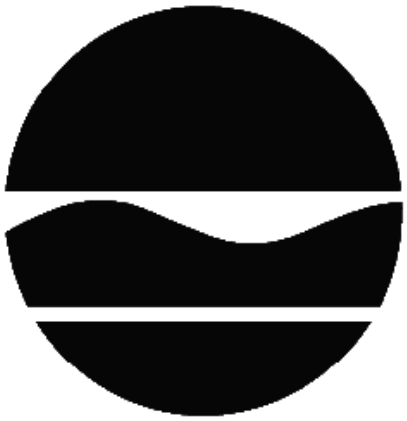
DECISION DOCUMENT

RPC - Core Area
Brownfield Cleanup Program
Orangetown, Rockland County
Site No. C344080
June 2020



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

DECLARATION STATEMENT - DECISION DOCUMENT

RPC - Core Area
Brownfield Cleanup Program
Orangetown, Rockland County
Site No. C344080
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Statement of Purpose and Basis

This document presents the remedy for the RPC - Core Area 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 RPC - Core Area site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

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

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

- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 15-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

2. Excavation

Excavation and off-site disposal of soil that exceeds soil cleanup objectives for commercial use, as defined by 6 NYCRR Part 375-6.8 and sediment that exceeds Class A sediment guidance values, from the northern pond area.

3. Backfill

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site. Restoration of the pond area will include backfilling with soil meeting Class A sediment screening levels, acceptable organic content and particle size gradation, and seeding/planting with native wetlands species.

4. Cover System

A site cover will be required to allow for commercial use of the site in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used it will be a minimum of one foot 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, building slabs, and crushed stone. Site-generated recycled concrete aggregate (RCA) may be used as a substitution for soil in the site cover at depths of 6-12" below final grade if analytical data demonstrates that the RCA meets commercial SCOs. The site cover will not be installed over certain portions of the site to the south of Convent Road, where existing soils already meet the commercial SCOs.

5. Institutional Control

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

- require the remedial party or site owner to complete and submit to 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 commercial 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 Department approved Site Management Plan.

6. Site Management Plan

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

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in paragraph 5 above.

Engineering Controls: The cover system discussed in paragraph 4 above.

This Site Management Plan (SMP) 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 the newly constructed buildings and for any other buildings constructed in the future 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 above will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable soil cleanup objectives (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 and soil vapor to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control plan discussed above.

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

- procedures for operating and maintaining the remedy;
- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting; and
- providing the Department 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 Department guidance, as appropriate. The remedy is protective of public health and the environment.

06/01/2020

Date

Janet Brown, Director
Remedial Bureau C

DECISION DOCUMENT

RPC - Core Area
Orangetown, Rockland County
Site No. C344080
June 2020

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

Orangeburg Library
20 South Greenbush Road
Orangeburg, NY 10962
Phone: 845-359-2244

Select documents may also be found at:

DEC Info Locator: https://www.dec.ny.gov/data/DecDocs/C344080/

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 RPC Core Area site is an approximately 61-acre site located in a suburban area in the Hamlet of Orangeburg, Town of Orangetown, approximately 1,300 feet north of Old Orangeburg Road. The site is bounded by Convent Road to the north, Oak Street to the south, First Avenue to the east and Third Avenue to the west. The site lies approximately 1,200 feet east of Lake Tappan, a reservoir used for drinking water. The site is identified on the Orangetown Tax Map as Section 73.08, Block 1, Lot 1.

Site Features: The portion of the former Rockland Psychiatric Center (RPC) which comprises the site was referred to as the Core Area. The site was, until recently, occupied by 32 abandoned and derelict buildings containing over 1.1 million square feet, which were distributed across the 61-acre site except for the northwest corner, which contained no buildings. The site has been redeveloped with two structures for JP Morgan Chase – a data center and a visitors' center. Use of these structures was approved by NYSDEC in early 2020. The site is now covered by new buildings, paved parking and walkways, surrounding vegetated areas, as well as a natural area located at the north end of the site. A small drainage swale, which collects storm water runoff, is located in the natural area and is surrounded by woods.

