DECISION DOCUMENT

2409 Jerome Avenue
Brownfield Cleanup Program
Bronx, Bronx County
Site No. C203087
January 2026

NEW YORK STATE | 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 2409 Jerome Avenue 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 2409 Jerome Avenue 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 to the

extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

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^{TM} (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

All soils in the upper two feet which exceed the restricted residential SCOs will be excavated and transported off-site for disposal. All off-site soils which exceed residential SCOs, as defined by 6 NYCRR Part 375-6.8, will be excavated and transported off-site for disposal. The existing on-site building(s) will be demolished and material which cannot be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy. Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination. One decommissioned and abandoned-in-place 550-gallon waste oil UST was identified and is present below the auto repair shop in the northern part of the site. This tank was investigated in 2024 and was not removed due to the risk of the excavation compromising the garage structure. Other storage tanks were previously decommissioned and removed from the site.

3. Site Cover

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 (SCOs) for restricted residential use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

4. Air Sparge - Soil Vapor Extraction

Air sparging will be implemented to address the groundwater plume contaminated by volatile organic compounds (VOCs). VOCs will be physically removed from the groundwater and soil below the water table (saturated soil) by injecting air into the subsurface. The injected air rising through the groundwater will volatilize and transfer the VOCs from the groundwater and/or soil into the injected air. The VOCs are carried with the injected air into the vadose zone (the area below the ground surface but above the water table) where a soil vapor extraction (SVE) system designed to remove the injected air will be installed. The SVE system will apply a vacuum to wells that have been installed into the vadose zone to remove the VOCs along with the air introduced by the sparging process. The air extracted from the SVE wells will be treated as necessary prior to being discharged to the atmosphere.

As part of the Remedial Design phase, a field pilot study work plan will be submitted for the implementation of a field pilot test to assess on-and off-site conditions and design the SVE system. Design parameters to be established include: the number of air-injection wells and SVE wells necessary to adequately capture the volatilized contaminants; the location of each well; the depth of each well; and the treatment technology used to treat the extracted air prior to it being discharged to the atmosphere. Following design and installation of the SVE system, a startup monitoring and sampling event will be conducted involving: the collection of pressure readings from each air-injection and SVE well; air sampling at each SVE well; influent sampling at the manifold; and effluent sampling at the exhaust/discharge point of the system.

Any soil or fill generated during installation of the SVE system will be stockpiled, screened for indications of contamination, and transported off-site for disposal.

5. Vapor Mitigation

Any on-site buildings, and off-site buildings in areas of site-related contamination, will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the migration of vapors into the building from the subsurface.

6. 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. The remedy will achieve a Track 4 restricted residential cleanup at a minimum and will include imposition of a site cover.

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

- require the remedial party or site owner to complete and submit to the 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.

7. 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 engineering controls remain in place and effective:
   - Institutional Controls: The EE discussed in Remedy Element 6 above.
   - Engineering Controls: The Site Cover discussed in Remedy Element 3, the Air Sparge – Soil Vapor Extraction system discussed in Remedy Element 4, and the Vapor Mitigation system discussed in Remedy Element 5.

   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 that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Remedy Element 3 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, soil vapor, and indoor air on and off-site to assess the performance and effectiveness of the remedy;
   - a schedule of monitoring and frequency of submittals to the NYSDEC; and

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
   - procedures for operating and maintaining the systems;
   - compliance inspection of the systems to ensure proper O&M as well as providing the data for any necessary reporting;
   - maintaining site access controls and NYSDEC notification; and

- providing the NYSDEC access to the site and O&M records.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration NYSDEC guidance, as appropriate. The remedy is protected of public health and the environment.

January 23, 2026

Date

Scott Deyette, Director
Remedial Bureau B

DECISION DOCUMENT

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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 comment 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=C203087

Bronx Library Center
310 East Kingsbridge Road
Bronx, NY 10458
Phone: 718-579-4244

Bronx Community Board 7
229-A East 204th Street
Bronx, NY 10458
Phone: 718-933-5650

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 0.578-acre site is located in an urban area at 2409 Jerome Avenue in the Fordham Heights neighborhood of the Bronx. The site is identified on the New York City Tax Map as Block 3199, Lots 106 and 113. The site is bounded by a 2-story commercial building (2415 Jerome Ave) followed by West Fordham Road to the north, Jerome Avenue to the east, a 2-story academic facility (2375 Jerome Avenue) followed by West 184th Street to the south, and 5-story multifamily residential buildings (2390-2410 Davidson Avenue) followed by Davidson Avenue to the west.

Site Features: The site is rectangularly shaped and encompasses an approximate area of 25,200 square feet. The site is comprised of an asphalt-paved parking lot and two 1-story structures currently utilized by an auto repair shop (Fordham Auto Plus Inc). The topography of the site generally slopes to the east. An NYCTA elevated structure (the 4-line) is east of the site, above Jerome Avenue. The transit structure is offset approximately 28 feet from the east property line.

