treatment will be implemented to address residual petroleum related volatile organic compounds (VOCs) in the southern portion of the site. Activated carbon will be applied to the subsurface to capture and prevent the migration of petroleum related VOCs. In the area of the captured contamination, conditions will be maintained that will allow anaerobic degradation of dissolved phase hydrocarbons to occur. Activated carbon will be added to the subsurface: in an approximately 1,000-square foot treatment area located in the southern portion of the site where petroleum-related compounds were elevated in the groundwater via 28 injection points at a depth of 11 to 25-feet below grade.

After the injections, monitoring will be required within, and downgradient of, the treatment zone to determine the effectiveness of the remedy. Monitoring will be conducted at a minimum upgradient and downgradient for the detected contaminants and their degradation by-products.

#### 8. Institutional Control

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

- 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 NYCDOH; and
- require compliance with the Department approved Site Management Plan.

#### 9. Site Management Plan

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

- c. 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 8 above.
  - Engineering Controls: The Cover System discussed in paragraph 4 above

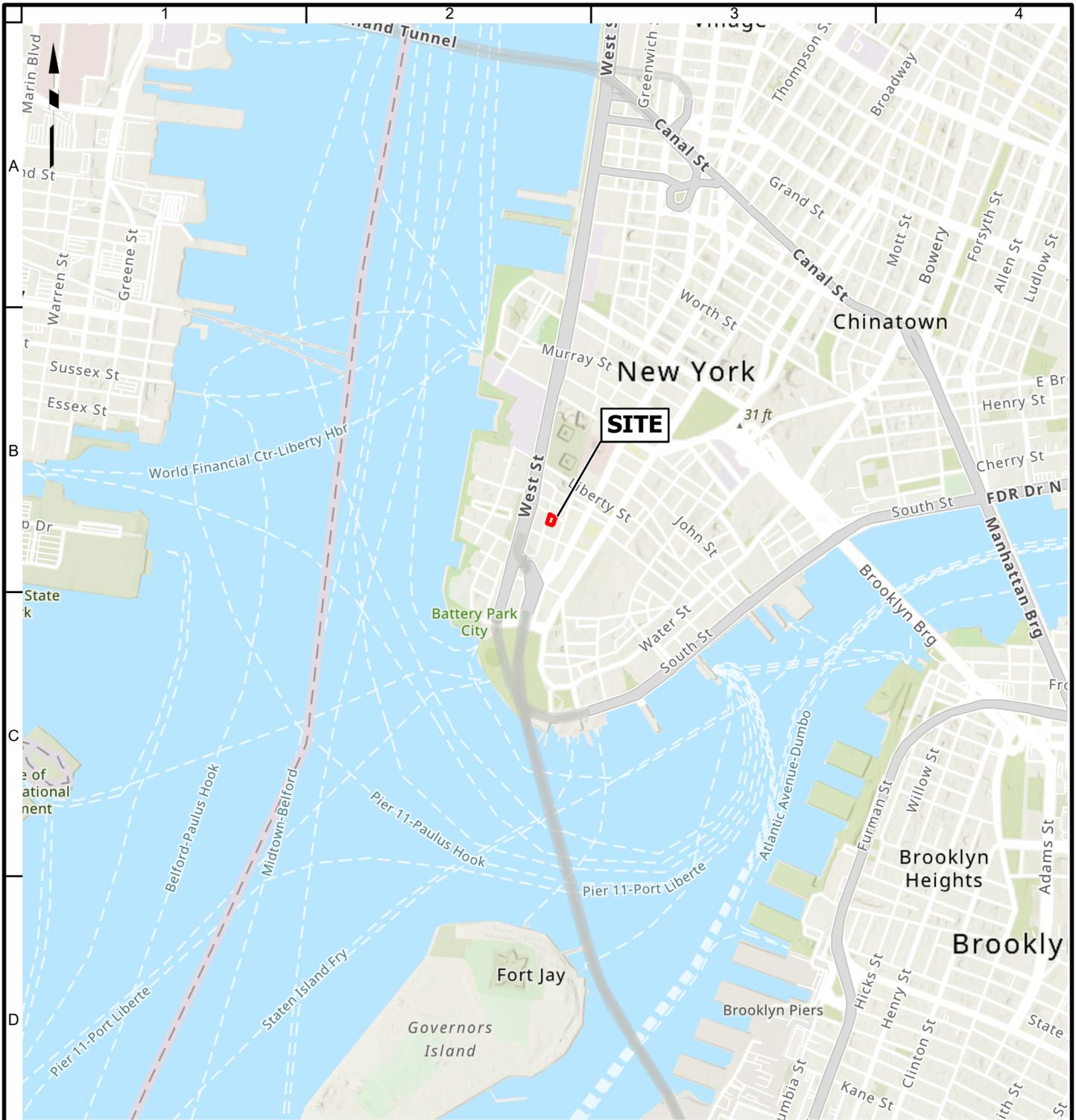
- Operation and Maintenance Plan (O&M): to ensure continued operation, maintenance, monitoring, inspection, and reporting of components of the remedy. The plan includes, but is not limited to procedures for operating and maintaining the remedy, maintaining site access controls and Department notification, and providing the Department access to the site and O&M records.