Current Zoning and Land Use: The site is zoned specifically for the current commercial use as a data center. To the north of Convent Road are commercial establishments and residential housing. The Broadacres Golf Club, the Blaisdell Addiction Treatment Center and the current Rockland Children's Psychiatric Center are located east of the site. To the south and southwest, respectively, are the Nathan Kline Institute and recreational fields for the Town of Orangetown. To the west are buildings that supported the former RPC such as the powerhouse, wastewater treatment building, service buildings, and a fire station, followed by decommissioned landfills, forested areas and Lake Tappan. To the northwest is the former Children's Psychiatric Center. The nearest residential properties are adjacent to the site to the north, just across Convent Road.

Past Use of the Site: The site was formerly part of the approximately 600-acre Rockland Psychiatric Center (RPC) which began operations in the early 1930s. The RPC operated as a self-sustaining facility, providing its own power, water and wastewater treatment for many years. Additionally, the RPC farmed to grow its own food, manufactured furniture and other items for sale and had its own recreation facilities. The facility was decommissioned by the New York State Office of Mental Health in the early 1990s.

Site Geology and Hydrogeology: The uppermost geologic unit beneath the site is identified as glacial outwash consisting of a dark reddish-brown, fine to medium sand with varying amounts of silt and traces of clay and gravel. The outwash, reported to contain beds of gravel or cobbles, ranges from approximately 15 to 30 feet in thickness, with increasing thickness from east to west. The thickness of the outwash generally decreases with higher elevations. The glacial outwash represents the shallow overburden aquifer at the site.

Underlying the outwash is a glacial till characterized by intervals of dark reddish-brown sandy silt, gravel, and cobbles. The till varies in thickness from approximately 10 to 20 feet, with generally decreasing thickness at higher elevations. The glacial till represents the deep overburden aquifer at the site. Depth to bedrock is approximately 25 feet below ground surface (bgs) in the northern portion of the site and approximately 40 feet bgs in the southern portion of the site.

Surface water and overburden groundwater flow directions are toward west and the southwest respectively, and bedrock flow direction is reportedly south-southeast. Groundwater depth on site was found to range from approximately 1 to 20 feet below the ground surface. Site topography increased by more than 50 feet moving southwest to northeast prior to development. Extensive regrading of the site as part of the redevelopment has resulted in a more level ground surface throughout the site.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, an alternative that restricts the use of the site to commercial use (which allows for industrial use) as described in Part 375-1.8(g) was evaluated in addition to an alternative which would allow for unrestricted use of the site.

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

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Applicant does not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

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

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

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

The analytical data collected on this site includes data for:

- groundwater
- surface water
- soil
- sediment
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants

of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

arsenic	benzo(g,h,i)perylene
barium	chrysene
copper	dibenzo(a,h)anthracene
lead	fluoranthene
mercury	indeno(1,2,3-CD)pyrene
benzo(a)anthracene	phenanthrene
benzo(a)pyrene	pyrene
benzo(b)fluoranthene	trichloroethene (TCE)

The contaminant(s) of concern exceed the applicable SCGs for:

- soil
- sediment
- groundwater
- surface water
- soil vapor

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.

Building Demolition and Surface Soil Excavation/Disposal

All existing on-site buildings (including basement structures, tunnels and slabs) were demolished. Preparation of buildings and tunnels for demolition included:

- removal of asbestos containing materials in buildings and underground tunnels;
- removal of loose interior and exterior paint;
- removal of PCB containing window caulk; and
- removal of floor drains and associated piping including petroleum or PCB impacted soils or concrete identified adjacent to floor drain areas.

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) was brought in to complete the backfilling of the excavations at the building demolition locations. Site-generated recycled concrete aggregate (RCA) or site soils including the original foundation backfill material were also used as backfill following sampling and analysis, in accordance with a site-specific Beneficial Use Determination (BUD). The existing on-site buildings and tunnels were predominantly constructed of concrete. The buildings and tunnels were demolished, and materials which couldn't be beneficially reused on-site were taken off-site for recycling or proper

disposal. Storm water features within the site boundary were decommissioned as part of site regrading under the IRM.

Excavation and off-site disposal of the upper one foot of soil was performed over the entire footprint of the site except for the natural areas along the northern border and northwest corner to remove impacted surface soils. Approximately 75,000 cubic yards of contaminated soil was removed from the site during the IRM. Remaining exposed soils were covered with mulch until the excavated areas will be covered with soil as part of the final remedy. Existing asphalt and concrete roads, sidewalks and parking areas were also removed. The asphalt was recycled off-site, and the concrete was processed into recycled concrete aggregate (RCA) and used on-site for structural fill. A Community Air Monitoring Program for particulates and volatile organic carbon compounds and storm water pollution prevention measures were implemented during the IRM.