Current Zoning and Land Use: The site is located within residential zoning district R7-1 with a C2-4 commercial overlay. R7 districts are classified as medium-density apartment house districts. The surrounding parcels are located in residential and commercial zoning districts.

Past Use of the Site: The site was used as a fuel dispensing station and auto repair facility from 1927 to 1989, a greasing and auto laundry facility (circa 1945 to 1989), and auto repair facility from 1927 to the present. One abandoned-in-place 550-gallon waste oil underground storage tank (UST), thirteen closed 550-gallon gasoline USTs and one closed 4,000-gallon gasoline UST, installed from December 1968 through 1978, were associated with the former fuel dispensing station. Based on the NYSDEC petroleum bulk storage (PBS) records (PBS # 2-188492), an interview with site personnel, and a geophysical investigation conducted prior to drilling, the closed USTs were decommissioned and removed from the site between 1988 and 1991. A petroleum spill (Spill No.: 88-05383) was reported to the NYSDEC during the UST removals in September 1988 when an unknown amount of gasoline was released into surface soil and groundwater. The spill was subsequently closed by the NYSDEC in February 1989. In 2024, as part of an interim remedial measure (IRM), the previously in-service waste oil UST was

abandoned-in-place by filling it with a synthetic abandonment media.

Site Geology and Hydrogeology: The subsurface strata consist of a layer of historic fill material that extends to depths of up to 9 feet below ground surface (bgs) followed by native soil and bedrock. The historic fill consists of brown-black, medium to fine sand with varying amounts of silt, clay, gravel, and debris. Native soil consisting of a layer of gray-brown clay with varying amounts of sand and silt, followed by a layer of brown-black, medium to fine sand with varying amounts of gravel, silt, and clay was encountered beneath the historic fill layer. Bedrock, consisting of fine-grained biotite-quartz gneiss, is present at about 15 to 18 feet bgs across the site; bedrock is weathered near the contact with overlying soil in isolated locations. Depth to groundwater ranges from about 9.63 to 10.00 feet bgs. The poor recharge experienced during groundwater sampling likely indicates groundwater is perched on bedrock. Groundwater flow direction varies across the site and appears to be influenced by localized hydrogeologic conditions. In the northern half of the site, groundwater flows to the south and/or southwest towards the Harlem River. In contrast, groundwater in the southern half of the site appears to flow generally eastward.

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

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 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) 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 Participant. The Applicant has an obligation to address on-site and off-site contamination. However, NYSDEC, in consultation with NYSDOH, 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. 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:

1,2,4-trimethylbenzene
benzene
ethylbenzene
toluene
xylene (mixed)
indeno(1,2,3-cd)pyrene
benzo(a)anthracene
benzo(a)pyrene

benzo(b)fluoranthene
chrysene
dibenz[a,h]anthracene
lead
trichloroethene (TCE)
mercury
2,2,4-trimethylpentane
cis-1,2-dichloroethene
cyclohexane
heptane
hexane
vinyl chloride
benzo(k)fluoranthene
1,3,5-trimethylbenzene
acetone
cymene
isopropylbenzene
copper
1,2,4,5-tetramethylbenzene
naphthalene
n-propylbenzene
tetrachloroethene (PCE)
barium
cadmium
antimony
selenium

The contaminants of concern exceed the applicable SCGs for:

- groundwater
- soil
- soil vapor intrusion

6.2: Interim Remedial Measures

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

The following IRM has been completed at this site based on conditions observed during the RI.

IRM - UST in-place Abandonment

From July 29 to August 1, 2024, an out-of-service 550-gallon waste oil UST was abandoned-in-place in accordance with DER-10 and Title 6 of the New York Codes, Rules and Regulations(6 NYCRR) Parts 612-614. Residual product was pumped from the UST using a vacuum truck. The UST was inspected via camera down the access pipe after residual product was removed. A spinning jet head was placed down the access pipe to clean the tank interior with a mixture of water and BioSolve. Used wash-water was pumped with a vacuum truck. The cleaning cycle was repeated seven times until there was no further camera evidence of residual product in the UST. About 620 gallons of non-hazardous oil/water was transported and disposed of off-site. Once cleaned, approximately 86 pounds of a synthetic abandonment media (Tripolymer 105 Tank Media Resin) was placed in the tank.

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. Soil vapor, sub-slab soil vapor, and indoor air samples were analyzed for VOCs. Based upon investigations conducted to date, the primary contaminants of concern include petroleum-related VOCs, chlorinated VOCs, SVOCs, and metals in soil and groundwater; and petroleum-related VOCs and chlorinated VOCs in soil vapor.