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;
- description of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- 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;
- provisions for the inspection and maintenance 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.

d. 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; and
- a schedule of monitoring and frequency of submittals to the Department.
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.



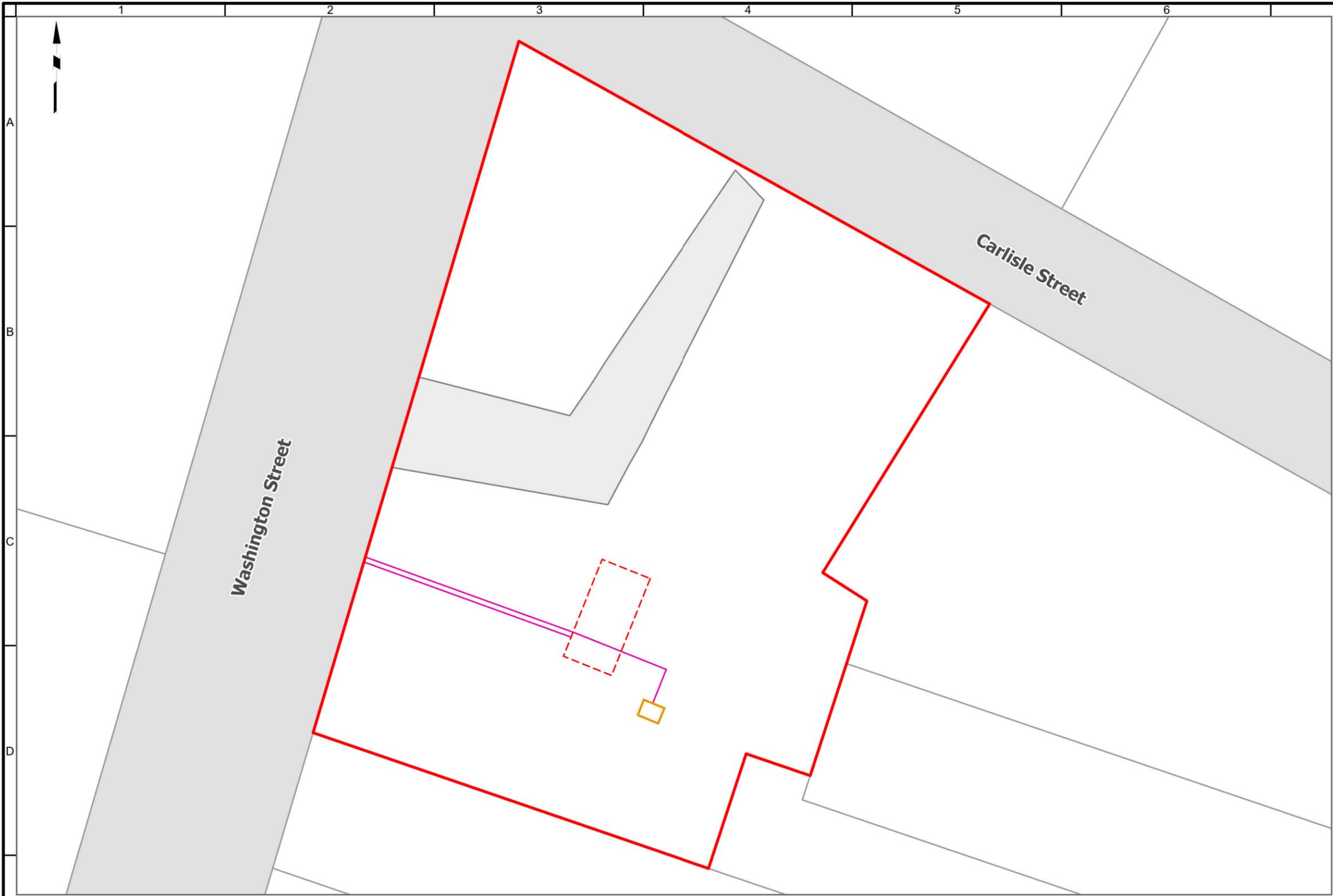
**Legend**

 Site Boundary



NOTES:  
 1. TOPOGRAPHIC BASEMAP PROVIDED THROUGH LANGAN'S ESRI ARCGIS SOFTWARE LICENSING AND ARCGIS ONLINE, NATIONAL GEOGRAPHIC SOCIETY, I-CUBED.  
 2. ALL FEATURES SHOWN ARE APPROXIMATE

<p><b>LANGAN</b>          21 Penn Plaza, 360 West 31st Street, 8th Floor          New York, NY 10001-2727          T: 212.479.5400 F: 212.479.5444 www.langan.com</p> <p>Langan Engineering &amp; Environmental Services, Inc.          Langan Engineering, Environmental, Surveying,          Landscape Architecture and Geology, D.P.C.          