DECISION DOCUMENT

332 Fayette Manlius
Brownfield Cleanup Program
Manlius, Onondaga County
Site No. C734153
March 2024

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

DECLARATION STATEMENT - DECISION DOCUMENT

332 Fayette Manlius
Brownfield Cleanup Program
Manlius, Onondaga County
Site No. C734153
March 2024

Statement of Purpose and Basis

This document presents the remedy for the 332 Fayette Manlius site, a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the 332 Fayette Manlius site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green and sustainable remediation (GSR) 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, including maximizing the planting of trees, shrubs, and other carbon dioxide sinks in redevelopment;
- 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 GSR 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 the 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

The existing on-site building will be demolished and materials which cannot be beneficially reused on-site will be taken off-site for proper disposal in order to implement the remedy.

Excavation and off-site disposal of contaminated source areas beneath the building and two areas adjacent to the building, including:

- soils which exceed the protection of groundwater soil cleanup objectives (PGSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- underground storage tanks, hydraulic lifts and appurtenances, underground piping or other structures with a source of contamination.

All soils in the upper two feet which exceed the restricted residential soil cleanup objectives (RRSCOs) will be excavated and transported off-site for disposal to allow for placement of the site cover noted in paragraph 4 below.

In total, approximately 800 cubic yards of contaminated soil will be excavated and transported off-site for disposal. Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that soil clean objectives (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 DEC, submit the sample results, and in consultation with DEC, 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.

3. Backfill

On-site soil which does not exceed the above excavation criteria may be used below the cover system described in paragraph 4 to backfill the excavation. If additional backfill is needed to complete backfilling of excavations or to meet design grades at the site, clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought to the site.

4. Cover System

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

5. In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) will be implemented to treat contaminants in groundwater. A chemical oxidant will be injected into the subsurface via wells to destroy the contaminants in an approximately 3300 square foot area located in the southeastern portion of the site where gasoline-related compounds were detected at concentration exceeding NYS Ambient Water Quality Standards and Guidance Values (groundwater SCGs). The treatment depth within the injection area will be from approximately 5 to 16 feet below ground surface (bgs). Final injections details will be determined during the remedial design.

Monitoring will be conducted for contaminants of concern upgradient and downgradient of the treatment zone. The treatment zone will be monitored for dissolved oxygen and oxidation-reduction potential.

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.

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

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use, commercial use, 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 is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
   - Institutional Controls: The Environmental Easement discussed in paragraph 6 above.
   - Engineering Controls: The Cover System discussed in paragraph 4 above.

   This plan includes, but may not be limited to:
   - an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
   - descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
   - a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
   - a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in paragraph 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable SCOs;
   - provisions for the management and inspection of the identified engineering controls;
   - maintaining site access controls and Department notification; and
   - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

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

Declaration

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

March 18, 2024

Date

Jason Pelton

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Date: 2024.03.18 07:51:19 -04'00'

Jason Pelton, P.G., Director
Remedial Bureau D

DECISION DOCUMENT

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Manlius, Onondaga County
Site No. C734153
March 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 repository:

DECInfo Locator - Web Application
https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C734153

Manlius Library
Attn: Jennifer Milligan
One Arkie Albanese Ave.
Manlius, NY 13104
Phone: (315) 682-6400

Receive Site Citizen Participation Information By Email

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

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The 332 Fayette Manlius site (site) is a 2.248-acre portion of a larger tax parcel in a suburban location on Fayette Street in the Village of Manlius, Onondaga County. The northern extent of the site is located at the intersection of Fayette Street and Highbridge Road; the Southern extent is adjacent to a small commercial building and vacant lot; and residential property and a vacant grass field are at the site's eastern border. The western site border is defined by Fayette Street. Perry Springs Brook runs along the north-northeastern border of the site. The site is zoned as a Planned Unit Development (PUD) and the future mixed commercial and residential use meets overall community goals.

Site Features: The site is relatively flat and includes the former Express Auto Sales commercial building which is approximately 17,000 square feet and one story in height. The site is unoccupied, and the building is currently vacant. A large parking lot is present to the northwest of the former Express Sales building. Much of the northern portion of the site is paved and a small creek (Perry Springs Brook) is present in the northeastern portion of the site behind some light foliage.

Current Zoning and Land Use: The site is within a residential zoning district and includes a current site property class as medium retail. The properties to the southeast, southwest, and northwest are all used for commercial. Properties to the northeast are residential.