Soil:
Sample results were compared against the restricted residential soil cleanup objectives (RRSCO), and to the protection of groundwater soil cleanup objectives (PGSCOs) for those contaminants found in groundwater above applicable standards. VOCs were detected including maximum concentrations of 1,2,4-trimethylbenzene (TMB) at 120 parts per million (ppm) compared to the PGWSCO of 3.6 ppm, benzene at 12 ppm (PGWSCO is 0.06 ppm), ethylbenzene at 54 ppm (PGWSCO is 1 ppm), toluene at 110 ppm (PGWSCO is 0.7 ppm), and total xylenes at 290 ppm (PGWSCO is 1.6 ppm). SVOCs were detected including maximum concentrations of benzo(a)anthracene at 13 ppm (RRSCO is 1 ppm), benzo(a)pyrene at 11 ppm (RRSCO is 1 ppm), benzo(b)fluoranthene at 14 ppm (RRSCO is 1 ppm), chrysene at 13 ppm (PGWSCO is 1 ppm), dibenzo(a,h)anthracene at 1.4 ppm (RRSCO is 0.33 ppm), and Indeno(1,2,3-cd)pyrene at 5.9 ppm (RRSCO is 0.5 ppm). Metals were detected including maximum concentrations of lead at 484 ppm (RRSCO is 400 ppm) and mercury at 0.814 ppm (RRSCO is 0.81 ppm). No PFAS, PCBs, or pesticides were detected above RRSCOs.

Data does indicate off-site impacts in soil related to this site beneath the adjacent sidewalk to the east and northeast. VOCs were detected including maximum concentrations of 1,2,4-TMB at 200 ppm, 1,3,5-TMB at 69 ppm, ethylbenzene at 56 ppm, and total xylenes at 240 ppm.

Groundwater:
VOCs were found in groundwater exceeding the NYS Ambient Water Quality Standards and Guidance Values (AWQSGVs), including maximum concentrations of 1,2,4,5-tetramethylbenzene at 130 parts per billion (ppb) compared to the AWQSGV of 5 ppb, 1,2,4-TMB at 2,100 ppb (AWQSGV is 5 ppb), 1,3,5-TMB at 560 ppb (AWQSGV is 5 ppb), 2-chlorotoluene at 19 ppb (AWQSGV is 5 ppb), acetone at 1,900 ppb (AWQSGV is 50 ppb), benzene at 7,600 ppb (AWQSGV is 1 ppb), cis-1,2-dichloroethene at 6.9 ppb (AWQSGV is 5 ppb), cymene at 28 ppb (AWQSGV is 5 ppb), vinyl chloride at 10 ppb (AWQSGV is 2 ppb), ethylbenzene at 3,200 ppb (AWQSGV is 5 ppb), isopropylbenzene at 120 ppb (AWQSGV is 5 ppb), n-butylbenzene at 53 ppb (AWQSGV is 5 ppb), n-propylbenzene at 290 ppb (AWQSGV is 5 ppb), PCE at 5.6 ppb (AWQSGV is 5 ppb), toluene at 9,800 ppb (AWQSGV is 5 ppb), total xylenes at 19,000 ppb (AWQSGV is 5 ppb), and vinyl chloride at 10 ppb (AWQSGV is 2 ppb). SVOCs were found in groundwater exceeding AWQSGVs, including maximum concentrations of benzo(a)anthracene at 1.6 ppb (AWQSGV is 0.002 ppb), benzo(a)pyrene at 1.7 (AWQSGV is 0 ppb), benzo(b)fluoranthene at 1.6 ppb (AWQSGV is 0.002 ppb), chrysene at 1.5 ppb (AWQSGV is 0.002 ppb), indeno(1,2,3-cd)pyrene at 0.56 ppb (AWQSGV is 0.002 ppb), and naphthalene at 400

ppb (AWQSGV is 10 ppb). Perfluorooctanesulfonic acid (PFOS) was detected at a maximum concentration of 109 parts per trillion, or ppt (AWQSGV is 2.7 ppt) and perfluorooctanoic acid (PFOA) at 138 ppt (AWQSGV is 6.7 ppt). Other than naturally occurring minerals such as sodium, iron, and manganese, dissolved metals detected above their respective AWQSGVs included barium at 1,324 ppb (AWQSGV is 1,000 ppb), lead at 37.64 ppb (AWQSGV is 25 ppb), antimony at 6.1 ppb (AWQSGV is 3 ppb), selenium at 13.4 ppb (AWQSGV is 10 ppb), and cadmium at 5.01 ppb (AWQSGV at 5 ppb). No PCBs or pesticides were detected above their respective AWQSGVs.

