DECISION DOCUMENT

Sun Valley Nursery Filling Station Site
Brownfield Cleanup Program
Ossining, Westchester County
Site No. C360207
October 2024

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 Sun Valley Nursery Filling Station 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 Sun Valley Nursery Filling Station Site 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

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

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;
- concentrated solid or semi-solid hazardous substances per 6 NYCRR Part 375-1.2(au)(1)
- non-aqueous phase liquids;
- soil with visual waste material or non-aqueous phase liquid;
- soil containing total SVOCs exceeding 500 ppm;
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

Excavation and off-site disposal of all on-site soils which exceed unrestricted SCOs, as defined

by 6 NYCRR Part 375-6.8, down to between 8 and 13 feet below ground surface (bgs), or weathered bedrock if encountered first. If a Track 1 cleanup is achieved, a Cover System will not be a required element of the remedy.

Approximately 5000 cubic yards of contaminated soil will be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depth 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 NYSDEC, submit the sample results and, in consultation with the NYSDEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

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

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

On-site soil which does not exceed the above excavation criteria for any constituent may be used anywhere on-site, including below the water table, to backfill the excavation or re-grade the site.

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

3. Monitored Natural Attenuation

Groundwater contamination remaining after active remediation will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination and also for MNA indicators which will provide an understanding of the (biological activity) breaking down the contamination. It is anticipated that contamination will decrease by an order of magnitude within an estimated period of 5 years. Select monitoring wells will be sampled and analyzed annually. A report containing cumulative monitoring data will be provided at the end of a 5-year monitoring period for review, and active remediation will be proposed if it appears that natural processes alone will not address the contamination.

4. Enhanced Bioremediation

The contingency remedial action for MNA will depend on the information collected, but it is currently anticipated that injection of oxygen release compound would be the expected contingency remedial action.

5. Vapor Intrusion Evaluation

As part of the Conditional Track 1 remedy, a soil vapor intrusion evaluation will be completed prior to occupancy of the building. The evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

6. Engineering and Institutional Controls

The intent of the remedy is to achieve a Track 1 unrestricted use; therefore, no environmental easement or site management plan is anticipated. If the pre-occupancy soil vapor intrusion (SVI) evaluation is not completed prior to completion of the Final Engineering Report, then a Site Management Plan (SMP) and Environmental Easement (EE) will be required to address the SVI evaluation and implement actions as needed. If a mitigation or monitoring action is needed, a Track 1 cleanup can only be achieved if the mitigation system or other required action is no longer needed within 5 years of the date of the Certificate of Completion.

In the event that Track 1 unrestricted use is not achieved, including achievement of groundwater and soil vapor remedial objectives, the following contingent remedial elements will be required and the remedy will achieve a Track 2 restricted residential cleanup.

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 2 restricted residential cleanup at a minimum.

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

- require the remedial party or site owner to complete and submit to the 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, commercial, or industrial 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 County DOH; and
- require compliance with the NYSDEC approved Site Management Plan.

7. Site Management Plan

A Site Management Plan which includes the following:
1) 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 Remedial Element 6 above.

Engineering Controls: mitigation system discussed in Remedial Element 6 above.

This plan includes, but may not be limited to:

- provisions for the management and inspection of the identified engineering controls;
- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- a provision for SVI evaluation for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- maintaining site access controls and NYSDEC notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

2) a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the NYSDEC;
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Declaration

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

October 2, 2024
Date

Sarah Saucier
Sarah Saucier, Director
Remedial Bureau C

DECISION DOCUMENT

Sun Valley Nursery Filling Station Site
Ossining, Westchester County
Site No. C360207
October 2024

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=C360207

Ossining Public Library
Attn: Karen LaRocca-Fels
53 Croton Avenue
Ossining, NY 10562
Phone: (914) 941-2416

The Village of Ossining Planning Department
Attn: Jaime Martinez
101 Briarcliff-Peekskill Parkway
Ossining, NY 10562
Phone: (914) 762-6232

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

Site Location: The Site is located at 136-140 Croton Avenue, Ossining, New York. The Site is located in a primarily residential area and is one mile east of Croton Bay and half a mile northwest of the Ossining Reservoir. Croton Avenue is located north of the Site, beyond which are multiuse residential and retail buildings and an apartment complex. Watson Avenue is located east of the Site, and Prospect Avenue is located west of the Site, beyond which are single family homes to the west, retail businesses, and auto service shops to the east. The south of the Site is bordered by single family residences.

