RECORD OF DECISION

312 Broadway Site
Operable Unit Number 02: South Parcel
Environmental Restoration Project
Schenectady, Schenectady County
Site No. E447035
September 2017

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

DECLARATION STATEMENT - RECORD OF DECISION

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Statement of Purpose and Basis

This document presents the remedy for Operable Unit Number: 02: South Parcel of the 312 Broadway Site, an environmental restoration 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 Operable Unit Number: 02 of the 312 Broadway Site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the above referenced site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or alternatives analysis (AA). The IRM(s) undertaken at this site are discussed in Section 6.2.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment; therefore, No Further Action is the selected remedy. The remedy may include continued operation of a remedial system if one was installed during the IRM and the implementation of any prescribed institutional controls/engineering controls (ICs/ECs) that have been identified as being part of the remedy for the site.

The IRM(s) conducted at the site attained the remediation objectives identified for this site in Section 6.5 for the protection of public health and the environment.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

September 25, 2017

Date

Robert W. Schick, P.E., Director
Division of Environmental Remediation

RECORD OF DECISION

312 Broadway Site
Schenectady, Schenectady County
Site No. E447035
September 2017

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 resulted in threats to public health and the environment that were addressed by actions known as interim remedial measures (IRMs), which were undertaken at the site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or feasibility study (FS). The IRMs undertaken at this site are discussed in Section 6.2. Contaminants include hazardous wastes and/or petroleum.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment. The IRM(s) conducted at the site attained the remediation objectives identified for this site, which are presented in Section 6.5, for the protection of public health and the environment. No Further Action is the remedy selected by this Record of Decision (ROD). A No Further Action remedy may include continued operation of any remedial system installed during the IRM and the implementation of any prescribed controls that have been identified as being part of the remedy for the site. This ROD identifies the IRM(s) conducted and discusses the basis for No Further Action.

The 1996 Clean Water/ Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Brownfields are abandoned, idled, or under-used properties where redevelopment is complicated by real or perceived environmental contamination. They typically are former industrial or commercial properties where operations may have resulted in environmental contamination. Brownfields often pose not only environmental, but legal and financial burdens on communities. Under the Environmental Restoration Program, the state provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated, the property can then be reused.

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 repositories:

Schenectady City Clerk
City Hall
Jay Street
Schenectady, NY 12305
Phone: (518) 382-5195

Schenctady County Public Library
99 Clinton Street
Schenectady, NY 12306
Phone: (518) 388-4511

A public meeting was also conducted. At the meeting, the findings of the remedial investigation (RI) and the alternatives analyses (AA) were presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the proposed remedy.

No comments were received from the public during the public comment period for the proposed remedy.

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 is located at 312 Broadway in the city of Schenectady, Schenectady County, NY.

Site Features:
The 312 Broadway site is slightly greater than 3.25 acres and is comprised of two operable units. Operable Unit 1 (OU-01) is mostly paved and is about 2.5 acres. There is a small, early 20th

century unoccupied building referred to as The Scale House that has some historic and architectural significance but is in a state of disrepair. OU-01 includes a concrete walled unoccupied vault in the southwest corner with compacted dirt floor over a concrete slab installed into the railroad embankment in the southwest corner of the parking area. It is approximately 12 feet wide by 30 feet deep by 7 feet tall.

Operable Unit 2 (OU-02) is approximately 0.75 acres with a soil/historic fill surface. Access to the parcel is currently controlled by concrete jersey barriers and steel cable gate. It is occasionally used for staging of construction materials.

City streets border the site on three sides and an active, elevated rail line borders the site to the west.

Current Zoning and Land Use:
The site is zoned commercial and is located in the C-4 Downtown Commercial District which is intended to encourage a mix of commercial, civic, cultural and hospitality uses in a pedestrian-oriented setting. Increased densities and scale are encouraged in this district while creating a walkable, attractive downtown for residents and visitors. The site is currently used for parking primarily.

Past Use of the site:
Prior site activities that may have contributed to contamination include a gas station, scrap metal salvage yards, a coal storage facility, and heavy equipment storage.

A manufactured gas plant was also located to the southeast and upgradient of the site during the second half of the 19th century. The plant was a significant source of contamination present at the site as a result of subsurface migration of coal tar. This contamination is being addressed by National Grid under a Voluntary Cleanup Agreement with NYSDEC, site number V00474.

Operable Units:
The site was divided into two operable units. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination.

Site Geology and Hydrology:
The underlying native soil at the site is primarily a mixture of fine to course sand and silt known to exist between 4 and 15 feet below the ground surface. The top 4 to 8 feet consist of historic fill material comprised of varying amounts of dirt, gravel, brick, asphalt, and concrete.

Groundwater varies between 5 and 8 feet below the ground surface, the flow of which appears seasonally variable, at times exhibiting a North - South divide.

A site location map is attached as Figure 1 and the site and Operable Unit boundaries are shown in detail on Figure 2.

A Record of Decision for Operable Unit OU-01 was finalized on March 19, 2014.

Operable Unit (OU) Number 02 is the subject of this document.

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 commercial use (which allows for 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 investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

National Grid

The Department and Niagara Mohawk Power Corporation (NMPC), which was subsequently acquired by National Grid, entered into a Voluntary Cleanup Agreement (Index #D0-0001-0011, dated January 25, 2002) that obligates the responsible party to implement a full remedial program for the MGP site (Site #V00474), including off-site contamination. Should further remediation be deemed necessary for MGP-related contamination, National Grid shall be required to implement remedial activities to address the contamination. Schenectady Metroplex Development Authority will assist the state in their efforts by providing all information to the state which identifies PRPs. Schenectady Metroplex Development Authority will also not enter into any agreement regarding response costs without the approval of the Department.

