

DECISION DOCUMENT

South Island Apartments
Brownfield Cleanup Program
Green Island, Albany County
Site No. C401074
October 2018



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

DECLARATION STATEMENT - DECISION DOCUMENT

South Island Apartments
Brownfield Cleanup Program
Green Island, Albany County
Site No. C401074
October 2018

Statement of Purpose and Basis

This document presents the remedy for the South Island Apartments 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 South Island Apartments 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;

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

- h. Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Cover System

A site cover will be required to allow for restricted residential use of the site in areas where the upper two feet 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 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.

3. Institutional Control

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

- a. 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);
- b. allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- c. 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
- d. require compliance with the Department approved Site Management Plan.

4. A Site Management Plan (SMP) is required that 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:
 - i. Institutional Controls: The Environmental Easement discussed in Paragraph 3 above.
 - ii. Engineering Controls: The site cover discussed in Paragraph 2 above.
 - iii. This plan includes, but may not be limited to:
 - (1) an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
 - (2) descriptions of the provisions of the environmental easement including any land and groundwater use restrictions;
 - (3) a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including a provision for implementing actions recommended to address exposures related to soil vapor intrusion;

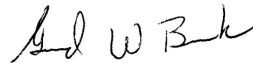
- (4) a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 2 above will be placed in any areas where the upper two of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
 - (5) provisions for the management and inspection of the identified engineering controls;
 - (6) maintaining site access controls and Department notification; and
 - (7) the steps necessary for the periodic reviews and certification of the institutional and engineering controls.
- b. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
- i. monitoring of groundwater to assess the performance and effectiveness of the remedy;
 - ii. a schedule of monitoring and frequency of submittals to the Department; and
 - iii. 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 22, 2018

Date



Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

South Island Apartments
Green Island, Albany County
Site No. C401074
October 2018

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:

Village of Green Island Offices
20 Clinton Street
Green Island, NY 12183
Phone: 518-273-2201

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, Voluntary 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 site, which is approximately 11.2 acres, is located on the southern portion of Starbuck Island in the Town of Green Island in Albany County. It is bounded to the north by the Troy/Green Island Bridge and to the south, east and west by the Hudson River. The site comprises tax parcels identified as Tax Map 33.09, Block 1, Lots 1.0, 2.1, 2.2, 3 and p/o of Osgood Avenue roadbed.

Site Features:

The site is currently vacant, undeveloped land with little to no vegetation. All buildings and structures on-site were demolished for redevelopment of the site. An underground oil-water separator was removed from within one of the berms in the middle of the site. The site elevation ranges from 5 to approximately 30 feet above mean sea level (AMSL). Mean high water is at 5.9 feet AMSL. The site banks are steep in most areas. Site runoff is assumed to drain to the east or west towards the Hudson River. There are no wetlands on the subject property. Portions of the site are located in the 100-year flood plain. The site lies within the water service area of the Village of Green Island.

Current Zoning and Land Use:

The site is currently zoned as mixed use, which allows for commercial and industrial development. It is anticipated that the site will be rezoned to allow for residential and commercial uses. Land uses in the surrounding area include commercial and residential uses. The closest residential units are north of the site across the Troy/Green Island Bridge. The closest school is located more than half a mile from the site.

Past Uses of the Site:

The site operated as a petroleum storage and distribution terminal from 1918 until it closed in 2008. The terminal structures (tanks, piping, equipment, dock, secondary containment liner, truck load rack, etc.) were demolished in 2009. When the terminal was in service, it was used for the receipt, storage, and distribution of refined petroleum products including gasoline, light fuel oils, and residual fuel oils. Petroleum products were received at the terminal by barge, and then distributed mainly by truck or re-loaded onto barges. The terminal consisted of 16 aboveground steel bulk storage tanks, a truck loading rack, barge dock, office building, electrical shed, storage sheds, earthen dikes, and internal roads. The site reportedly stored mainly fuel oils. Site surfaces consisted largely of compacted gravel with gravel berms. The compacted gravel areas were former secondary containment areas. The former terminal building reportedly was not connected to the city sewer; wastewater was discharged to a septic tank and leach field. Most recently, the site was occupied by a car wash business and an office building.