Site Features: The Site is currently vacant, with concrete footprints of two buildings that were demolished in 2020. The Site slopes slightly downward to the west and south, with a sharp upward slope along the southern border. The Site is not located in a flood zone.

Current Zoning and Land Use: The Site is currently located in the Neighborhood Center District, NC-2, which is designed to provide locations for neighborhood-serving businesses and promote diverse housing types. Commercial uses such as offices and retail are allowed in addition to conditional residential dwellings. Industrial uses are limited to “artisan workspace” defined uses. The subject property is currently vacant and public access is prevented by a fence and locked gate.

Past Use of the Site:
136 Croton Avenue (Lot 70, Western Parcel): Lot 79 was undeveloped land prior to the construction of the Site buildings in the 1940s and 1950s. Thereafter, Lot 79 was a retail gasoline station and automotive repair garage until 1981. Four 10,000-gallon gasoline underground storage tanks (USTs) on the western side of 136 Croton Ave were removed in 1981 and were confirmed to be leaking. This lot also had an inground hydraulic lift. After serving as a gasoline service station and automotive repair garage, this lot operated as a nursery from 1981 until 2017.

138-140 Croton Avenue (Lot 80, Eastern Parcel): Lot 80 was undeveloped land prior to the construction of buildings in the 1940s and 1950s. Lot 80 was a retail gasoline station and automotive repair garage until 1996. At least three USTs were historically located on this parcel in two areas, in the northeastern corner and west of the former garage. The three known USTs were removed in 1996. The remains of an in-ground hydraulic lift existed inside the building. After 1996, this lot also operated as part of the nursery until 2017. The greenhouse and garden center structures on both lots were demolished in February 2020.

Site Geology and Hydrogeology: According to the Ossining N.Y. Quadrangle map, the elevation of the Site is approximately 290 feet above mean sea level. Soil down to 5-39 feet below ground surface (bgs) primarily comprises of fine sand, with traces of fine gravel, silt, and clay. Soil is then underlain by weathered bedrock encountered between 5 and 39 feet bgs, generally 10 to 15 feet bgs, and described as gravel, silt, and boulders. Groundwater is encountered between 29 and 34 feet bgs and flows from the east to the west. Competent bedrock is encountered below the weathered bedrock or soil, starting at 36 feet bgs. Bedrock in the region is mapped as the Walloomsac Formation, which consists of phyllite, schist, and meta-graywacke.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

NYSDEC may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, an alternative which allows for unrestricted use of the site was evaluated.

A comparison of the results of the Remedial Investigation (RI) against unrestricted use standards, criteria and guidance values (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. NYSDEC has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

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

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

The RI is intended to identify the nature (or type) of contamination which may be present at a

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

The analytical data collected on this site includes data for:

- groundwater
- soil
- 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. 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 contaminant(s) of concern identified at this site is/are:

benzene
ethylbenzene
toluene
o-xylene
p-xylene
arsenic
copper
nickel
heptane
hexane
1,2,4-trimethylbenzene
1,3,5-trimethylbenzene
naphthalene
2,2,4-trimethylpentane
cyclohexane

The contaminants of concern exceed the applicable SCGs for:

- groundwater
- soil

6.2: Interim Remedial Measures

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

There were no IRMs performed at this site during the RI.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Soil, soil vapor, 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. No structures remain on-site, so no indoor air sampling was done. Based upon investigations conducted to date, the primary contaminants of concern that exceed unrestricted use soil cleanup objectives (UUSCOs), protection of groundwater soil cleanup objectives (PGWSCOs), and ambient water quality standards (AWQS) are petroleum-related VOCs, such as 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, toluene, total xylenes, and naphthalene, and metals, such as arsenic, lead, and chromium.