Schenectady Metroplex Development Authority will assist the state in their efforts by providing all information to the state which identifies Potentially Responsible Parties (PRPs). PRPs are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers. Schenectady Metroplex Development Authority will also not enter into any agreement regarding response costs without the approval of the Department.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- surface water
- soil
- sediment

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. The tables found in Exhibit A list the applicable SCG in the footnotes. 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 in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified for this Operable Unit at this site is/are:

benzo(a)anthracene	acenaphthene
benzo(b)fluoranthene	chrysene
benzo(a)pyrene	cyanides(soluble cyanide salts)
dibenz[a,h]anthracene	toluene
polychlorinated biphenyls (PCB)	lead
benzene	phenanthrene
1,2,4-trimethylbenzene	chlorobenzene
indeno(1,2,3-CD)pyrene	DDT
xylene (mixed)	dieldrin
isopropylbenzene	naphthalene

Based on the investigation results, comparison to the SCGs, and the potential public health and environmental exposure routes, certain media and areas of the site required remediation. These media were addressed by the IRM(s) described in Section 6.2. More complete information can be found in the RI Report and the IRM Construction Completion Report.

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 Record of Decision.

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

PCB contaminated soil excavation

An IRM was completed throughout the fall of 2016 and involved excavation of polychlorinated biphenyls (PCBs) in the southwest corner of the site. PCB-contaminated soil was categorized into soil which must be handled according to, and disposed of in a facility permitted under, the Toxic Substances Control Act (TSCA) and soil that does not need to be handled according to TSCA. Approximately 6,000 tons of soil were removed from the site; 1,694 tons of non-TSCA and 4,275 tons of TSCA classified soil from the on-site areas of PCB contamination. The completed IRM achieved applicable SCGs for the site of 10 parts per million (ppm) or less of total PCBs in subsurface soil greater than one foot below ground surface (bgs) and one ppm or less of total PCBs in the top foot of soil. This SCG is consistent with Commissioner Policy regarding soil cleanup guidance, CP-51.

The completed IRM includes placement of a demarcation layer and importation of clean fill meeting the commercial use requirements of DER-10, Appendix 5 to replace the excavated soil and establish the designed grades at the site. Technical details of the IRM are contained in the June 2017 Construction Completion 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.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for OU-02.

Prior to Interim Remedial Measures

The shallow subsurface of the OU-02 area is comprised of historic fill material including brick, cinders, ash, concrete, glass, and wood at depths consistently between 4 and 15 feet bgs. This material constitutes a volume of approximately 20,000 cubic yards of historic fill present on-site.

Volatile organic compounds (VOCs), several semi-volatile organic compounds (SVOCs), including polycyclic aromatic hydrocarbons (PAHs), PCBs and cyanide were detected during the site investigation. Compounds were found in samples of both soil and groundwater at concentrations that exceed standards, criteria and guidance (SCGs) used by the Department in evaluating the impacts of contaminants on various media.

Soil - Soil and fill in the southeast corner of OU-02 contained PCBs. PCB contamination was present up to 19 feet bgs and at concentrations up to 20,000 ppm compared to the soil cleanup objectives (SCOs) of 1 ppm in the top foot of soil and 10 ppm in the subsurface. High levels of MGP-related PAHs were located along the OU-02 north boundary at depths up to 16 feet bgs. Concentrations exceeding 8,000 ppm of total PAH were present, compared to the SCO of 500 ppm for commercial properties. Individual PAHs include benzo(a)pyrene, which is present at 400 ppm, compared to the SCO for individual SVOCs of 1 ppm. Metals were detected sporadically in the subsurface soil. Detections of cyanide appeared more often where high concentrations of PAHs were also located.

Groundwater - Samples of groundwater collected from the site indicated the presence of VOCs, SVOCs and pesticides. Chlorinated VOCs (CVOCs) and SVOCs were detected in the southern-most monitoring well. Detected CVOCs included several chlorobenzenes (primarily dichloro and trichlorobenzene). The full suite of detected compounds and resulting concentrations are provided in Figure 5. Non chlorinated SVOCs were detected in one other well while the pesticides were detected sporadically. No COCs related to OU-02 were detected in off-site groundwater.

Surface water - surface water samples in indicated the presence of one pesticide, dieldrin. The detection was four orders of magnitude below applicable standards.

Sediment - sediment samples indicated an inconsistent presence of PAHs, metals and PCBs. All three categories, when detected, were marginally above screening levels.

Special Resources Impacted/Threatened:
The site is within the areal extent of a primary aquifer. The environment has been impacted by MGP waste and PCBs. Where soil is accessible, contamination exists below the surface. Groundwater in the vicinity of the site is not used for drinking by the local population.

Post-Interim Remedial Measure
PCB-contaminated soils were addressed by excavation and off-site disposal. Analytical results from confirmation samples show CP-51 SCOs for PCBs have been attained.

MGP waste remains in localized areas of OU-02 that are to be addressed by National Grid under the existing Voluntary Cleanup Agreement (for the NM Clinton Street Schenectady Manufactured Gas Plant site -V00474). Groundwater impacted by MGP waste will be monitored to determine effectiveness of remedial actions under that cleanup agreement.

No other contaminants of concern are known to exist above applicable SCGs.

6.4: Summary of Human Exposure Pathways

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

Direct contact with contaminants in the soil is unlikely because the majority of the site is covered with a clean soil and crushed stone. The contamination remaining adjacent to underground utilities and below the roadway and sidewalks will be managed through the remediation of NM Clinton Street Schenectady Manufactured Gas Plant site (V00474). 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 the groundwater may move into the soil vapor (air spaces within the soil), which in turn 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 there are no occupied buildings on the site, the inhalation of site related contaminants due to soil vapor intrusion does not represent a concern for the site in its current condition. At off-site properties, soil vapor intrusion continues to be addressed as part of the remediation of the NM Clinton Street Schenectady Manufactured Gas Plant (MGP) site (V00474).