The IRM work will be fully documented in the Final Engineering Report.

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), and pesticides. Groundwater was additionally sampled for per- and polyfluoroalkyl substances (PFASs), and soil vapor was sampled for VOCs. Based upon investigations conducted to date, the primary site-related contaminants of concern include SVOCs and metals in soil and sediment, SVOCs in groundwater and surface water, and VOCs in soil vapor.

Soil: Surface (0 to 2 inches) and subsurface soil samples were collected and analyzed during the RI at locations throughout the site. Subsurface soil samples were collected at depths down to 20 feet to fully define nature and extent of contamination in soil. Both surface and subsurface soil samples contained metals, including arsenic, barium, copper, lead, and mercury above commercial soil cleanup objectives (SCOs) at some locations. Five SVOCs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene were also detected at concentrations above their respective commercial SCOs in surface and subsurface soil. Elevated levels of metals and SVOCs were primarily encountered in surface soils and near surface soils (0 to 1 feet) near former buildings. The highest concentration of an SVOC detected in soil was benzo(b)fluoranthene at 180 parts per million (ppm) compared to a commercial SCO of 5.6 ppm. The highest concentration of a metal detected in soil was lead at 5,090 ppm compared to the commercial SCO of 1,000 ppm. The concentrations and distribution of detected SVOCs [all polycyclic aromatic hydrocarbon (PAH) compounds] suggest that they are associated with historic fill material observed during sampling.

Metals were typically encountered in soils near former buildings. SVOC and metals concentrations in exceedance of commercial SCOs in soil were encountered throughout the site with the exception of certain wooded portions of the site south of Covenant Road. There is no indication that site related soil contamination extends off-site. The site is surrounded on all sides by sidewalks and roadways.

Groundwater: Groundwater samples were collected from monitoring wells installed throughout the site. The SVOC benzo(a)anthracene was detected in one monitoring well (MW-7) in the northwest corner of the site at a concentration of 0.02 parts per billion (ppb) vs the standard of 0.002 ppb. Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were reported in groundwater at concentrations of up to 64.6 and 27.2 parts per trillion (ppt), respectively, exceeding their respective 10 ppt screening levels. No other individual PFAS exceeded the 100 ppt screening level. The total concentration of PFAS, including PFOA and PFOS, were reported at concentrations of up to 121 ppt, below the 500 ppt screening level for total PFAS in groundwater. 1,4-dioxane was reported at concentrations of up to 2.35 parts per billion (ppb), exceeding the screening level of 1 ppb in groundwater. Similar concentrations of PFAS were detected in monitoring wells at both the upgradient and downgradient boundaries of the site indicating that the site is not the source of PFAS in the site groundwater.

Sediment: Sediment samples were collected from two locations within the site's northern water feature (stone and mortar-lined structure). Sediment sample SED-8 exceeded the class A freshwater sediment guidance values (SGVs) for copper, lead and mercury. Sediment sample SED-9 exceeded standards [the lower of commercial SCOs (CSCOs) and class A freshwater sediment guidance values (SGVs)] for several SVOCs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenzo(a,h)anthracene, fluoranthene, and indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, as well the metals copper and lead. SVOC concentrations above SGVs ranged from 24 to 81 ppm. The highest concentration of an individual SVOC at this location was fluoranthene at a concentration of 81 ppm compared to its SGV of 14 ppm. Copper was detected at a maximum concentration of 187 ppm compared to its SGV of 32 ppm, and lead was detected at a maximum concentration of 568 ppm compared to its SGV of 36 ppm. There is no indication that contaminated sediment extends off-site. The northern drainage feature drains off-site through a subsurface culvert. An off-site sediment sample collected near the outfall of this culvert did not contain any contaminants of concern related to the site. All other storm water features within the site boundary were decommissioned as part of site regrading under the IRM.

Surface Water: One surface water sample was collected from within the site's northern drainage feature. The surface water sample (SW-4) contained concentrations of the SVOCs benzo(a)anthracene (0.02 parts per billion, or ppb) and benzo(b)fluoranthene (0.03 ppb) above surface water standards (0.002) ppb for both benzo(a)anthracene and benzo(b)fluoranthene. An off-site surface water sample collected down gradient of the site's northern drainage feature exhibited similar concentrations of SVOCs in surface water.