Nature and Extent of Contamination:

Soil:

1,2,4-trimethylbenzene exceeded UUSCOs and PGWSCOs and in both parcels, ranging from 13 parts per million (ppm) to 280 ppm (UUSCO and PGWSCO 3.6 ppm). 1,3,5-Trimethylbenzene exceeded UUSCOs and PGWSCOs in the western parcel, ranging from 12 to 96 ppm (UUSCO 3.6 ppm and PGWSCO 8.4 ppm). Benzene exceeded UUSCOs and PGWSCOs in both parcels, ranging from 0.094 to 3.7 ppm (UUSCO and PGWSCO 0.06 ppm). Ethylbenzene exceeded UUSCOs and PGWSCOs ranging from 8.88 to 100 ppm. (UUSCO and PGWSCO 1 ppm). Total xylenes exceeded UUSCOs and PGWSCOs in both parcels, ranging from 36 to 540 ppm (UUSCO 0.26 ppm and PGWSCO 1.6 ppm). The SVOC Naphthalene exceeded UUSCOs and PGWSCOs in both parcels, ranging from 13.8 to 27 ppm (UUSCO and PGWSCO 12 ppm). Exceedances were located between 4 and 10.5 feet below ground surface (bgs) near the footprints of fuel pumps at Area of Concern 1 (AOC-1), and between 1 and 4.5 feet bgs near the potential footprints of underground storage tanks (USTs) at AOC-5.

Metals that exceeded UUSCOs were in one boring each, with silver at 2.3 ppm (UUSCO 2 ppm) 7-7.5 feet bgs by AOC-1 , selenium at 12.9 ppm for PGWSCOs as well (UUSCO 3.9 ppm and PGWSCO 4 ppm) 2-2.5 feet bgs by AOC-1, nickel at 51.2 ppm (UUSCO 30 ppm) and zinc at 128 ppm (UUSCO 109 ppm) 1-1.5 feet bgs by AOC-5, copper at 69.5 ppm (UUSCO 50 ppm) 9.5-10 feet bgs by AOC-4, and manganese at 1600 ppm (UUSCO 1600 ppm) at the center of the site. Arsenic exceeded UUSCOs and PGWSCOs at 85.4 ppm (UUSCO 13 ppm and PGWSCO 16 ppm) 2-2.5 feet bgs by AOC-1.

SVOCs other than naphthalene, as well as pesticides, PCBs, and PFAS were non-detect or below UUSCOs.

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

Groundwater:

1,2,4-trimethylbenzene exceeded Ambient Water Quality Standards (AWQS) by AOC-1 and AOC-5 at 42 and 180 parts per billion (ppb) respectively (AWQS 5 ppb). 1,3,5-trimethylbenzene exceeded AWQS by AOC-1 and AOC-5 at 12 and 59 ppb respectively (AWQS 5 ppb). Benzene and ethylbenzene exceeded AWQS by AOC-1 at 6.3 and 21 ppb respectively (AWQS 1 and 5 ppb respectively). Toluene exceeded AWQS by AOC-1 and AOC-5 at 36 and 5.8 ppb respectively (AWQS 5 ppb). Total xylenes exceeded AWQS by AOC-1 and AOC-5 at 109 and 111 ppb respectively (AWQS 5 ppb).

Bis (2-ethylhexyl)phthalate exceeded AWQS by the center of the site and AOC-5 at 41 and 7.9 ppb respectively (AWQS 5 ppb). Phenol exceeded AWQS by AOC-4 and AOC-5 at 42 and 9 ppb respectively (AWQS 1 pbb). Benzo(a)pyrene exceeded AWQS in the center of the site at 0.09 ppb (AWQS 0.002 ppb). Benzo(a)anthracene exceeded AWQS at the center of the site and AOC-5 at 0.03 and 0.02 ppb respectively, benzo(b)fluoranthene at 0.17 and 0.01 ppb respectively, benzo(k)fluoranthene at 0.05 and 0.01 ppb respectively, and chrysene at 0.12 and 0.01 ppb respectively (AWQS 0.002 ppb). Indeno (1,2,3-cd)pyrene exceeded AWQS at the center of the site at 0.08 ppb (AWQS 0.002 ppb). Naphthalene exceeded AWQS by AOC-5 at 24 ppb (AWQS 10 ppb).