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: SUMMARY OF SELECTED REMEDY

Based on the results of the investigations at the site, the IRMs that have been performed, and the evaluation presented here, the Department has selected No Further Action upon implementation of institutional controls/engineering controls (ICs/ECs) as the remedy for the site, and continued remedial action by National Grid to address any remaining MGP-related waste. The remedial actions performed by National Grid will be performed under the terms and requirements of Voluntary Cleanup Agreement with the Department. The terms of the remedy detailed in the Decision Document for OU-02 of the NM Clinton Street - Schenectady MGP site. (V00474), issued on August 31, 2015. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

The remedial alternative that would allow unrestricted use of the site without engineering or institutional controls has been evaluated as part of the Alternatives Analysis Report for OU-02 of the MGP site. This alternative was found to be infeasible due to the large quantities of historic fill, the proximity of contaminants to major utilities, railroad, and public roadways. To attain unrestricted use would require excavation of all historic fill from the site and disposal of the material in a landfill.

The elements of the IRMs already completed for this site, as well as the MGP site, and the institutional and engineering controls are listed below:

Elements of the IRMs

An IRM to excavate soil contaminated by hazardous waste-level PCBs combined with proper off-site disposal has been completed at the site. Soil grossly contaminated with only MGP-related compounds will be addressed under a future remedial action as required by the 2015 Decision Document for Clinton Street MGP Site.

The IRM to remediate PCB-contaminated soil was completed early in 2016 and achieved commercial SCOs for PCBs, the primary contaminant of concern, as specified in Exhibit A. Approximately 6,000 tons of soil were removed from the site; 1,694 tons of non-TSCA and 4,275 tons of TSCA-classified soil. The excavation area was filled with material appropriate for use as backfill at a commercial location with a demarcation layer and one foot of cover material.

Engineering Controls

1. Cover System

An engineering control in the form of a cover system was placed on the site as a component of the IRM and will be maintained to allow commercial use of the site. Any site redevelopment will maintain the existing site cover. The site cover may include paved surface parking areas sidewalks comprising the site development or soil where the upper one foot of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for commercial use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

Institutional Controls

1. Imposition of an institutional control in the form of an environmental easement for the controlled property that:

a. requires 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. allows 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;

c. restricts 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;

d. requires compliance with the Department approved Site Management Plan.

2. 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 2 above.

Engineering Controls: The cover system discussed in Paragraph 1 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 any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- 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 for vapor intrusion for any buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium in which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into four categories; volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides/ polychlorinated biphenyls (PCBs), and inorganics (metals and cyanide). For comparison purposes, the standards, criteria, and guidance (SCGs) are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCOs identified in Section 4 and Section 6.1.1 are also presented.

An Environmental Restoration Program (ERP) remedial investigation (RI) was initiated at Operable Unit 02 (OU-02) in 2014. Investigation activities included soil borings, the installation of groundwater monitoring wells, and interim remedial measures (IRMs) to address sources of hazardous waste that were found on-site. The results of the investigation showed contamination to be present in surface soil, subsurface soil and groundwater. Contaminants of concern documented in the RI generally consisted of SVOCs, VOCs, and polychlorinated biphenyls (PCBs). SVOCs and PCBs were found primarily in the soil and VOCs were found in groundwater and soil in limited locations. The above contaminants present in the soil were all detected at concentrations that exceed applicable soil cleanup objectives. The VOCs detected in groundwater exceeded NYS groundwater quality standards.

Additional investigations have been performed at the 312 Broadway site by National Grid as an off-site investigation component for an adjacent, former manufactured gas plant (MGP) that operated from approximately 1851 to 1906. Investigation activities performed on the 312 Broadway site as part of this off-site MGP investigation include soil borings, installation of groundwater monitoring wells, test pits, and performance of IRMs to remediate MGP-related hazardous waste in the form of coal tar which migrated to the site in the subsurface, as well as in an apparent pipeline. Results of the MGP investigation largely corroborate the ERP site investigation's results. SVOCs and PCBs were found in the soil above applicable SCOs and benzene, toluene, ethylbenzene and xylene (BTEX) compounds, along with some SVOCs, were found in groundwater. The investigation performed by National Grid concluded that VOCs and SVOCs found at the site were from multiple sources including petroleum-based and combustion-based organic compounds with the petroleum compounds originating from the MGP pipeline found at the site.

An IRM was performed in 2016 to address the primary contaminant of concern (COC) for OU-02, PCBs. Approximately 6,000 tons of PCB contaminated soil was removed from OU-02 to attain the remedial goal established for the site in the IRM work plan: no more than one ppm of PCBs in the top foot of soil and no more than 10 ppm of PCBs in soil below one foot. Soil samples collected from the excavation sidewall and bottom samples were analyzed to confirm that remaining on-site soils do not contain PCB concentrations exceeding these remedial goals. PCBs greater than 10 ppm in the subsurface were detected off-site at the property lines adjacent to both the railroad and the city street. SVOCs are also present across the site at various concentrations. The portions of OU-02 that contain high levels of SVOCs (greater than 500 ppm) are confined to the northern edge of the property and are related to the MGP waste that was found on OU-01. Concentrations of SVOCs in the form of polycyclic aromatic hydrocarbons (PAHs), in subsurface soil in the southern half are below 500 ppm. 500 ppm is

the threshold determined to be an acceptable remedial goal for subsurface soil for the OU-01 final remedial action conducted by National Grid in accordance with DEC Commissioner's Policy 51 (CP-51) soil cleanup policy.

With the completion of the IRM described in Section 6.2 to address the PCB-contaminated soil, the MGP-related waste will subsequently be addressed by a remedy in a manner similar to the IRM conducted at OU-01 under the existing Voluntary Cleanup Agreement between the Department and National Grid.

Clean fill meeting the requirements of DER-10, Appendix 5 was imported to replace the excavated soil and establish the designed grades at the site and the site was graded to accommodate installation of an asphalt cover system. The cover may also serve as a parking lot with associated planting islands containing imported, clean topsoil.