Past Use of the Site: The site has been used as an auto service garage for auto sales/service since 1929 until it ceased operations in 2009. As part of the operations, two gasoline USTs were kept on-site. Since 2009, various small retail businesses have leased site space for short durations since the auto dealership closing.

Sources of contamination to environmental media including soil and groundwater at the site include past USTs used to store petroleum products, underground pits and oil/water separators, and sub-grade hydraulic lifts in the former auto repair garage.

Site Geology and Hydrogeology: The site sits approximately 599 feet about above mean sea level. A small creek, Perry Springs Brook, is present near the east-northeast border of the site parcel. A small pond that is part of Perry Springs Park and Fish Hatchery is located about 825 feet northeast of the center of the site. At its closest point, Limestone Creek is about 2,000 feet west of the center of the site. The majority of the site is paved with an asphalt/gravel subbase. A medium to fine fill material was encountered to a depth of 2.5 feet bgs with native soil below. Bedrock was not

encountered at the soil depths sampled down to 16 feet bgs. The depth to groundwater ranges from three to seven feet below ground surface and generally flows toward the south/southeast.

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

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

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Applicant does not have an obligation to address off-site contamination. However, NYSDEC, 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 any identified waste. 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 may 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:

- air
- groundwater
- surface water
- soil
- sediment
- 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. 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:

benzo(b)fluoranthene
benzo(k)fluoranthene
chrysene
indeno(1,2,3-cd)pyrene
naphthalene
chlorobenzene
benzene
ethylbenzene
isopropylbenzene
toluene
arsenic
cadmium
mercury

The contaminants of concern exceed the applicable SCGs for:

- groundwater
- soil

6.2: Interim Remedial Measures

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

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

6.3: Summary of Environmental Assessment

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

Nature and Extent of Contamination:

Soil, groundwater, sediment, and surface water 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, subslab soil vapor, and indoor air was analyzed for VOCs. Based upon investigations conducted to date, the primary contaminants of concern include SVOCs and metals in soil and VOCs, SVOCs and metals in groundwater.

Soils: SVOCs detected at concentrations exceeding the protection of groundwater soil cleanup objectives (PGSCOs) occurred in one subsurface soil sample and included benzo(b)fluoranthene at a maximum concentration of 9.2 parts per million (ppm) compared to the PGSCO of 1.7 ppm, benzo(k)fluoranthene at a maximum concentration of 2.9 ppm (PGSCO of 1.7 ppm), and chrysene at a maximum concentration of 7.2 ppm (PGSCO of 1 ppm).

One SVOC, indeno(1,2,3-cd) pyrene, was detected at a concentration exceeding the RRSCO in one surface soil sample at a maximum concentration of 0.64 ppm (RRSCO of 0.5ppm).

A few metals exceeded RRSCOs in surface soil, each exceedance was isolated to one occurrence for each constituent. These include arsenic at a concentration of 19.3 ppm (RRSCO of 16 ppm), cadmium at a concentration of 4.54 ppm (RRSCO of 4.3 ppm), and mercury at a concentration of 1.06 ppm (RRSCO of 0.81 ppm).

There were no VOCs nor PCBs or pesticides detected in soil at concentrations exceeding applicable SCOs, and PFOA and PFOS were not detected above the laboratory reporting limit.

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

Groundwater: Groundwater sample results were compared to the NYS Ambient Water Quality Standards and Guidance Values (groundwater SCGs). VOCs exceeding groundwater SCGs include chlorobenzene at a maximum concentration of 46 parts per billion (ppb), benzene at a

maximum concentration of 13 ppb, ethylbenzene at a maximum concentration of 11 ppb, toluene at a maximum concentration of 9 ppb, and isopropylbenzene at a maximum concentration of 58 ppb. The groundwater SCG for benzene is 1 ppb. The groundwater SCG for the other VOCs is 5 ppb.

SVOCs exceeding groundwater SCGs occurred in only one monitoring well and include naphthalene at a maximum concentration of 45 ppb, benzo(b)fluoranthene at a maximum concentration of 0.10 ppb (0.002 ppb), benzo(k)fluoranthene at a maximum concentration of 0.03 ppb (0.002 ppb), chrysene at a maximum concentration of 0.15 ppb (0.002 ppb), indeno(1,2,3-cd)pyrene at a maximum concentration of 0.05 ppb (0.002 ppb). The groundwater SCG for naphthalene is 10 ppb. The groundwater SCG for the other SVOCs is 0.002 ppb.