Soil Vapor: Soil vapor samples were collected at 37 locations throughout the site. The VOC trichloroethene (TCE) was detected at elevated levels at two locations. TCE was detected at a concentration of 2.36 micrograms per cubic meter (ug/m^3) at a location near the former

Building 4. TCE was detected at a concentration of 6.13 ug/m^3 at a location near the former Building 38. The results of on-site soil vapor and environmental sampling, including soil vapor intrusion sampling in the newly constructed data center and visitor's center, indicate that further evaluation of soil vapor intrusion for on-site buildings is warranted.

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.*

People may contact contaminated soils if they dig below the surface. Contaminated groundwater at the site is not used for drinking water purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Though unlikely, people who access the on-site drainage feature could come in contact with contaminated sediments and surface water. Volatile organic compounds in soil vapor (air spaces within the soil) may move into overlying 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. There are no current soil vapor intrusion concerns for on-site buildings since sampling did not identify any indoor air impacts, however, the potential for soil vapor intrusion to occur will be reevaluated for existing buildings and evaluated for any new buildings developed on-site in the future. Sampling indicates soil vapor intrusion is not a concern for off-site buildings.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.
- 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.

Surface Water

RAOs for Public Health Protection

- Prevent ingestion of water impacted by contaminants.

Sediment

RAOs for Public Health Protection

- Prevent direct contact with contaminated sediments.

RAOs for Environmental Protection

- Prevent releases of contaminant(s) from sediments that would result in surface water levels in excess of (ambient water quality criteria).
- Prevent impacts to biota from ingestion/direct contact with sediments causing toxicity or impacts from bioaccumulation through the marine or aquatic food chain.

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, Soil Cover, Monitoring and Institutional Controls remedy.

The elements of the selected remedy, as shown in Figure 2, 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; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 15-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

2. Excavation

Excavation and off-site disposal of soil that exceeds soil cleanup objectives for commercial use, as defined by 6 NYCRR Part 375-6.8 and sediment that exceeds Class A sediment guidance values, from the northern pond area.

3. Backfill

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site. Restoration of the pond area will include backfilling with soil meeting Class A sediment screening levels, acceptable organic content and particle size gradation, and seeding/planting with native wetlands species.

4. Cover System

A site cover will be required to allow for commercial use of the site in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is to be used it will be a minimum of one foot 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, building slabs, and crushed stone. Site-generated recycled concrete aggregate (RCA) may be used as a substitution for soil in the site cover at depths of 6-12" below final grade if analytical data demonstrates that the RCA meets commercial SCOs. The site cover will not be installed over certain portions of the site to the south of Convent Road, where existing soils already meet the commercial SCOs.

5. Institutional Control

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

- require the remedial party or site owner to complete and submit to 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 commercial 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 Department approved Site Management Plan.

6. Site Management Plan

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

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in paragraph 5 above.

Engineering Controls: The cover system discussed in paragraph 4 above.

This Site Management Plan (SMP) 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 the newly constructed buildings and for any other buildings constructed in the future 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 above will be placed in any areas where the