In off-site groundwater, data does indicate localized impacts to the east and northeast. VOCs were detected including maximum concentrations of 1,2,4,5-tetramethylbenzene at 98 ppb, 1,2,4-TMB at 1,300 ppb, 1,3,5-TMB at 420 ppb, benzene at 330 ppb, tetrachloroethene (PCE) at 5.6 ppb (AWQSGV is 5 ppb), ethylbenzene at 1,300 ppb, isopropylbenzene at 120 ppb, n-butylbenzene at 53 ppb, naphthalene at 410 ppb, total xylenes at 4,800 ppb, and toluene at 940 ppb. SVOCs were detected including maximum concentrations of benzo(a)anthracene at 0.07 ppb, benzo(a)pyrene at 0.05 ppb, benzo(b)fluoranthene at 0.09 ppb, benzo(k)fluoranthene at 0.02 ppb, chrysene at 0.06 ppb, and indeno(1,2,3-cd)pyrene at 0.04 ppb. PFOS was detected at a maximum concentration of 66.2 ppt and PFOA at 71.3 ppt. Other than naturally occurring minerals, dissolved metals detected above their respective AWQSGVs included barium at 1,323 ppb. No PCBs or pesticides were detected above their respective AWQSGVs in off-site groundwater.

Soil Vapor, Sub-Slab Vapor, & Indoor Air:
Chlorinated VOCs detected in soil vapor include maximum concentrations of PCE at 1,460 micrograms per cubic meter (ug/m3), TCE at 200 ug/m3, cis-1,2-dichloroethene at 69.8 ug/m3, vinyl chloride at 1,490 ug/m3, and total BTEX at 380.2 ug/m3.

VOCs were also found in sub-slab vapor (SSV) samples and in co-located on-site indoor air (IA) samples, including maximum concentrations of PCE (41.4 ug/m3 SSV and 2,010 ug/m3 IA), TCE (115 ug/m3 SSV and 0.129 ug/m3 IA), cis-1,2-dichloroethene (4,800 ug/m3 SSV), and vinyl chloride (146,000 ug/m3 SSV). Evaluation of these data in accordance with NYSDOH's Soil Vapor Intrusion Guidance indicates mitigation is necessary.

Data does indicate downgradient off-site impacts in sub-slab soil vapor and indoor air related to this site. VOCs were detected in two off-site properties, including maximum concentrations of 1,2,4-TMB (1,160 ug/m3 SSV and 1.95 ug/m3 IA), 2,2,4-trimethylpentane (5,650 ug/m3 SSV and 1.22 ug/m3 IA), ethylbenzene (751 ug/m3 SSV and 0.869 ug/m3 IA), m,p-xylene (2,550 ug/m3 SSV and 3.25 ug/m3 IA), and o-xylene (1,340 ug/m3 SSV and 1.06 ug/m3 IA). Evaluation of these data in accordance with NYSDOH's Soil Vapor Intrusion Guidance indicates mitigation is necessary in both properties.

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. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil), may move into nearby 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 (SVI). The potential exists for people on- or off-site to inhale site contaminants in indoor air due to soil vapor intrusion. Annual SVI sampling is being conducted in the on-site building to ensure that additional actions are not needed. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site development. Actions to address SVI have been recommended at two off-site buildings and additional evaluation is needed to determine whether further actions are needed off-site.

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 groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove or treat 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 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 Excavation and SVE/AS System remedy.

The elements of the selected remedy, as shown in Figure 4, 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 shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

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^{TM} (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

All soils in the upper two feet which exceed the restricted residential SCOs will be excavated and transported off-site for disposal. All off-site soils which exceed residential SCOs, as defined by 6 NYCRR Part 375-6.8, will be excavated and transported off-site for disposal. The existing on-site building(s) will be demolished and material which cannot be beneficially reused on site will be taken off-site for proper disposal in order to implement the remedy. Excavation and removal of any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination. One decommissioned and abandoned-in-place 550-gallon waste oil UST was identified and is present below the auto repair shop in the northern part of the site. This tank was investigated in 2024 and was not removed due to the risk of the excavation compromising the garage structure. Other storage tanks were previously decommissioned and removed from the site.

3. Site Cover

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 (SCOs) for restricted residential use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

4. Air Sparge - Soil Vapor Extraction

Air sparging will be implemented to address the groundwater plume contaminated by volatile organic compounds (VOCs). VOCs will be physically removed from the groundwater and soil below the water table (saturated soil) by injecting air into the subsurface. The injected air rising through the groundwater will volatilize and transfer the VOCs from the groundwater and/or soil into the injected air. The VOCs are carried with the injected air into the vadose zone (the area below the ground surface but above the water table) where a soil vapor extraction (SVE) system

designed to remove the injected air will be installed. The SVE system will apply a vacuum to wells that have been installed into the vadose zone to remove the VOCs along with the air introduced by the sparging process. The air extracted from the SVE wells will be treated as necessary prior to being discharged to the atmosphere.