Langan International LLC          Collectively known as Langan</p>	<p>Project  <b>KASSER SCRAP          METAL AND RECTOR          CLEANERS SITE</b>          NEW YORK          NEW YORK COUNTY NEW YORK</p>	<p>Figure Title  <b>SITE          LOCATION MAP</b></p>	<p>Project No. 170695201          Date 11/4/2021          Scale 1"=2,000'          Drawn By GS          Submission Date</p>	<p>Figure No. 1</p>
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**Legend**

- Approximate Site Boundary
- Approximate UST Location
- Approximate Location of Former Pump Station
- Approximate Location of Vent and Fill Piping
- Asphalt-Paved Driveway
- Tax Lot Boundary

**NOTES:**  
 1. TAX PARCEL DATA PROVIDED BY THE NEW YORK CITY DEPARTMENT OF CITY PLANNING  
 2. ALL FEATURES SHOWN ARE APPROXIMATE.  
 3. UST - UNDERGROUND STORAGE TANK.

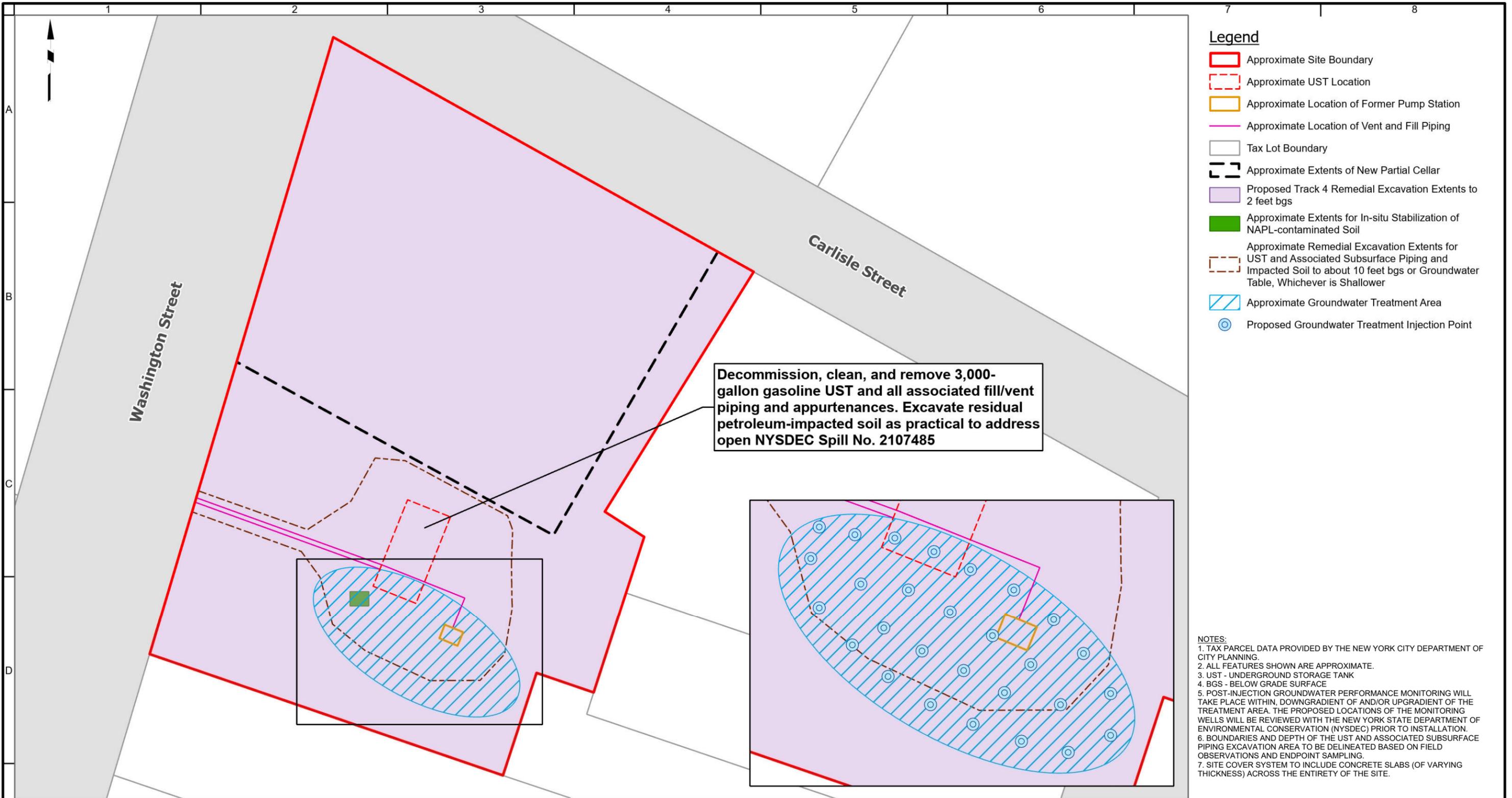
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Project  
**KASSER SCRAP METAL AND  
 RECTOR CLEANERS SITE**  
 NEW YORK  
 NEW YORK COUNTY NEW YORK