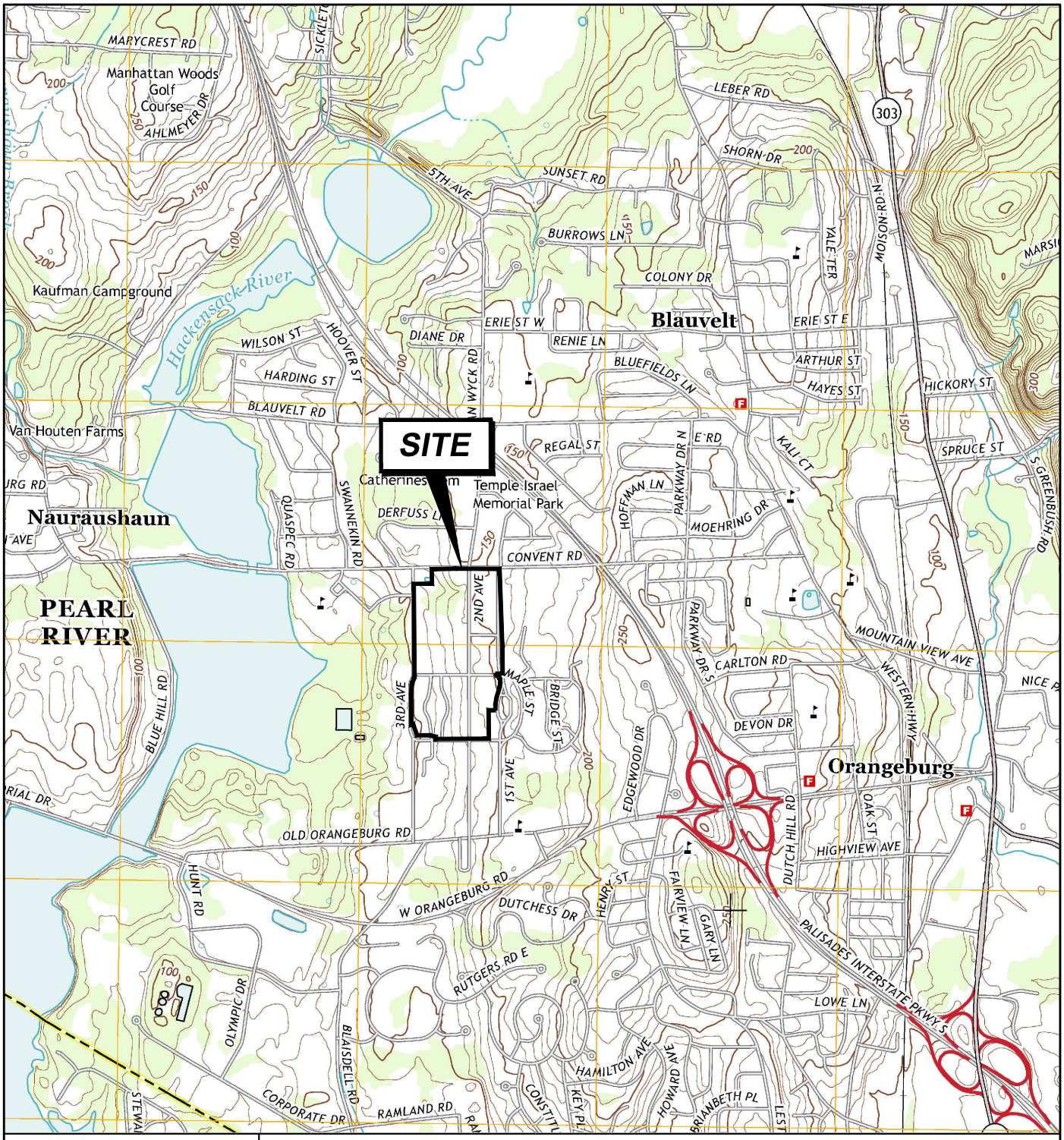
upper one foot of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs)provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification 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 and soil vapor to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control plan discussed above.

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

- procedures for operating and maintaining the remedy;
- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting; and
- providing the Department access to the site and O&M records.



NEW YORK

QUADRANGLE LOCATION

SOURCE:
USGS TOPOGRAPHIC MAP: NYACK, NY-NJ (2013).
CONTOUR INTERVAL 10 FT., NAVD-1988, ORIGINAL
SCALE 1:24,000 (1" = 2,000 FT.).