Waste/Source Areas

As described in the RI report, waste/source materials were identified at the site and are impacting groundwater and soil.

Wastes are defined in 6 NYCRR Part 375-1.2(aw) and include solid, industrial and/or hazardous wastes. Source Areas are defined in 6 NYCRR Part 375(au). Source areas are areas of concern at a site were substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. Wastes and source areas identified at the site include, MGP-related waste that was identified in the northern half of OU-02.

MGP waste has been located along the northern edge of OU-02 at depths consistent with the previously described MGP-related waste, approximately 8-15 feet below ground surface. A tar pipe discovered previously, likely traversed OU-01 and historically discharged to low-lying fill materials and ultimately to the Schermerhorn Creek. MGP waste was identified in the December 2012 RI report for this zone as "principally pyrogenic (derived from coal)." Waste is visibly apparent in soil borings and produces odors consistent with coal tar. MGP-related waste in the northern edge has affected groundwater in the vicinity as groundwater samples contain BTEX compounds and PAHs.

PCB waste was detected in OU-02 at concentrations that constitute a source of hazardous waste and were detected in one groundwater monitoring well at concentrations above the groundwater standard.

An IRM as described previously in section 6.2 of this PRAP was conducted to remove PCBs while a future remedial action will be conducted by National Grid to address MGP waste through a remedy under the terms of the voluntary cleanup program agreement in place between the Department and National Grid.

Groundwater

Groundwater samples were collected and analyzed from monitoring wells installed in the Site's shallow overburden soils for evaluating possible impacts from site contaminants. Five wells were sampled as part of the ERP OU-02 investigation (additional wells were installed both on and off-site and sampled as part of the MGP investigation). Results of the analysis show impacts above applicable SCGs from several categories of contaminants including VOC's, SVOCs, and inorganics. The results of the contaminants of concern in groundwater at the Site are summarized in Figure 5.

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
Chlorobenzene	380	5	1 of 5
1,2-Dichlorobenzene	130	3	1 of 5
1,3-Dichlorobenzene	130	3	1 of 5
1,4-Dichlorobenzene	480	3	1 of 5
1,2,3-Trichlorobenzene	990	5	1 of 5
1,2,4-Trichlorobenzene	4,600	5	1 of 5
SVOCs			
2,4-Dichlorophenol	26	5	1 of 5
1,2,4,5-Tetrachlorobenzene	71	5	1 of 5
2,4,5-Trichlorophenol	27	1	1 of 5
Acenaphthene	210	20	1 of 5
Fluorene	75	50	1 of 5
Naphthalene	5,600	10	1 of 5
Phenanthrene	99	50	1 of 5
Inorganics			
Aluminum	0.32 – 3.5	NS	5 of 5
Arsenic	ND – 0.03	25	4 of 5
Barium	0.18 – 3.5	1000	5 of 5
Calcium	160 - 540	NS	5 of 5
Copper	0.014 – 0.042	200	5 of 5
Iron	2.4 - 110	300	5 of 5
Lead	ND – 0.28	025	1 of 5
Magnesium	17 – 130	35,000	5 of 5
Manganese	0.63 – 10	300	5 of 5
Potassium	3.2 – 11	NS	5 of 5
Cyanide	ND – 0.15	200	3 of 5
Pesticides/PCBs			
PCBs	32	0.09	1 of 5
4,4'-DDT	0.61	0.2	1 of 5
Dieldrin	0.0066 to 0.87	0.004	3 of 5
Hexachlorobenzene	0.29	0.04	1 of 5

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

VOCs were detected in one well close to the southern boundary of the OU-02 and primarily included chlorinated benzenes. The source of these compounds is unknown but they were used often as pesticides, as raw materials to make pesticides, heat transfer medium in electrical transformers, as well as in many other industrial processes. These compounds were not found in the soil matrix so are presumed to be from an off-site source.

Detected SVOCs were collocated with the VOCs, several of which were also chlorinated compounds that might be associated with the manufacture of pesticides though how they came to be disposed at the site is unknown. Other SVOCs included compounds such as naphthalene, a chemical commonly found in MGP-related waste.

The IRM conducted to remediate PCB-contaminated soil required the dewatering during the excavation in the same location where chlorobenzenes were detected. Approximately 27,000 gallons of water were pumped from the sheet piled excavation and treated prior to disposal. The removal of soil and groundwater from the location has addressed any undiscovered on-site source of contamination however off-site sources cannot be ruled out.

Groundwater impacts due to the MGP-related waste (naphthalene, acenapthalene, etc) will be addressed by an off-site remedy under the terms of the voluntary cleanup program agreement in place between the Department and National Grid.

Groundwater contamination identified during the RI was addressed during the IRM described in Section 6.2.

Soil

Surface and subsurface soil samples were collected at the site during the RI. Surface samples were collected from the top two inches of the site in areas where exposed soil was present. Subsurface samples were collected from depths between two and 12 feet below the ground surface. Subsurface soil samples were collected to assess soil contamination at or below the water table. Analytical results of the soil samples indicate contamination is present in excess of the unrestricted and commercial SCGs for SVOCs (in the category of PAHs) and PCBs in surface soil and for VOCs, SVOCs and PCBs in subsurface soil. Figure 3 and Figure 4 indicate the locations at the Site where contaminants exceed commercial SCGs.