Metals exceeded AWQS primarily in one location in the center of the site and by AOC-5 with barium at 10990 and 4464 ppb (AWQS 1000 ppb), beryllium at 12.38 and 4.5 ppb (AWQS 3 ppb), chromium at 780.9 and 362.1 ppb (AWQS 50 ppb), copper at 1567 and 518.2 ppb (AWQS 200 ppb), lead at 293.3 and 155.2 ppb (AWQS 25 ppb), nickel at 544.4 and 271.1 ppb (AWQS 100 ppb), and selenium at 66.6 and 36.8 ppb (AWQS 10 ppb) respectively. Arsenic was detected in the center at 31.48 ppb (AWQS 25 ppb).

Pesticides, PCBs, and PFAS were non-detect or below AWQS.

VOCs are likely to migrate off-site as while the highest concentrations are in up-gradient wells, they are also present in downgradient monitoring wells though at a lower concentration when compared to up-gradient wells.

Soil Vapor:

No buildings remain on-site, so no indoor air sampling was done. Soil vapor was sampled at 5 feet bgs across the site.

Multiple VOCs were detected in soil vapor. 1,2,4-Trimethylbenzene was detected between 654 and 30800 micrograms per cubic meter (ug/m3), 1,3,5-trimethylbenzene between 390 and 14800 ug/m3, 2,2,4-trimethylpentane between 682 and 1690000 ug/m3, and o-xylenes between 769 and 296000 ug/m3 at AOC-1, AOC-5, and the western corners of the site. Benzene was detected between 868 and 696000 ug/m3, ethylbenzene between 1970 and 439000 ug/m3, toluene between 10800 and 5620000 ug/m3, and p/m xylenes between 6040 and 1070000 ug/m3 at AOC-1, AOC-5, and the northwest corner of the site. Contaminants in soil vapor are not likely to migrate or be a concern off-site, as the highest concentrations for all compounds other than 2,2,4-Trimethylpentane were located at AOC-1 in the north-central part of the site, and for 2,2,4-Trimethylpentane was at AOC-5 in the northeast part of the site. The lower values of the compounds listed above were encountered along the western downgradient perimeter, and other than ethylbenzene at 730, o-xylenes at 682, and p/m xylenes at 2440 ug/m3, the others were less than 100 ug/m3 along the center of the southern perimeter.

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

6.4: Summary of Human Exposure Pathways

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

Direct contact with contaminants in the soil is unlikely because the site is restricted by a fence surrounding the entire site. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds (VOCs) 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. Environmental sampling indicates that soil vapor intrusion is not a concern for 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 ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

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

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

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

The selected remedy is a Conditional Track 1 remedy.

The selected remedy is referred to as the Soil Excavation and Vapor Intrusion Evaluation 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;
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- 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

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

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- soil exceeding the 6 NYCRR Part 371 hazardous criteria for lead;
- concentrated solid or semi-solid hazardous substances per 6 NYCRR Part 375-1.2(au)(1)
- non-aqueous phase liquids;
- soil with visual waste material or non-aqueous phase liquid;
- soil containing total SVOCs exceeding 500 ppm;
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

Excavation and off-site disposal of all on-site soils which exceed unrestricted SCOs, as defined by 6 NYCRR Part 375-6.8, down to between 8 and 13 feet below ground surface (bgs), or weathered bedrock if encountered first. If a Track 1 cleanup is achieved, a Cover System will not be a required element of the remedy.

Approximately 5000 cubic yards of contaminated soil will be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depth 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 NYSDEC, submit the sample results and, in consultation with the NYSDEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

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

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

On-site soil which does not exceed the above excavation criteria for any constituent may be used anywhere on-site, including below the water table, to backfill the excavation or re-grade the site.