Metals commonly associated with hard water (e.g. iron, magnesium, manganese, and sodium) were reported at concentrations exceeding groundwater SCGs. Barium was also detected at a maximum concentration of 7519 ppb (SCG of 1000 ppb). Metals exceedances in groundwater do not appear to be attributable to site related activities.

Perflurorooctanoic acid (PFOA) was detected at a maximum concentration of 9.37 parts per trillion (ppt) (SCG of 6.7 ppt) and perfluorooctanesulfonic acid (PFOS) was detected at a maximum concentration of 9.28 ppt (SCG of 2.7 ppt).

No pesticides or PCBs exceeded groundwater SCGs.

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

Sediment: No sediment samples had detections of contaminants of concern above New York Technical Operation and Guidance Series (TOGS) 5.1.9 for sediment and dredged material.

Surface Water: The upstream surface water sample reported exceedances of four SVOCs above the New York State Surface Water Standards provided in TOGS 1.1.1. The reported values for these compounds were low level detections above the method detection limit but below the reporting limit. The other two sampled locations, including the downstream location, did not have any reported exceedances.

Data does not indicate off-site impacts in surface water related to the site.

Soil Vapor and Indoor Air: No chlorinated solvents were detected in the soil vapor and sub-slab vapor samples. Various petroleum VOCs were detected in soil vapor and sub-slab vapor, most notably 2,2,4 trimethylpentane up to 203 micrograms per cubic meter (µg/m³). Carbon tetrachloride was detected in indoor air at concentrations up to 0.547 µg/m³ and in outdoor air at concentrations up to 0.503 µg/m³. Petroleum-related VOCs were also detected in soil vapor, most notably ethanol up to 9.42 µg/m³.

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

6.4: Summary of Human Exposure Pathways

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

The site is vacant and access is restricted by a fence. However, people who enter may come into contact with contaminants in soil by walking on the site, digging, or otherwise disturbing the soil. People are not drinking 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 structures 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 structures, is referred to as soil vapor intrusion (SVI). Because the site is vacant, the inhalation of site-related contaminants due to SVI does not represent a current concern. However, the potential exists for inhalation of site contaminants due to SVI for any future on-site development and/or occupancy. Environmental sampling indicates that SVI is not likely a concern for off-site structures from site contaminants.

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.

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

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

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

The selected remedy is referred to as the Excavation with Groundwater Treatment and Cover System remedy.

The elements of the selected remedy, as shown in Figures 2 and 3, are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green and sustainable remediation (GSR) 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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- Maximizing habitat value and creating habitat when possible, including maximizing the planting of trees, shrubs, and other carbon dioxide sinks in redevelopment;
- 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 GSR 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 the 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.

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2. Excavation

The existing on-site building will be demolished and materials which cannot be beneficially reused on-site will be taken off-site for proper disposal in order to implement the remedy.

Excavation and off-site disposal of contaminated source areas beneath the building and two areas adjacent to the building, including:

- soils which exceed the protection of groundwater soil cleanup objectives (PGSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- underground storage tanks, hydraulic lifts and appurtenances, underground piping or other structures with a source of contamination.

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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.

3. Backfill

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5. In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) will be implemented to treat contaminants in groundwater. A chemical oxidant will be injected into the subsurface via wells to destroy the contaminants in an approximately 3300 square foot area located in the southeastern portion of the site where gasoline-related compounds were detected at concentration exceeding groundwater SCGs. The treatment depth within the injection area will be from approximately 5 to 16 feet below ground surface (bgs). Final injections details will be determined during the remedial design.

Monitoring will be conducted for contaminants of concern upgradient and downgradient of the treatment zone. The treatment zone will be monitored for dissolved oxygen and oxidation-reduction potential.

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

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

periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use, commercial use, 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