Table 2 - Surface Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppm)	Frequency Exceeding Restricted SCG
SVOCs (Total PAH)					
Total PAHs	3.38 – 66.41	NA	NA	500	0 of 5
Benzo(a)anthracene	2.8 - 8.4	1	2 of 5	5.6	2 of 5
Benzo(a)pyrene	2.7 – 8.1	1	5 of 5	1	5 of 5
Benzo(b)fluoranthene	3.4 - 10	1	5 of 5	5.6	3 of 5
Dibenz(a,h)anthracene	0.3 – 1.2	0.33	4 of 5	0.56	3 of 5
Indeno(1,2,3-cd)pyrene	1.7 – 6.3	0.5	5 of 5	5.6	1 of 5
5 **Inorganics**					
Aluminum	5,900 – 10,000	NA	NA	NA	NA
Arsenic	ND – 5.3	13	0 of 5	16	0 of 5
Beryllium	.37 to 1.2	7.2	0 of 5	590	0 of 5

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppm)	Frequency Exceeding Restricted SCG
Cadmium	ND to .95	2.5	0 of 5	9.3	0 of 5
Calcium	31,000-94,000	NA	NA	NA	NA
Cobalt	3.7 – 5.6	NA	NA	NA	NA
Copper	14 - 37	50	0 of 5	270	0 of 5
Iron	9,700 -18,000	NA	NA	NA	NA
Lead	60 – 130	63	5 of 5	1000	0 of 5
Magnesium	7,300 – 22,000	NA	NA	NA	NA
Manganese	210 – 230	1,600	0 of 5	10,000	0 of 5
Mercury	0.12 – 0.68	0.18	3 of 5	2.8	0 of 5
Nickel	7.5 – 12	30	0 of 5	310	0 of 5
Potassium	810 – 1,500	NA	NA	NA	NA
Sodium	140 - 630	NA	NA	NA	NA
Vanadium	14 – 26	NA	NA	NA	NA
Zinc	97 - 200	109	4 0f 5	10,000	0 of 5
Pesticides/PCBs					
PCBs	0.23 – 6.8	0.1	5 of 5	1	1 of 5
Dieldrin	ND - 0.15	0.005	2 of 5	1.4	0 of 5

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: NYSDEC CP-51/Soil Cleanup Guidance, Sections V.H. and V.I, Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use, unless otherwise noted.

Five surface soil samples were collected and analyzed for the full range of inorganics (metals), VOCs, SVOCs, and PCBs/pesticides. Of these four classes of COCs, only PAHs were consistently detected. This pattern likely indicates the presence of crushed asphalt in the existing urban fill which was present over much of the site's surface.

Table 3 - Subsurface Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppm)	Frequency Exceeding Restricted SCG
SVOCs (Total PAH)					
Total PAH	ND - 1287	NA	NA	500	3 of 12
Inorganics					
Aluminum	3,800 – 13,000	NA	NA	NA	NA
Arsenic	ND – 7.8	13	0 of 12	16	0 of 12
Beryllium	0.55 to 1.5	7.2	0 of 12	590	0 of 12
Cadmium	ND to 2.8	2.5	1 of 12	9.3	0 of 12

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppm)	Frequency Exceeding Restricted SCG
Calcium	4,500 – 350,000	NA	NA	NA	NA
Cobalt	ND – 25	NA	NA	NA	NA
Copper	31 - 350	50	3 of 12	270	1 of 12
Iron	2,200 -22,000	NA	NA	NA	NA
Lead	6.4 – 1,200	63	9 of 12	1000	1 of 12
Magnesium	1,100 – 4,300	NA	NA	NA	NA
Manganese	89 - 420	1,600	0 of 12	10,000	0 of 12
Mercury	ND – 2.4	0.18	0 of 12	2.8	1 of 12
Nickel	2.1 - 38	30	1 of 12	310	0 of 12
Potassium	550 – 2,100	NA	NA	NA	NA
Sodium	ND - 790	NA	NA	NA	NA
Vanadium	ND – 27	NA	NA	NA	NA
Zinc	ND – 590	109	8 of 12	10,000	0 of 12
Cyanide	ND - 250	27	4 of 12	27	4 of 12
Pesticides/PCBs					
PCBs	ND – 22,000	0.1	578 of 749	10	125 of 749
Endosulfan Sulfate	ND – 0.17	2.4	0 of 12	200	0 of 12

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: NYSDEC CP-51/Soil Cleanup Guidance, Sections V.H. and V.I., Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use, unless otherwise noted.

Primary subsurface soil contaminants at the site include SVOCs, comprised primarily of PAHs, and PCBs. High concentrations of PAH compounds are found along the northern boundary of OU-02 within the area of known MGP-related waste. The highest concentrations are located approximately ten to thirteen feet below ground surface where MGP non-aqueous phase liquid (NAPL) was observed. PAHs on this portion of the site will be addressed through the MGP program.

PCBs were found in most portions of OU-02. In one small area of OU-02, PCBs were detected down to depths of nineteen feet below ground surface. This location corresponds to the detection of PCBs and chlorobenzenes in groundwater indicating that PCBs in the soil were present at concentrations where migration into groundwater is possible. However, the chlorinated compounds were not detected in any of the on-site soil samples, including the soil in this location. Soil in the area of groundwater contamination was removed during the IRM implemented to remediate contaminated soil.

Soil contamination identified during the RI was addressed during the IRM described in Section 6.2.

Surface Water

Three surface water samples were collected from the Schermerhorn Creek which daylights from an underground culvert onto OU-02. Approximately 60 feet of stream channel exists on OU-02 before the stream again is culverted from the site to the Mohawk River, a distance 0.6 miles.

Table 4 – Surface Water

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
None			
SVOCs (Total PAH)			
None			
Inorganics			
Iron	0.6 – 0.65	0.3	3 of 3
Sodium	92 - 92	20	3 of 3
Pesticides/PCBs			
Dieldrin	0.00047	0.24	0 of 3

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5

Iron and sodium were detected above applicable standards in all three sample locations, including a location upstream from OU-02 indicting that impacts from these two metals originate elsewhere.

No site-related surface water contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for surface water.

Sediment

Three sediment samples were collected from the 60-foot reach of Schermerhorn Creek that traverses the southwestern corner of OU-02. The samples were collected to assess the potential for impacts to the creek sediment from the site. Results of the sample analyses varied for each contaminant indicating that little to no migration of site-related COCs is occurring, and in some cases, contaminant concentrations are higher upstream than in downstream locations.