As part of the Remedial Design phase, a field pilot study work plan will be submitted for the implementation of a field pilot test to assess on-and off-site conditions and design the SVE system. Design parameters to be established include: the number of air-injection wells and SVE wells necessary to adequately capture the volatilized contaminants; the location of each well; the depth of each well; and the treatment technology used to treat the extracted air prior to it being discharged to the atmosphere. Following design and installation of the SVE system, a startup monitoring and sampling event will be conducted involving: the collection of pressure readings from each air-injection and SVE well; air sampling at each SVE well; influent sampling at the manifold; and effluent sampling at the exhaust/discharge point of the system.

Any soil or fill generated during installation of the SVE system will be stockpiled, screened for indications of contamination, and transported off-site for disposal.

5. Vapor Mitigation

Any on-site buildings, and off-site buildings in areas of site-related contamination, will be required to have a sub-slab depressurization system, or other acceptable measures, to mitigate the migration of vapors into the building from the subsurface.

6. 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 imposition of a site cover.

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

- require the remedial party or site owner to complete and submit to the 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.

7. 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 engineering controls remain in place and effective:

- Institutional Controls: The EE discussed in Remedy Element 6 above.
- Engineering Controls: The Site Cover discussed in Remedy Element 3, the Air Sparge – Soil Vapor Extraction system discussed in Remedy Element 4, and the Vapor Mitigation system discussed in Remedy Element 5.

This plan includes, but may not be limited to:

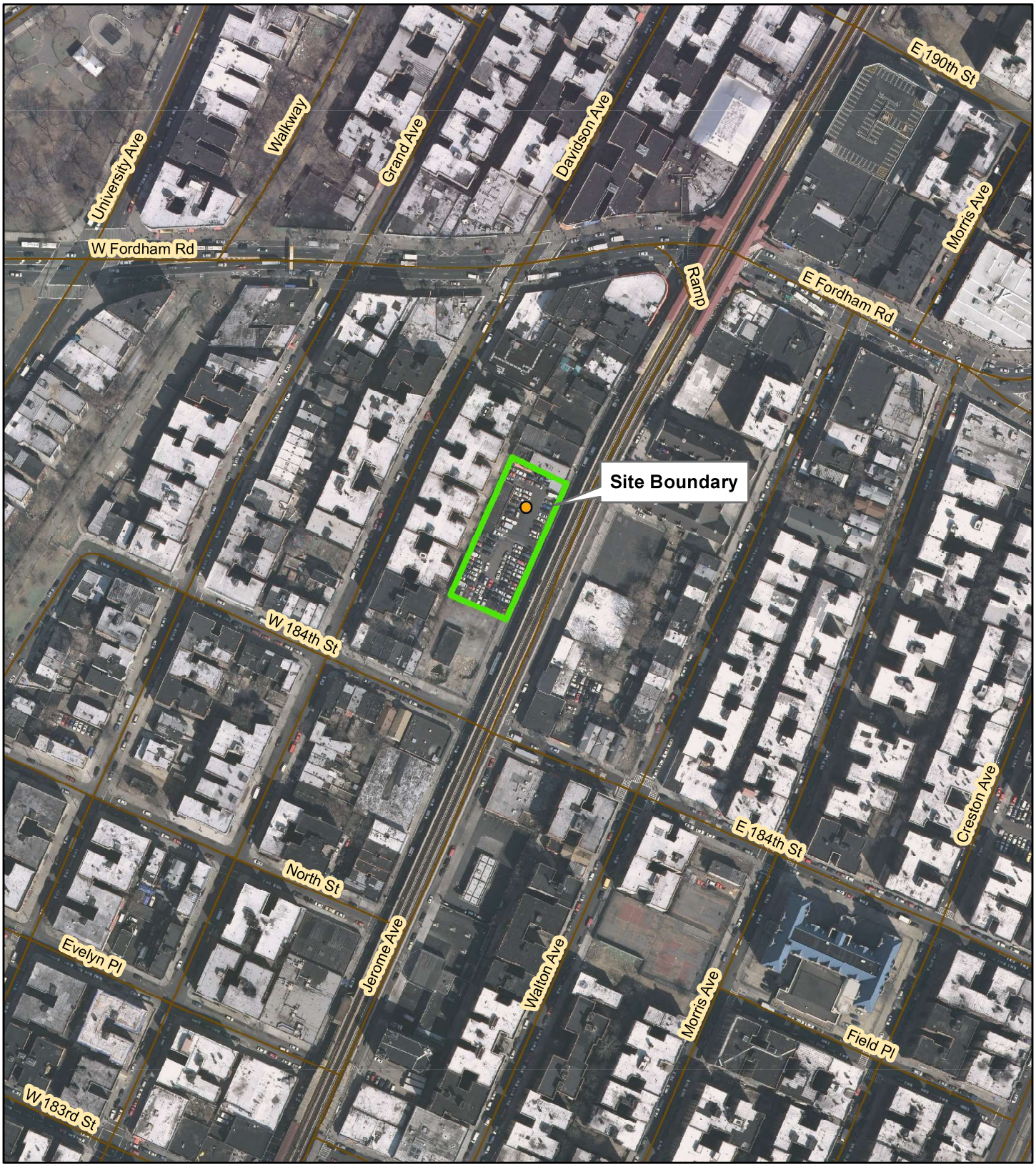
- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Remedy Element 3 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, soil vapor, and indoor air on and off-site to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the NYSDEC; and