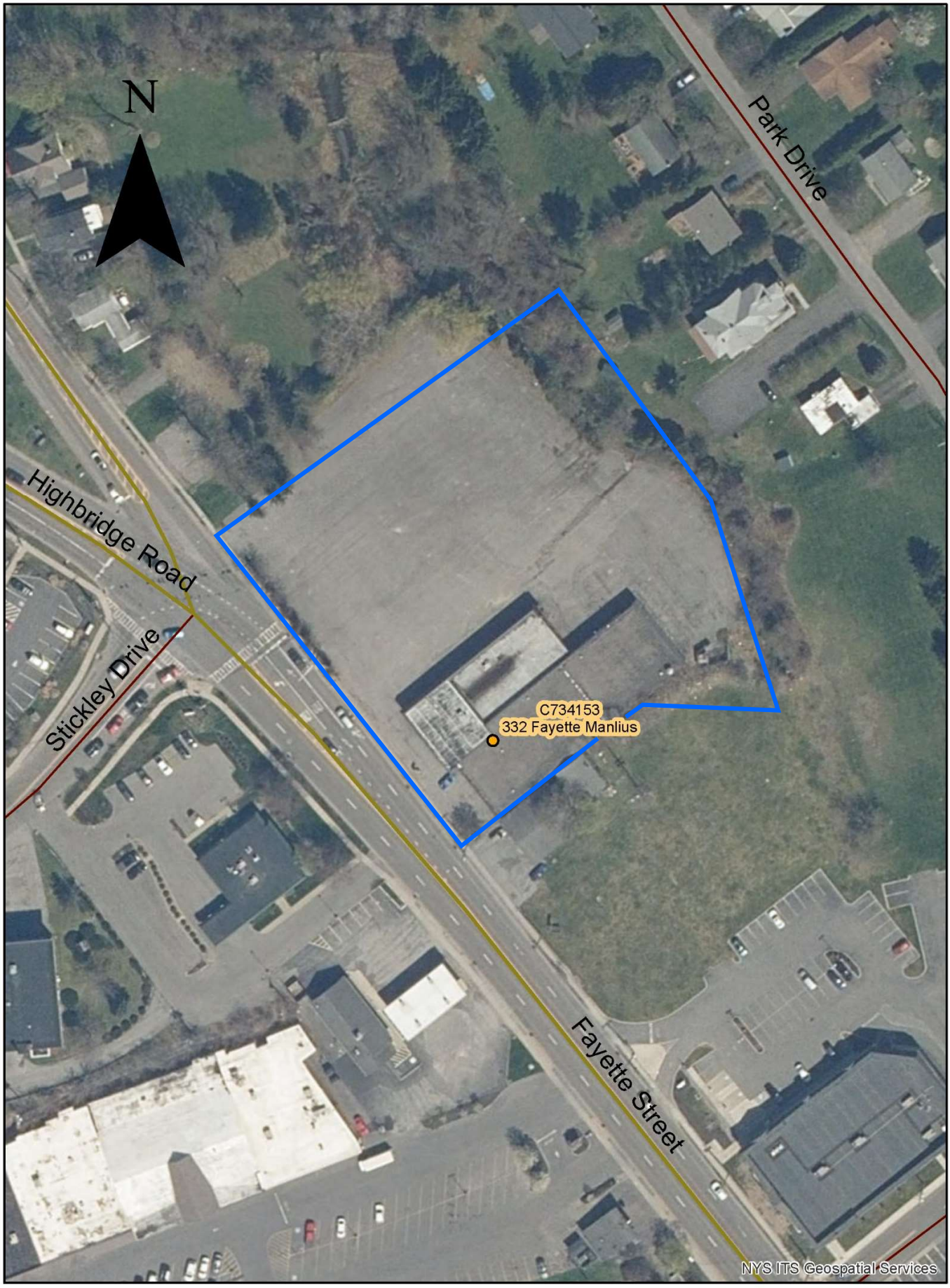
A Site Management Plan is required, which includes the following:

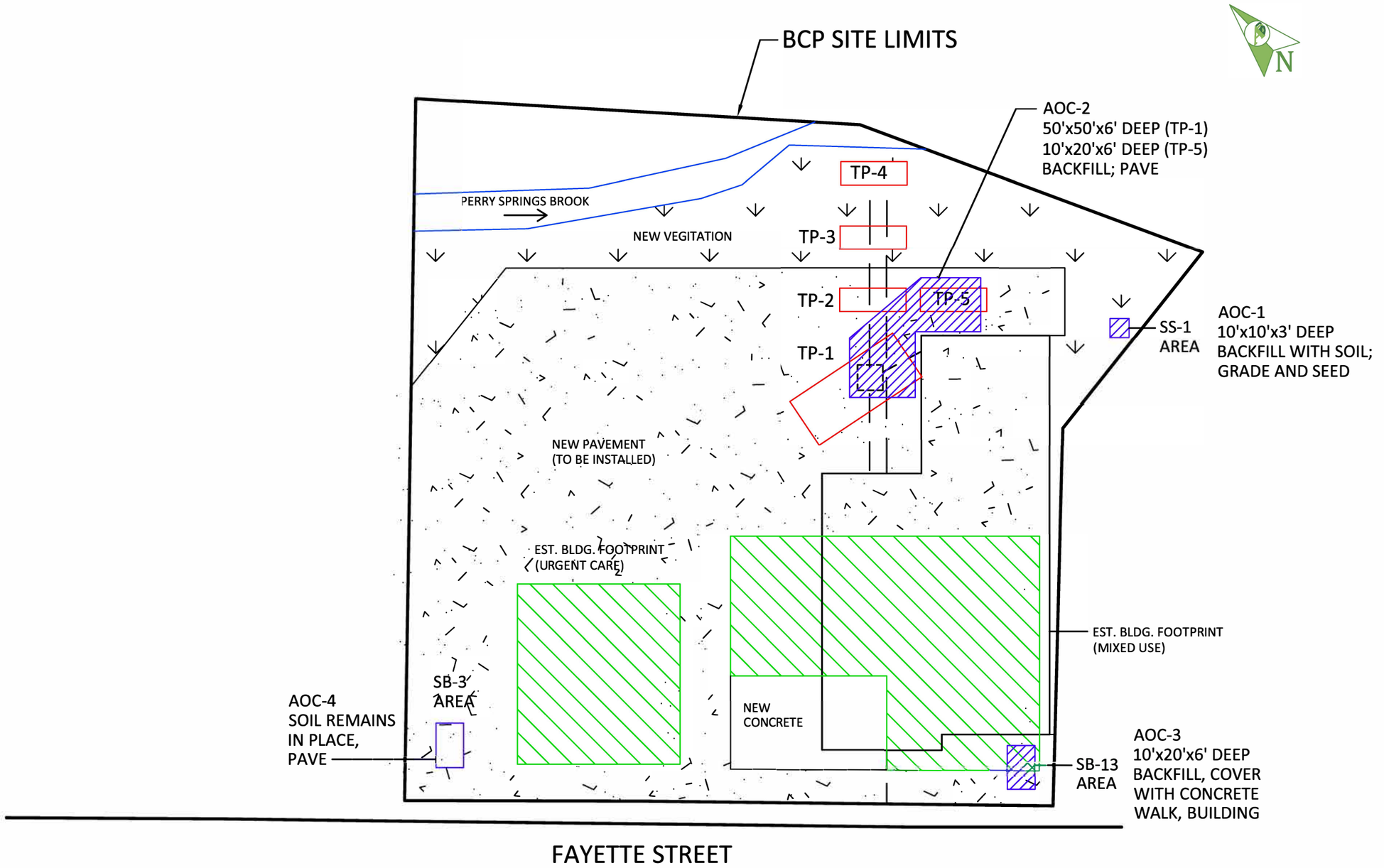
a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
   - Institutional Controls: The Environmental Easement discussed in paragraph 6 above.
   - Engineering Controls: The Cover System discussed in paragraph 4 above.

   This plan includes, but may not be limited to:
   - an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
   - descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
   - a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
   - a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in paragraph 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable SCOs;
   - provisions for the management and inspection of the identified engineering controls;
   - maintaining site access controls and Department notification; and
   - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

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

Figure 1: 332 Fayette Manlius Site Location





Ambient Environmental, Inc.
Building Science and EHS Solutions
828 Washington Avenue, Albany, NY 12203
PH: 518.482.0704 FAX:518.482.0750
www.ambient-env.com

EXCAVATION TOTAL:
AOC-1 = 11 CY
AOC-2 = 600 CY
AOC-3 = 45 CY
656 CY
EST. (984 TONS)

LEGEND

- TP-X — TEST PIT LOCATION
- GPRS BURIED FEATURE
- GPRS DETECTION
- ESTIMATED AREA OF EXCAVATION (EXTERIOR)
- ESTIMATED OUTLINE OF NEW BUILDINGS (TO BE CONSTRUCTED)
- AREA TO BE COVERED WITH GRASS/VEGITATION
- AREA TO BE PAVED