Results of sediment sample analysis are placed into three Classes: A, B and C. Class A sediments are considered to be of low risk to aquatic life. Class B sediments are slightly to moderately contaminated. Class C sediments are considered to be highly contaminated and likely to pose a risk to aquatic life.

Table 5 - Sediment

Detected Constituents	Concentration Range Detected (ppm or ppb)[a]	Freshwater Sediment Guidance Value (SGV)[b]	Frequency of SGV above Class A
Inorganics			
Copper	ND - 36	A < 32 (B) 150 < C	1 of 3
Lead	ND - 50	A < 36 (B) 130 < C	2 of 3
SVOCs (Total PAHs)			
PAHs	2.28 – 27.65	A < 4 (B) 35 < C	2 of 3
Pesticides/PCBs			
Total PCBs	ND – 470	A < 100 (B) 1000 < C	2 of 3

a - ppm: parts per million for Inorganics, which is equivalent to milligrams per kilogram, mg/kg, and parts per billion for Pesticides/PCBs which is equivalent to micrograms per kilogram, ug/kg, in sediment;
b - SCG: The Department's Screening and Assessment of Contaminated Sediment, 2014.

PCBs were detected in two of the three samples. Both detections were above Class A sediment guidelines indicating the potential for risk to human and wildlife receptors. PAHs were detected in sediment samples at concentrations consistent with urban background. Access to this small portion of the stream is severely limited through the maintenance of a fence and adjacent railroad.

Two metals, copper and lead, were detected in Schermerhorn sediment above Class A guidelines. However, copper minimally exceeded the guideline by 4 ppm and lead concentrations were higher in the upstream location than in the downstream location.

No site-related sediment contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for sediment.

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

312 Broadway Environmental Restoration Site
Operable Unit No. 2
City of Schenectady, Schenectady County, New York
Site No. E447035

The Proposed Remedial Action Plan (PRAP) for the 312 Broadway site, was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on January 27, 2014. The PRAP outlined the remedial measure proposed for the contaminated soil and groundwater at the 312 Broadway site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on June 7th, 2017, which included a presentation of the Site Investigation (SI) and the Remedial Alternatives Report (RAR) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on July 14th, 2017.

This responsiveness summary responds to all questions and comments raised during the public comment period. No comments were received in regards to the PRAP.

APPENDIX B

Administrative Record

Administrative Record

312 Broadway
OU-02
Environmental Restoration Project
City of Schenectady, Schenectady County, New York
Site No. E447035

1. Proposed Remedial Action Plan for the 312 Broadway site, Operable Unit No. 1 dated January 2014 prepared by the Department.

2. The Department and the City of Schenectady/Schenectady Metroplex Development Authority entered into a State Assistance Contract, Contract No. C302802, May 2005.

3. "Phase I Environmental Site Assessment for the Lower Parking Lot – Lower Broadway, Schenectady, Schenectady County, New York 12305", February 2004, by Professional Service Industries.

4. "Phase II Environmental Site Assessment, Lower Broadway Parking Lot, 312 Broadway, City of Schenectady, Schenectady County, New York", May 2004, by C.T. Male Associates.

5. "Drum Evaluation/Vault Surface Soil Sampling Report, ERP Site #E447035; 312 Broadway, City of Schenectady, November 2006" by C.T. Male Associates

6. "Supplemental Remedial Investigation Activities Report, ERP Site #E447035; 312 Broadway, City of Schenectady, November 2008" by C.T. Male Associates

7. "Remedial Investigation Report, Environmental Restoration Project, Clean Water/Clean Air Bond Act of 1996, ERP Site #E447035; Lower Broadway Parking Lot, 312 Broadway, City of Schenectady, Schenectady County, New York", January 2007, by C.T. Male Associates.

8. "Remedial Investigation Report-Adjacent Parcel, Environmental Restoration Project, Clean Water/Clean Air Bond Act of 1996, ERP Site #E447035; Lower Broadway Parking Lot, 312 Broadway, City of Schenectady, Schenectady County, New York", July 2008, by C.T. Male Associates.

9. "Interim Remedial Measures Work Plan, 312 Broadway Southern Parcel (OU-02), City of Schenectady, Schenectady County, New York", September 2015, by C.T. Male Associates.

10. "Remedial Investigation Report: Lower Broadway Parking Lot, 312 Broadway, City of Schenectady, Schenectady County, New York, ERP Site #E447035" November 2016, by C.T. Male Associates.

11. "312 Broadway ERP Site, (Operable Unit No. 2) City of Schenectady, Schenectady County, New York, Construction Completion Report," November 2016, by C.T. Male Associates.