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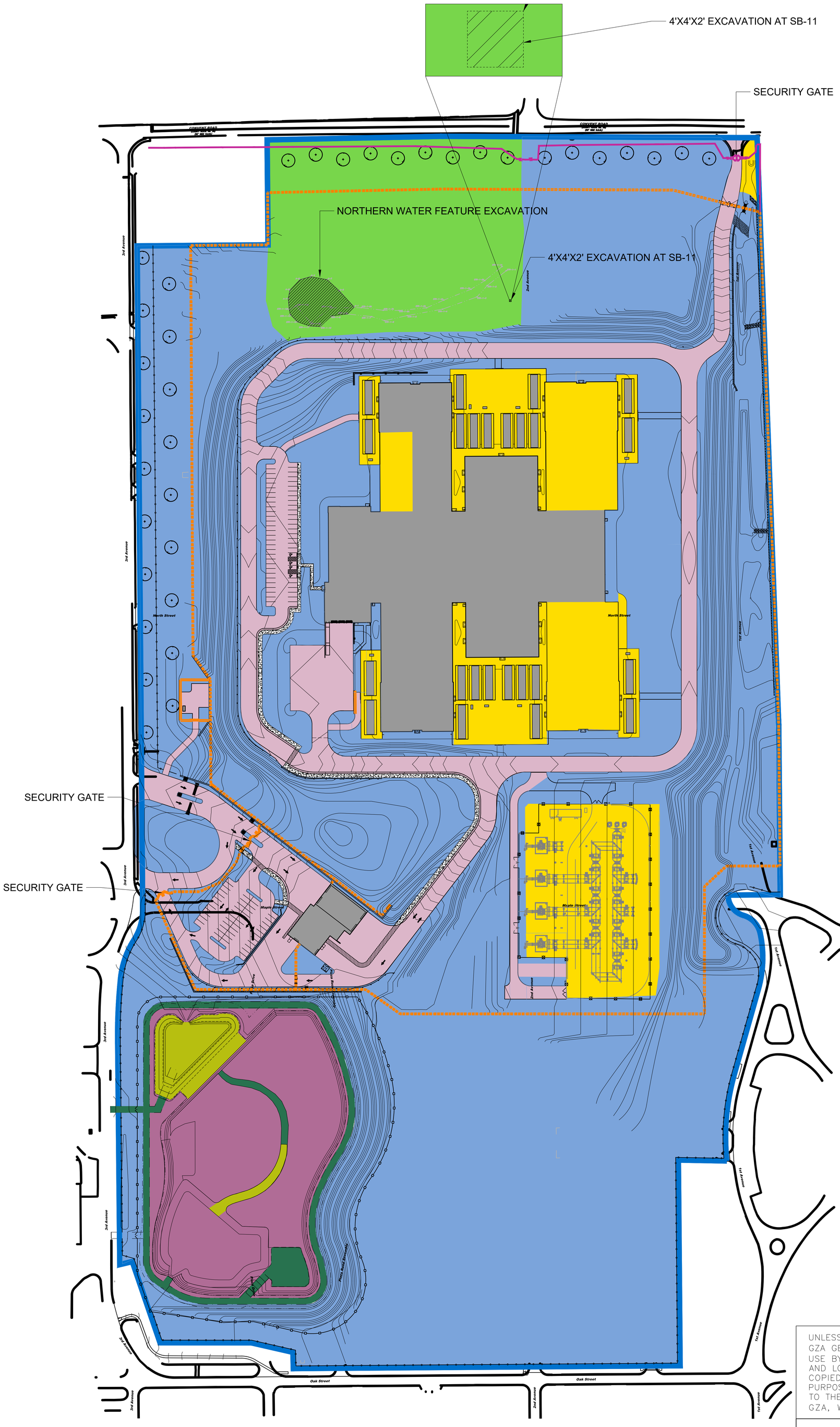
140 OLD ORANGEBURG ROAD
ORANGETOWN, NEW YORK

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
JP MORGAN CHASE BANK, NA

SITE LOCATION PLAN

PROJ MGR: MS	REVIEWED BY: ZS	CHECKED BY: ZS	FIGURE
DESIGNED BY: ZS	DRAWN BY: MT	SCALE: 1" = 2,000'	1
DATE: JUNE 2018	PROJECT NO. 12.0076555.00	REVISION NO.	SHEET NO.



LEGEND

- CONCRETE COVER SYSTEM (CURB)
- CONCRETE COVER SYSTEM (BUILDING)
- 1 FOOT CLEAN FILL COVER SYSTEM
- 1 FOOT CLEAN STONE COVER SYSTEM
- ASPHALT
- 6 INCHES OF 3-INCH STONE OVER 6 INCHES OF CLEAN FILL
- 6 INCHES OF 3-INCH STONE OVER 6 INCHES OF CLAY
- 6 INCHES OF TOPSOIL OVER 6 INCHES OF CLAY
- AREA WHERE COVER SYSTEM IS NOT REQUIRED PER NYSDEC APPROVED RAWP
- SITE SECURITY FENCE AND GATES
- CONVENT ROAD FENCE AND GATES
- GUARD RAIL
- SITE BOUNDARY
- EXCAVATED AREAS
- TREE

N W E S

0 37.5' 75' 150' 225'
SCALE IN FEET 1" = 75'

140 OLD ORANGEBURG ROAD
ORANGEBURG, NEW YORK

FINAL REMEDY

PREPARED BY:	PREPARED FOR:		
GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	JP MORGAN CHASE AND COMPANY		
PROJ MGR: MS	REVIEWED BY: MS	CHECKED BY: MS	FIGURE 2
DESIGNED BY: DW	DRAWN BY: LN	SCALE: 1" = 75'	
DATE: MAY, 2020	PROJECT NO. 12.0076555.02	REVISION NO.	SHEET NO.