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- procedures for operating and maintaining the systems;
- compliance inspection of the systems to ensure proper O&M as well as providing the data for any necessary reporting;
- maintaining site access controls and NYSDEC notification; and
- providing the NYSDEC access to the site and O&M records.



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Site Map
2409 Jerome Avenue
2409 Jerome Avenue
Bronx, NY
C203087

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LEGEND:

- APPROXIMATE SITE BOUNDARY (2409 JEROME AVENUE)
- APPROXIMATE TAX LOT BOUNDARY
- APPROXIMATE EXTENT OF ASPHALT-PAVED PARKING AREA
- APPROXIMATE EXTENT OF AUTO REPAIR BUILDINGS
- APPROXIMATE LOCATION OF CLOSED-IN-PLACE WASTE OIL UNDERGROUND STORAGE TANK
- APPROXIMATE LOCATION OF WASTE OIL ABOVEGROUND STORAGE TANK

NOTES:

1. BASE MAP SOURCE: SITE SURVEY COMPLETED IN DECEMBER 2015 BY LANGAN.
2. ELEVATIONS SHOWN IN THE FIGURE ARE BASED IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), WHICH IS APPROXIMATELY 1.1 FEET ABOVE MEAN SEA LEVEL DATUM AT SANDY HOOK, NEW JERSEY AS DEFINED BY THE NEW YORK STATE GEOLOGICAL SURVEY (USGS NVGD 1929).
3. NORTH ARROW SHOWS TRUE NORTH.

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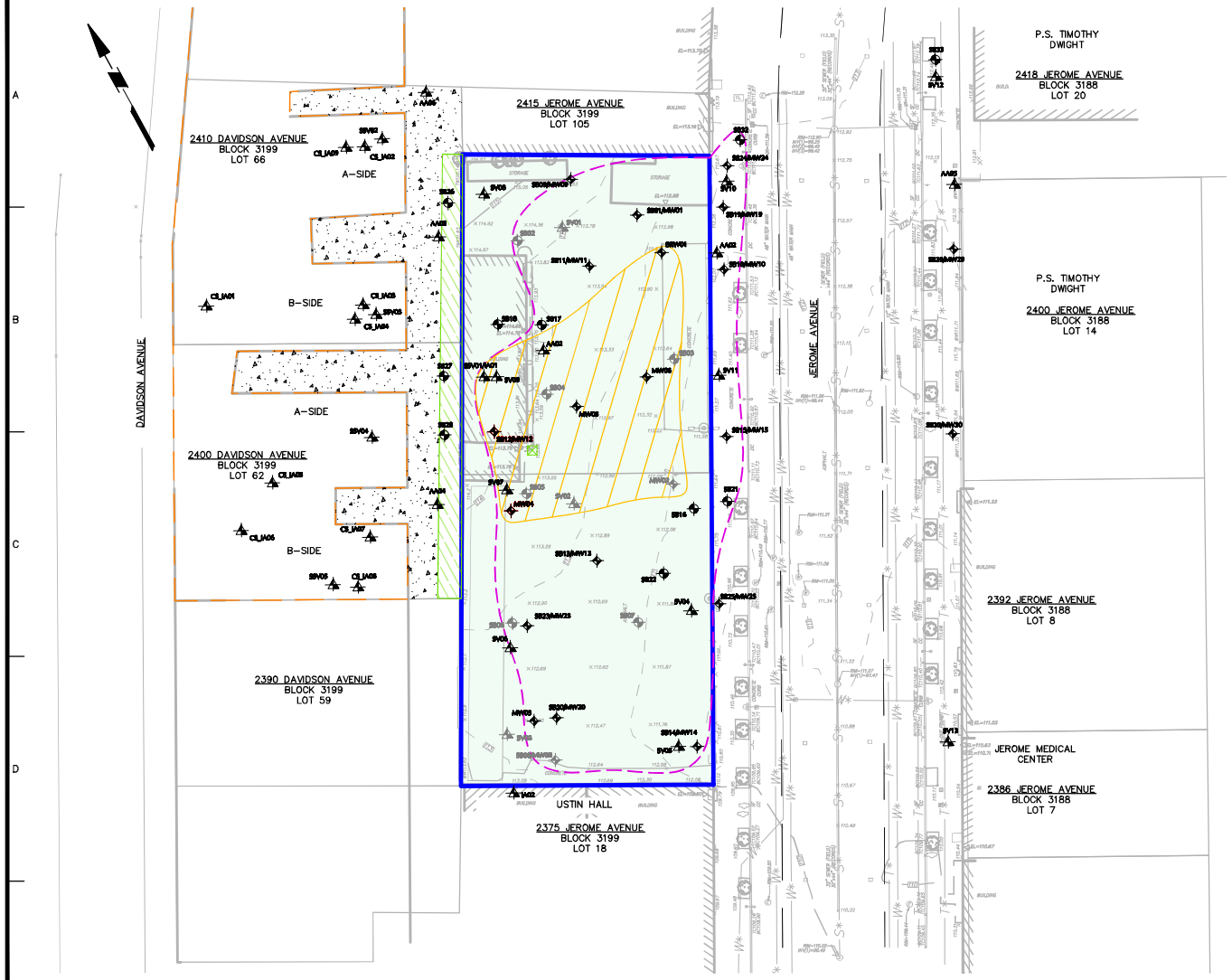
Project	Figure Title	Project No.	Figure No.
2409 JEROME AVENUE BLOCK No. 3199, LOT Nos. 106 & 113 BRONX NEW YORK	SITE PLAN	170390601 Date 1/26/2021 Drawn By LH Checked By WK	2