REVISIONS

PROJECT LOCATION

FAYETTE MANLIUS, LLC
332 Fayette Manlius BCP
Manlius, NY

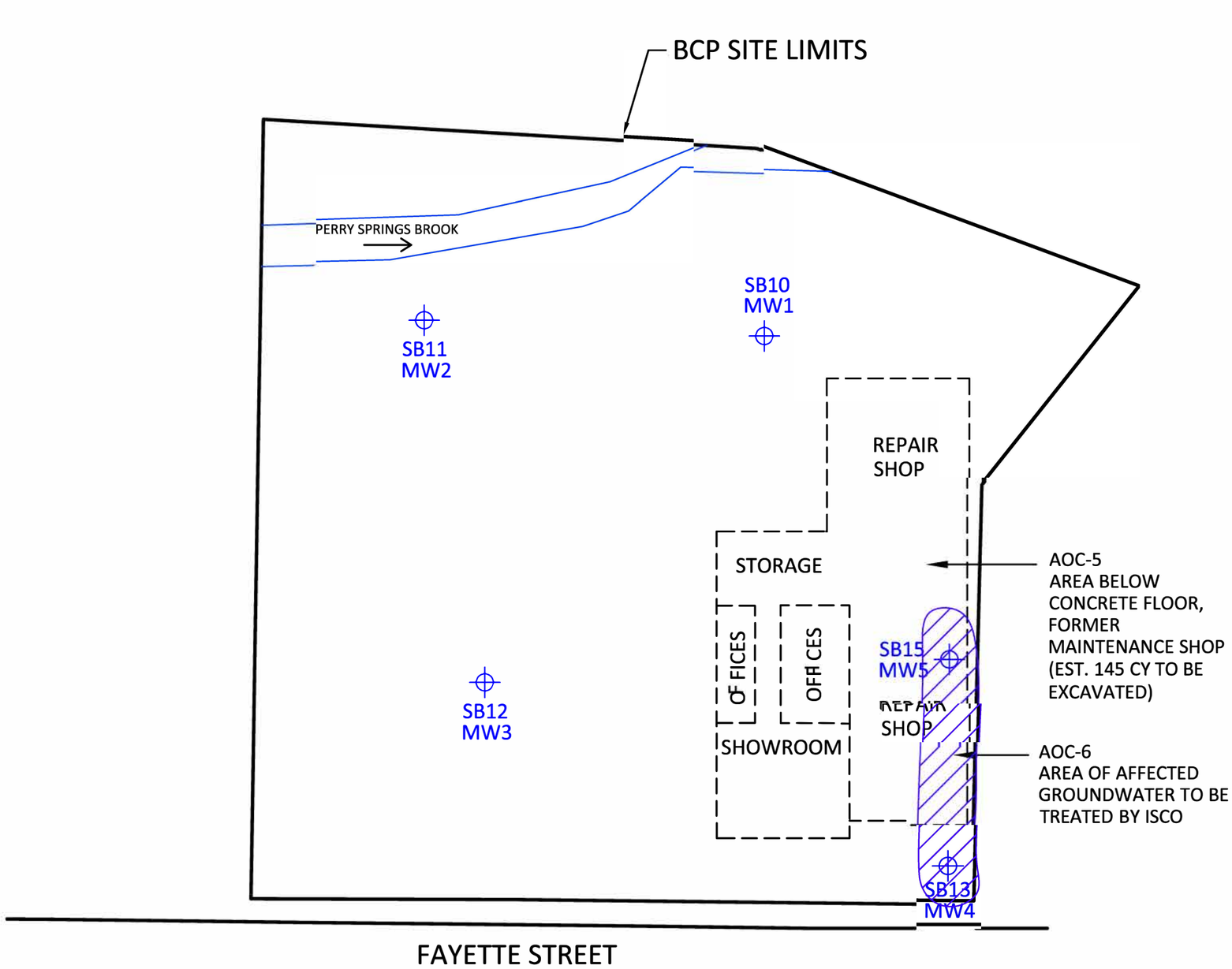
DRAWING TITLE

ESTIMATED EXCAVATION AREAS: EXTERIOR; COVER SYSTEM

DATE: 9/15/2023	SCALE: 1"=50'
PROJECT NO.	210603ENVA
DRAWN BY	KAJ
CHECKED BY	LPM

DWG. NO.

Figure 2



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LEGEND

REVISIONS

PROJECT LOCATION

FAYETTE MANLIUS, LLC
332 Fayette Manlius BCP
Manlius, NY

DRAWING TITLE

INTERIOR AOC'S
INCLUDING
GROUNDWATER

DATE: 8/17/2023	SCALE: 1"=50'
PROJECT NO.	210603ENVA
DRAWN BY	KAJ
CHECKED BY	LPM

DWG. NO.

Figure 3