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

3. Monitored Natural Attenuation

Groundwater contamination remaining after active remediation will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination and also for MNA indicators which will provide an understanding of the (biological activity) breaking down the contamination. It is anticipated that contamination will decrease by an order of magnitude within an estimated period of 5 years. Select monitoring wells will be sampled and analyzed annually. A report containing cumulative monitoring data will be provided at the end of a 5-year monitoring period for review, and active remediation will be proposed if it appears that natural processes alone will not address the contamination.

4. Enhanced Bioremediation

The contingency remedial action for MNA will depend on the information collected, but it is currently anticipated that injection of oxygen release compound would be the expected contingency remedial action.

5. Vapor Intrusion Evaluation

As part of the Conditional Track 1 remedy, a soil vapor intrusion evaluation will be completed prior to occupancy of the building. The evaluation will include a provision for implementing actions recommended to address exposures related to soil vapor intrusion.

6. Engineering and Institutional Controls

The intent of the remedy is to achieve a Track 1 unrestricted use; therefore, no environmental easement or site management plan is anticipated. If the pre-occupancy soil vapor intrusion (SVI) evaluation is not completed prior to completion of the Final Engineering Report, then a Site Management Plan (SMP) and Environmental Easement (EE) will be required to address the SVI evaluation and implement actions as needed. If a mitigation or monitoring action is needed, a Track 1 cleanup can only be achieved if the mitigation system or other required action is no longer needed within 5 years of the date of the Certificate of Completion.

In the event that Track 1 unrestricted use is not achieved, including achievement of groundwater and soil vapor remedial objectives, the following contingent remedial elements will be required and the remedy will achieve a Track 2 restricted residential cleanup.

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 2 restricted residential cleanup at a minimum.

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

- require the remedial party or site owner to complete and submit to the 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, commercial, or industrial 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 County DOH; and
- require compliance with the NYSDEC approved Site Management Plan.

7. Site Management Plan

A Site Management Plan which includes the following:
1) 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 Remedial Element 6 above.

Engineering Controls: mitigation system discussed in Remedial Element 6 above.

This plan includes, but may not be limited to:
- provisions for the management and inspection of the identified engineering controls;
- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- a provision for SVI evaluation for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- maintaining site access controls and NYSDEC notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

2) a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the NYSDEC;
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

REFERENCE:

Imagery ©2024 Airbus, Maxar Technologies, Map data ©2024 United States Terms Privacy Send Product Feedback 200 ft