Filename: \\Langan.com\data\NYC\data6\170390601\Cadd Data - 170390601\SheetFiles\Environmental\SMP\Figure 2 - Site Plan.dwg Date: 1/29/2021 Time: 17:40 User: rbalkind Style Table: Langan.stb Layout: ANSIB-BL



LEGEND:

- APPROXIMATE SITE BOUNDARY (2409 JEROME AVENUE)
- APPROXIMATE TAX LOT BOUNDARY
- APPROXIMATE ADJOINING BUILDING BOUNDARY
- APPROXIMATE OUTDOOR LANDSCAPED AREA
- APPROXIMATE OUTDOOR CONCRETE PAVEMENT AREA
- PREVIOUS SOIL BORING LOCATION
- PREVIOUS SOIL BORING AND/OR MONITORING WELL LOCATION
- PREVIOUS SOIL VAPOR POINT OR SUB-SLAB VAPOR POINT LOCATION
- RI SOIL BORING LOCATION
- RI SOIL BORING AND/OR MONITORING WELL LOCATION (RED IF LNAPL WAS IDENTIFIED)
- RI SOIL VAPOR POINT OR SUB-SLAB VAPOR POINT LOCATION
- AOC-1: CVOCs FROM HISTORICAL AND/OR CURRENT SITE USE
- AOC-2: PETROLEUM-IMPACTED SOIL, GROUNDWATER, AND SOIL VAPOR
- AOC-3: HISTORIC FILL
- APPROXIMATE NEW YORK CITY TRANSIT AUTHORITY EXTENTS

NOTES:

1. BASE MAP SOURCE: SITE SURVEY COMPLETED IN DECEMBER 2015 BY LANGAN.
2. ELEVATIONS SHOWN IN THE FIGURE ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), WHICH IS APPROXIMATELY 1.1 FEET ABOVE MEAN SEA LEVEL DATUM AT SANDY HOOK, NEW JERSEY AS DEFINED BY THE NEW YORK STATE GEOLOGICAL SURVEY (USGS NVGD 1929).
3. NORTH ARROW SHOWS TRUE NORTH.
4. AOC = AREA OF CONCERN
5. LNAPL = LIGHT NON-AQUEOUS PHASE LIQUID
6. RI = REMEDIAL INVESTIGATION

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Project	2409 JEROME AVENUE BLOCK No. 3199 LOT Nos. 106 & 113 BRONX NEW YORK
Figure Title	AOC MAP
Project No.	170390601
Date	07/12/2024
Drawn By	JF
Checked By	GW
Figure No.	3