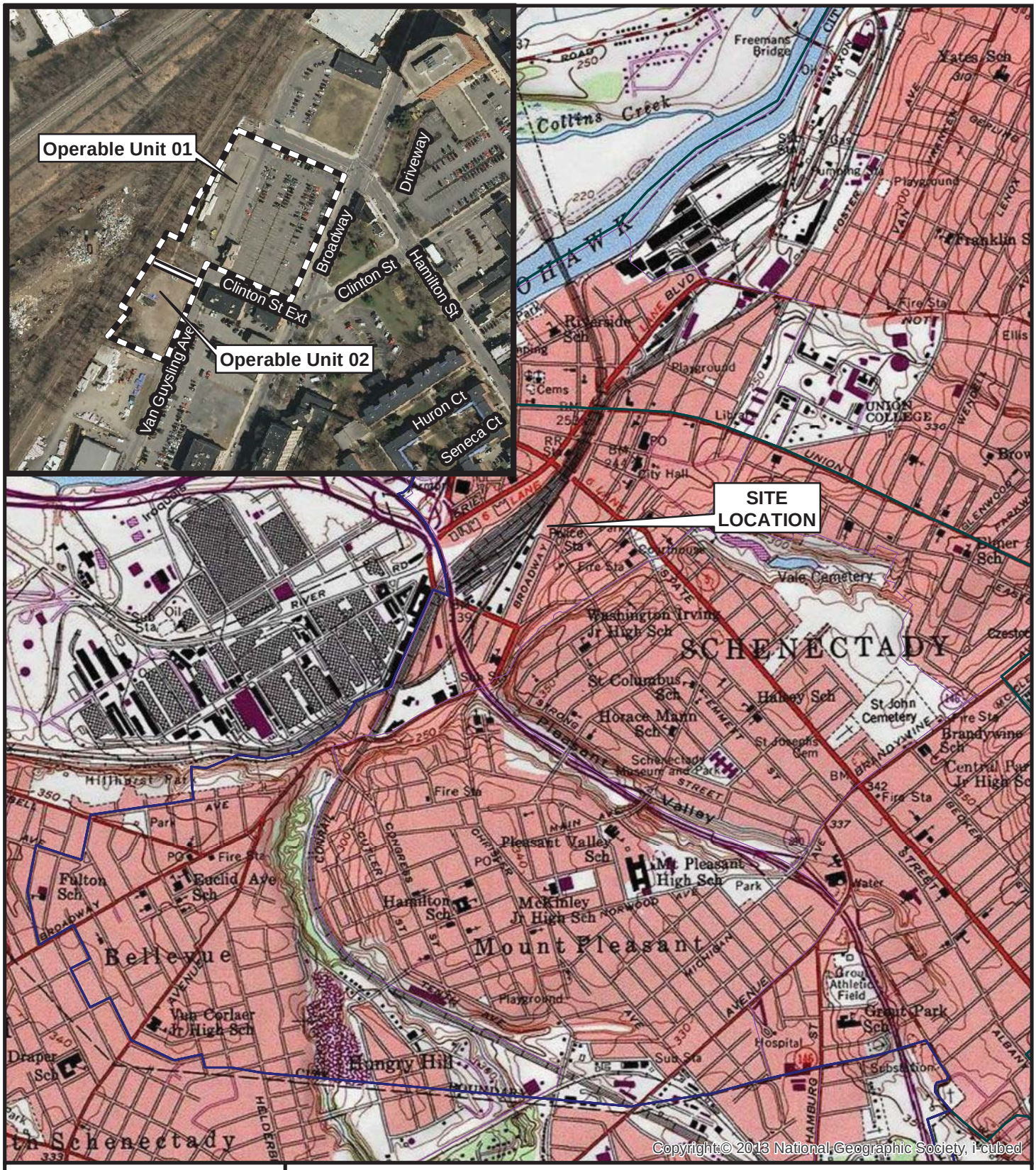

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Figure 1
Site Location Map

312 Broadway
City of
Schenectady, Schenectady County
Site No. E447035

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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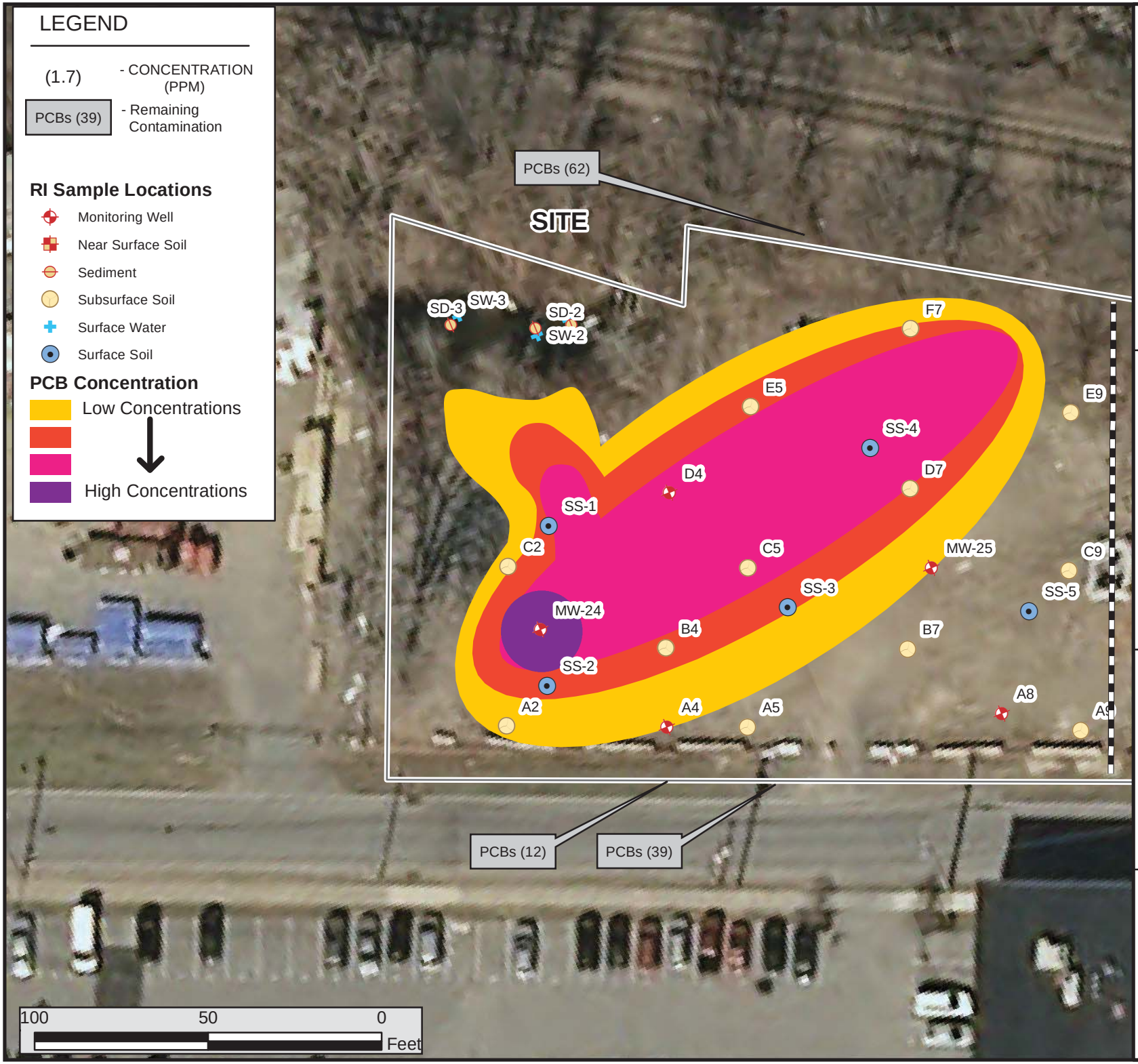
Figure 2