N:\ACAD\12060\CAD\PHASE II\12060 – FIG-1.1 – SITE LOCATION MAP.DWG 10/29/21 12:18:29PM, aas, LAYOUT:FIG-1.1

REMEDIAL INVESTIGATION REPORT
136-140 CROTON AVENUE
OSSINING, NEW YORK 10652

SITE LOCATION MAP

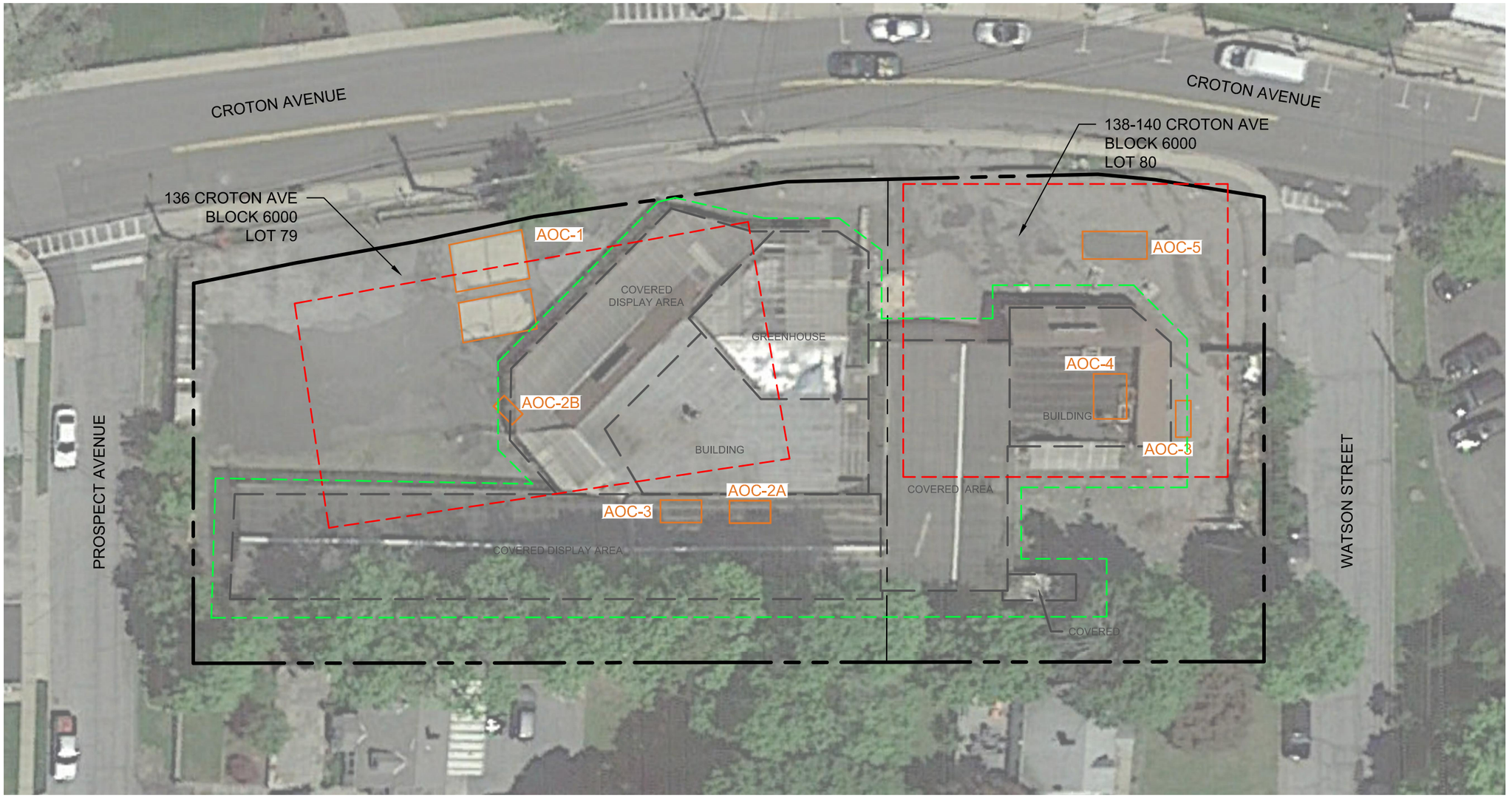
SESI CONSULTING ENGINEERS D.P.C.

SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL

12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

FIG-1

DRAWN BY: aas
CHECKED BY: CCM
SCALE: AS NOTED
DATE: 08/30/2021
JOB NO.: 12060



NOTE:
1. BUILDING LINES DEPICT FORMER FEATURES. SITE CURRENTLY VACANT.
2. AREAS OF CONCERN (AOC's) ARE NOTED BASED ON BORINGS COLLECTED IN THE BERKSHIRE ENVIRONMENTAL SERVICES TECHNOLOGY LLC PHASE II INVESTIGATION IN 2017.
3. AOC's ARE APPROXIMATE LOCATIONS AND NOT CLEARLY IDENTIFIED IN 2017.

LEGEND:
- SITE BOUNDARY
- FORMER BUILDING OUTLINE
- APPROX. LOCATION OF AOC
- APPROXIMATE LOCATION OF REC-1
- APPROXIMATE LOCATION OF REC-2

AREA OF CONCERN (AOC) LEGEND:
AOC-1 - HISTORIC FILLING STATION PADS AND UNDERGROUND STORAGE TANK (UST) REMOVAL AREA
AOC-2A - POTENTIAL UST GPR ANOMOLY 1
AOC-2B - POTENTIAL UST GPR ANOMOLY 2
AOC-3 - HISTORIC ABOVEGROUND STORAGE TANK (AST)
AOC-4 - HISTORIC HYDRAULIC LIFT AREA
AOC-5 - HISTORIC UST REMOVAL AREA