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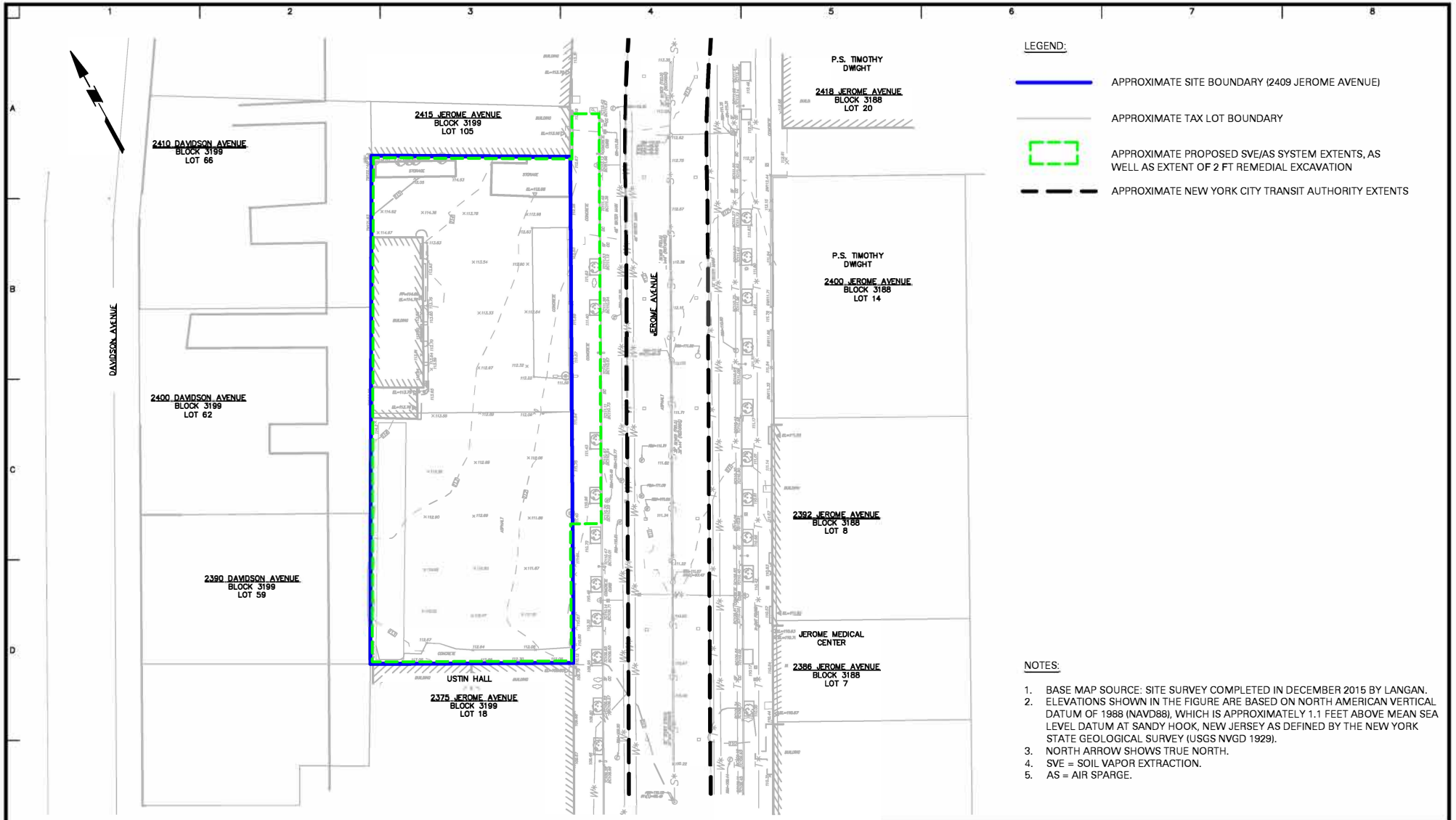

LEGEND:

- APPROXIMATE SITE BOUNDARY (2409 JEROME AVENUE)
- APPROXIMATE TAX LOT BOUNDARY
- APPROXIMATE PROPOSED SVE/AS SYSTEM EXTENTS, AS WELL AS EXTENT OF 2 FT REMEDIAL EXCAVATION
- APPROXIMATE NEW YORK CITY TRANSIT AUTHORITY EXTENTS

NOTES:

1. BASE MAP SOURCE: SITE SURVEY COMPLETED IN DECEMBER 2015 BY LANGAN.
2. ELEVATIONS SHOWN IN THE FIGURE ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), WHICH IS APPROXIMATELY 1.1 FEET ABOVE MEAN SEA LEVEL DATUM AT SANDY HOOK, NEW JERSEY AS DEFINED BY THE NEW YORK STATE GEOLOGICAL SURVEY (USGS NVGD 1929).
3. NORTH ARROW SHOWS TRUE NORTH.
4. SVE = SOIL VAPOR EXTRACTION.
5. AS = AIR SPARGE.

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Project
2409 JEROME AVENUE
BLOCK No. 3199
LOT Nos. 106 & 113
BRONX NEW YORK

Figure Title
ALTERNATIVE II - TRACK 4 CLEANUP

Project No. 170390601
Date 07/12/2024
Drawn By JF
Checked By GW

Figure No. 4

Filename: \\langan.com\data\NYC\data6\170390601\Cadd Data - 170390601\SheetFiles\Environmental\RAWP\Figure 8 - Alternative II - Track 4 Cleanup.dwg Date: 12/9/2024 Time: 14:33 User: vkanagaratnam Style Table: Langan.stb Layout: ANSIB-BL