Site Map
312 Broadway
City of Schenectady,
Schenectady County
Site No. E447035

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation



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New York State
Department of Environmental Conservation

Division of
Environmental Remediation

312 Broadway,
Schenectady

DEC Site No.: E4-47-035

FIGURE 3

Initial Areas Of PCB Impacts in Subsurface Soil & Remaining PCBs Exceeding Standards

Map Details

Created in ArcMap 10.3
Date of Last
Revision: 04.13.2017

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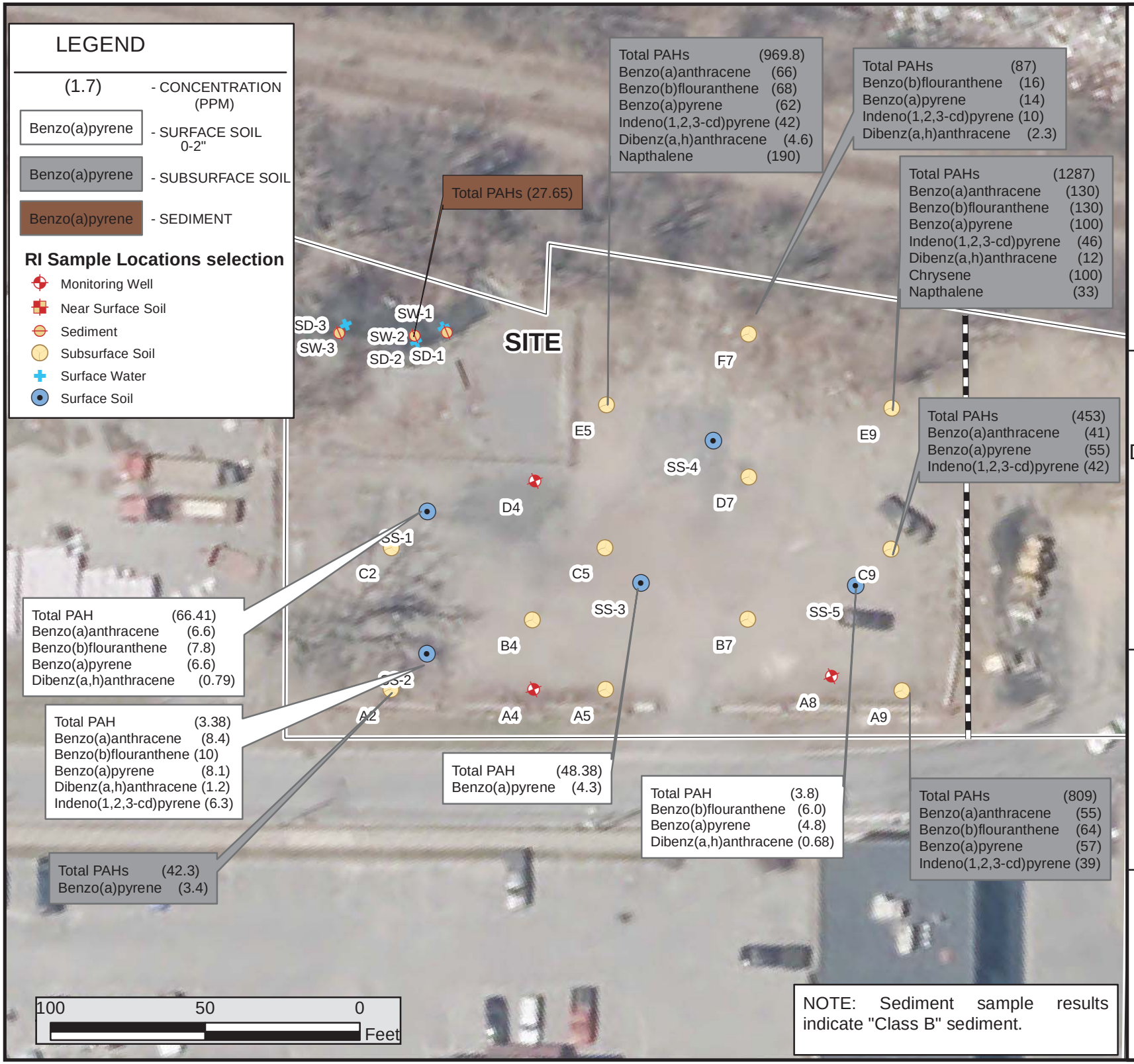
North American Datum 1983
UTM Zone 18



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312 Broadway,
Schenectady

DEC Site No.: E4-47-035

FIGURE 4

Remedial Investigation
Semivolatile Organic Compounds
Exceedences in Surface & Subsurface Soils

Map Details

Created in ArcMap 10.3

04.13.2017

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North American Datum 1983
UTM Zone 18

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Department of Environmental Conservation

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312 Broadway,
Schenectady

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FIGURE 5

Volatile Organic Compound, Inorganic, and PCB Exceedences in Groundwater

Map Details

Created in ArcMap 10.3
Date of Last
Revision: 04.13.2017

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North American Datum 1983
UTM Zone 18