Site Geology and Hydrogeology:

The soil unit covering the entire site is identified as “urban land” defined as having 85% or more of the surface covered by asphalt, concrete, or other impervious materials. The upper 20 feet of the site consists of sandy and gravelly fill (pebbles, cobbles, broken glass, brick, wood fragments, mussel and clam shells and lightweight black solid chips). The fill transitions from soft, silty soils with debris to wet, clayey, sandy soil with increasing depth. The site is situated over the Canajoharie Shale Formation. Depth to bedrock could not be determined from historical records. However, several groundwater monitoring wells were screened in the overburden above bedrock at depths ranging from 32 to 38.5 feet below ground surface (bgs). The depth to groundwater is approximately 22 feet bgs. Groundwater flows west toward the Hudson River. Groundwater is tidal and fluctuates with the Hudson River.

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, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/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(s) under the Brownfield Cleanup Agreement is a/are Volunteer(s). The Applicant(s) does/do not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

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

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

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

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

The analytical data collected on this site includes data for:

- groundwater
- soil
- 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 | • ethylbenzene |
| • lead | • toluene |
| • mercury | • xylene (mixed) |
| • polycyclic aromatic hydrocarbons (PAHS), total | • copper |
| • polychlorinated biphenyls (PCB) | • silver |
| • benzene | |

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

- groundwater
- soil
- sediment
- soil vapor intrusion

6.2: Interim Remedial Measures

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

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

IRM No. 1 - Soil Excavation and Light Non-Aqueous Phase Liquid (LNAPL) Recovery

The following work was completed and documented in the September 2018 IRM Construction Completion Report:

1. Removal and off-site disposal of an underground oil-water separator (OWS) and the collection of soil confirmation samples. The results of the soil sampling were consistent with the fill material found throughout the site, indicating that all petroleum-related impacts had been removed in this specific area. The excavation was backfilled with fill from the site.
2. Excavation and off-site disposal of shallow soils impacted with semi-volatile organic compounds (SVOCs) above the commercial soil cleanup objective in two areas on-site (SB-26 and SB-37).
3. Removal and off-site disposal of LNAPL-contaminated soil at the former loading dock area and the MW-5 area to a depth of approximately 25 feet bgs.
4. LNAPL extraction using a vacuum truck at the two areas over a period of 7.5 weeks. An estimated 70,000 gallons of an oil/water mixture, of which 38,000 gallons or more was estimated to be waste oil, was removed from the excavations and disposed of off-site at a permitted facility.
5. Collection of documentation samples when removal of additional LNAPL and the excavation of additional soil was no longer feasible.
6. Prior to backfilling, application of Oxygen Release Compound (ORC) to the excavation to facilitate degradation of residual contamination. A total of 2,755 pounds of ORC was added to the excavation.
7. Backfill of the excavation with approved soil from the site and imported clean fill.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination:

Soil and groundwater were analyzed for volatile organic compounds (VOCs), SVOCs, metals, polychlorinated biphenyls (PCBs), and pesticides. Soil vapor was analyzed for VOCs. Groundwater was also analyzed for the emerging contaminants per- and polyfluoroalkyl substances (PFAS). According to the most recent analytical results, the primary contaminants at the site are metals, SVOCs (PAHs) and some VOCs.

Soil:

Surface and subsurface soil exceeded the restricted residential use soil cleanup objectives (RRSCOs) for lead, copper, mercury, arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene and indeno(1,2,3-cd)pyrene. Exceedances of lead (RRSCO of 400 parts per million (ppm)) ranged from 454 parts ppm to 2,290 ppm; mercury (RRSCO of 0.81 ppm) ranged from 0.9 ppm to 39.4 ppm; arsenic (RRSCO of 16 ppm) ranged from 16.2 ppm to 45.1 ppm. Copper (RRSCO of 270 ppm) was detected in only two samples at 327 ppm and 393 ppm. Benzo(a)anthracene (RRSCO of 1 ppm) ranged from 1.04 ppm to 13.2 ppm; benzo(a)pyrene (RRSCO of 1 ppm) ranged from 1.1 ppm to 11.1 ppm; benzo(b)fluoranthene (RRSCO of 1 ppm) ranged from 1.09 ppm to 10.8 ppm; benzo(k)fluoranthene (RRSCO of 3.9 ppm) ranged from 3.98 ppm to 8.46 ppm; indeno(1,2,3-cd)pyrene (RRSCO of 0.5 ppm) ranged from 0.64 ppm to 3.84 ppm. Chrysene exceeded the RRSCO of 3.9 ppm only once at 13.3 ppm. Also, bank soil samples were collected along the east and west sides of the site at 0 to 2 feet bgs. In general, higher concentrations of metals and PAHs were detected on the eastern bank. Lead, mercury, arsenic and several PAHs exceeded the RRSCOs. Lead ranged from 436 ppm to 2,300 ppm; mercury ranged from 1 ppm to 19 ppm; and arsenic was detected at 22.6 ppm. Benzo(a)anthracene ranged from 2.1 ppm to 7.41 ppm; benzo(a)pyrene ranged from 1.18 ppm to 5.43 ppm; benzo(b)fluoranthene ranged from 1.21 ppm to 11.1 ppm; indeno(1,2,3-cd)pyrene ranged from 0.699 ppm to 2.34 ppm; chrysene and dibenz(a,h)anthracene (RRSCO of 0.33 ppm) were detected at 7.25 ppm and 0.674 ppm, respectively.

Sediments:

Sediment samples results were compared to the sediment screening guidelines in the Department's Screening and Assessment of Contaminated Sediment (2014). Silver, copper and lead were detected in sediments along the west bank of the site. Silver ranged from 1.2 ppm to 2.8 ppm; copper ranged from 35.2 ppm to 42.9 ppm; and lead ranged from 43.3 ppm to 142 ppm. Only lead exceeded the Class C Sediment Guidance Value of 130 ppm. Therefore, a pore water sample was collected from the area of potential seeps along the west side of the site to estimate the bioavailability of contaminants, including lead, within the sediment particles. This sampling method provides information about potential off-site seepage of contaminants to surface water. The pore water sampling resulted in no exceedances of the surface and groundwater standards, except for iron, manganese and sodium. Based on these results, there is no indication of migration of contaminants, including lead, to surface water.

Groundwater:

The following contaminants exceeded the NYS ambient groundwater standards and guidance values: PCBs (standard of 0.09 ppb) ranged from 0.13 parts per billion (ppb) to 0.85 ppb. Benzene (standard of 1.0 ppb) ranged from 1.2 ppb to 7.9 ppb. Arsenic (standard of 25 ppb) was detected at 35.3 ppb. Results for per- and polyfluoroalkyl substances (PFAS) showed low level detections ranging from non-detect to 19.9 parts per trillion (ppt). (Initial screening levels for these substances is 70 ppt.)

Soil Vapor:

The Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006) was used to evaluate the soil vapor sampling results for the site. Petroleum related contaminants were detected in soil vapor at the site. Maximum concentrations of benzene, ethylbenzene, total xylenes and toluene were detected at 15 micrograms per cubic meter (mcg/m³), 33 mcg/m³, 100 mcg/m³ and 160 mcg/m³, respectively. No chlorinated VOCs were detected in the soil vapor.

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 or other purposes and the site is served by a public water supply that obtains its water from a different source that is not affected by this contamination. VOCs in the soil vapor 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. Because the site is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not currently represent a concern. The potential exists for people to inhale site contaminants in indoor air due to soil vapor intrusion in the event the site is re-occupied. Environmental sampling indicates soil vapor intrusion is not a concern for off-site buildings.

6.5: Summary of the Remediation Objectives

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

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of 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 Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Site-wide Cover System 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:

- a. Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- b. Reducing direct and indirect greenhouse gases and other emissions;
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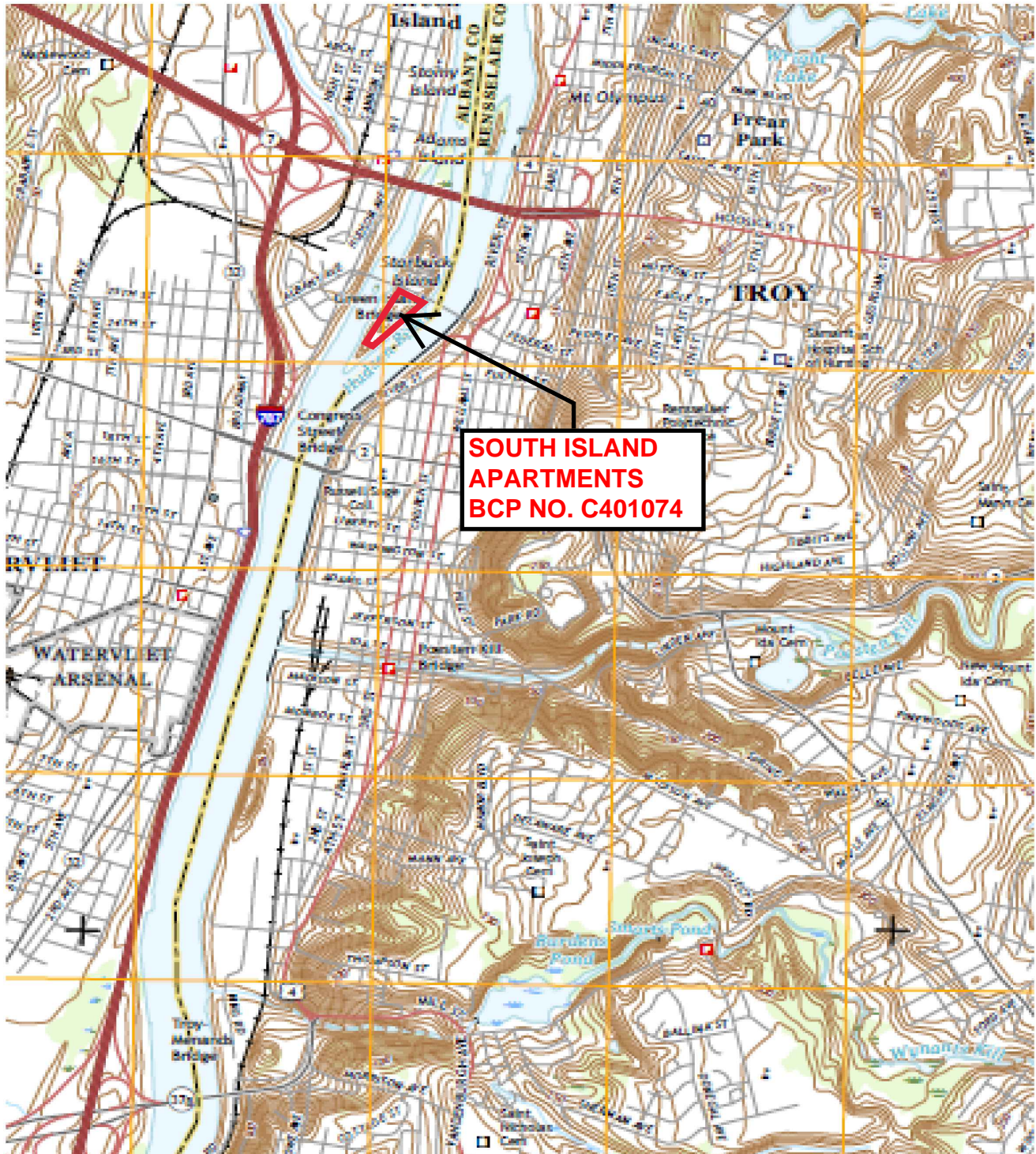
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 - (4) a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 2 above will be placed in any areas where the upper two of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
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- b. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
 - i. monitoring of groundwater to assess the performance and effectiveness of the remedy;
 - ii. a schedule of monitoring and frequency of submittals to the Department; and
 - iii. 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 - SITE LOCATION



Scale: 1:3,000 ft

— APPROXIMATE SITE BOUNDARY

TITLE:

FIGURE 1 – SITE LOCATION MAP

LOCATION:

1 OSGOOD AVENUE/CENTER ISLAND
GREEN ISLAND, NEW YORK



349 North Bld., S 3
Albany, NY 12204
P 518.453.2203
F 518.453.2204
www.envirospec.com

FIGURE 2 - SITE-WIDE COVER
SOUTH ISLAND APARTMENTS
BCP NO. C401074