RECOGNIZED ENVIRONMENTAL CONDITIONS (REC) LEGEND:
REC-1 - FORMER GASOLINE STATION AND AUTOMOBILE REPAIR GARAGE
REC-2 - FORMER NURSERY OPERATIONS
REC-3 - FORMER POTENTIAL UST's AND/OR AST's (SITE-WIDE)
REC-4 - HISTORICAL SPILL #9613901 (NOT DEPICTED)

Scale 1"=30'
0 30 60

REFERENCE
AERIAL IMAGE TAKEN FROM GOOGLE MAPS, IMAGE DATED 2019.

SESI CONSULTING ENGINEERS D.P.C.
SOILS / FOUNDATIONS
SITE DESIGN
ENVIRONMENTAL
12A MAPLE AVE. PINE BROOK, N.J. 07058 PH: 973-808-9050

dwg by: aas
chk by: DA
scale: AS NOTED
date: 11/11/2021

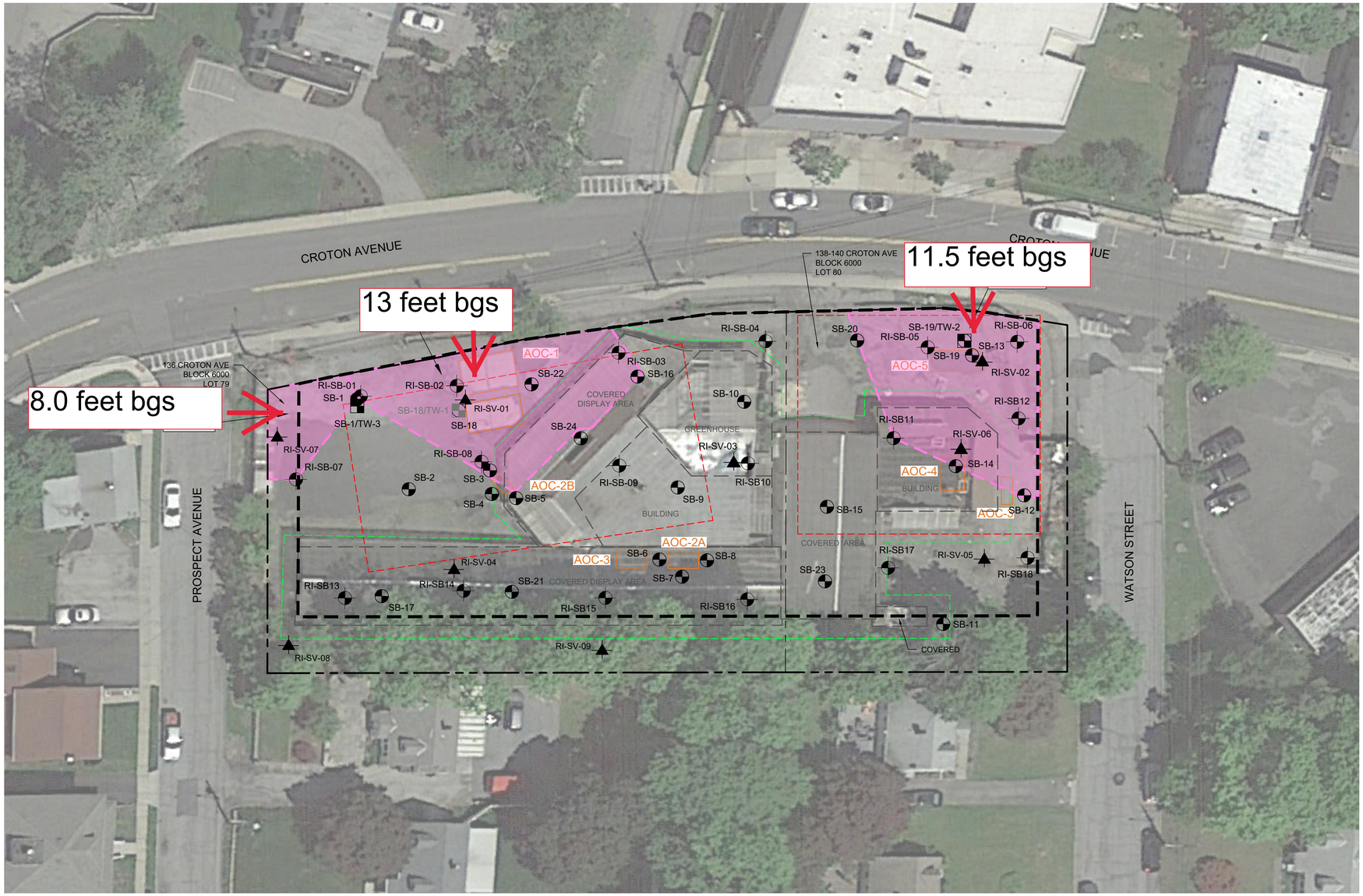
REMEDIAL INVESTIGATION WORKPLAN
136-140 CROTON AVENUE
OSSINING, NEW YORK 10652

SITE PLAN & REC/AOC LOCATION MAP

job no: 12060
drawing no:

FIG-2

N:\ACAD\12060\CAD\PHASE II\12060 – FIG-1.3 – SITE PLAN & REC-AOC LOCATION MAP.DWG 11/12/21 01:34:34PM, aas, LAYOUT:FIG-1.3



NOTE:
1. THIS PLAN IS FOR LOCATING SOIL BORINGS, MONITORING WELLS, SOIL VAPOR BORINGS AND AMBIENT AIR LOCATIONS ONLY. OTHER SITE WORK SHOWN HERE IS NOT INTENDED FOR CONSTRUCTION.
2. BUILDING LINES DEPICT FORMER FEATURES. SITE CURRENTLY VACANT.

REFERENCE
AERIAL IMAGE TAKEN FROM GOOGLE MAPS, IMAGE DATED 2019.

AREA OF CONCERN (AOC) LEGEND:
AOC-1 - HISTORIC FILLING STATION PADS AND UNDERGROUND STORAGE TANK (UST) REMOVAL AREA
AOC-2A - POTENTIAL UST GPR ANOMOLY 1
AOC-2B - POTENTIAL UST GPR ANOMOLY 2
AOC-3 - HISTORIC ABOVEGROUND STORAGE TANK (AST)
AOC-4 - HISTORIC HYDRAULIC LIFT AREA
AOC-5 - HISTORIC UST REMOVAL AREA

RECOGNIZED ENVIRONMENTAL CONDITIONS (REC) LEGEND:
REC-1 - FORMER GASOLINE STATION AND AUTOMOBILE REPAIR GARAGE
REC-2 - FORMER NURSERY OPERATIONS
REC-3 - FORMER POTENTIAL UST's AND/OR AST's (SITE-WIDE)
REC-4 - HISTORICAL SPILL #9613901 (NOT DEPICTED)

LEGEND:
- SITE BOUNDARY
- FORMER BUILDING OUTLINE
- RI-SB-01 - RI SOIL BORING NUMBER AND APPROX. LOCATION
- SB-1 - 2021 SESI PHASE II ESA BORING LOCATION & NUMBER
- SB-1/TW-3 - 2021 APPROX. LOCATION OF TEMPORARY WELL & SOIL BORING
- APPROXIMATE LOCATION OF AOC
- APPROXIMATE LOCATION OF REC-1
- APPROXIMATE LOCATION OF REC-2
- SOE BOUNDARY
- REMEDIAL EXCAVATION AREAS

Scale: 1"= 20'
0 10 20 40 60 80

rev	date	description	by

dwg by: AW
chk by: CM
scale: AS NOTED
date: 07/16/2024

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REMEDIAL ACTION WORKPLAN
136-140 CROTON AVENUE
OSSINING, NEW YORK 10652

title:
EXCAVATION REMEDIATION PLAN

job no. 12060
drawing no.
FIG-3
1 of 1