Figure Title  
**SITE PLAN**

Project No. 170695201	Figure No. <b>2</b>
Date 4/4/2022	
Scale 1"=20'	
Drawn By GS	

20 0 20  
 SCALE IN FEET



**Decommission, clean, and remove 3,000-gallon gasoline UST and all associated fill/vent piping and appurtenances. Excavate residual petroleum-impacted soil as practical to address open NYSDEC Spill No. 2107485**

- Legend**
- Approximate Site Boundary
  - Approximate UST Location
  - Approximate Location of Former Pump Station
  - Approximate Location of Vent and Fill Piping
  - Tax Lot Boundary
  - Approximate Extents of New Partial Cellar
  - Proposed Track 4 Remedial Excavation Extents to 2 feet bgs
  - Approximate Extents for In-situ Stabilization of NAPL-contaminated Soil
  - Approximate Remedial Excavation Extents for UST and Associated Subsurface Piping and Impacted Soil to about 10 feet bgs or Groundwater Table, Whichever is Shallower
  - Approximate Groundwater Treatment Area
  - Proposed Groundwater Treatment Injection Point

- NOTES:**
1. TAX PARCEL DATA PROVIDED BY THE NEW YORK CITY DEPARTMENT OF CITY PLANNING.
  2. ALL FEATURES SHOWN ARE APPROXIMATE.
  3. UST - UNDERGROUND STORAGE TANK
  4. BGS - BELOW GRADE SURFACE
  5. POST-INJECTION GROUNDWATER PERFORMANCE MONITORING WILL TAKE PLACE WITHIN, DOWNGRADIENT OF AND/OR UPGRADIENT OF THE TREATMENT AREA. THE PROPOSED LOCATIONS OF THE MONITORING WELLS WILL BE REVIEWED WITH THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) PRIOR TO INSTALLATION.
  6. BOUNDARIES AND DEPTH OF THE UST AND ASSOCIATED SUBSURFACE PIPING EXCAVATION AREA TO BE DELINEATED BASED ON FIELD OBSERVATIONS AND ENDPOINT SAMPLING.
  7. SITE COVER SYSTEM TO INCLUDE CONCRETE SLABS (OF VARYING THICKNESS) ACROSS THE ENTIRETY OF THE SITE.

SCALE IN FEET

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Project  
**KASSER SCRAP METAL AND  
 RECTOR CLEANERS SITE**  
 NEW YORK  
 NEW YORK COUNTY NEW YORK

Figure Title  
**TRACK 4  
 CLEANUP PLAN**

Project No.	170695201	Figure No.
Date	2/28/2023	<b>3</b>
Scale	1"=20'	
Drawn By	GS	