RECORD OF DECISION

312 Broadway Site
Operable Unit Number 01: Remedial Program
Environmental Restoration Project
Schenectady, Schenectady County
Site No. E447035
March 2014

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

DECLARATION STATEMENT - RECORD OF DECISION

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Operable Unit Number: 01
Environmental Restoration Project
Schenectady, Schenectady County
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Statement of Purpose and Basis

This document presents the remedy for Operable Unit Number: 01: Remedial Program 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: 01 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.

March 19, 2014
Date

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

RECORD OF DECISION

312 Broadway Site
Schenectady, Schenectady County
Site No. E447035
March 2014

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

Schenectady 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.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

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 2 Operable Units. Operable Unit 1 (OU-01) is almost entirely paved occupying approximately 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 on-site activities that may have contributed to contamination include a gas station and storage of heavy equipment. Scrap metal salvage yards and a coal storage facility was also located on the site.

A manufactured gas plant (MGP) was also located to the east-southeast; 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 the responsible party under the DEC Voluntary Cleanup Agreement, 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.

Operable Unit (OU) Number 01 is the subject of this document.

A Record of Decision will be issued for OU 02 in the future.

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
- soil

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
BENZO(B)FLUORANTHENE
BENZO(A)PYRENE
DIBENZ[A,H]ANTHRACENE
POLYCHLORINATED BIPHENYLS (PCB)
BENZENE
ETHYLBENZENE
XYLENE (MIXED)
ISOPROPYLBENZENE
NAPHTHALENE
ACENAPHTHENE
CHRYSENE
CYANIDES (SOLUBLE CYANIDE SALTS)
TOLUENE

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

Excavation

An IRM was undertaken involving 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 830 tons of soil was removed from the site; 330 tons of non-TSCA and 500 tons of TSCA classified soil from the on-site areas of PCB contamination. The completed IRM achieved applicable SCGs for the site of 1 ppm or less of total PCBs in both surface and subsurface soil. This SCG is consistent with 6 NYCRR Part 375-6.8(b).

Two additional areas of the site were found to have minor petroleum impacts and potential sources of petroleum contamination. In addition to the PCB-contaminated soil removal, a small volume of petroleum-contaminated soil was removed and an underground storage tank (UST) was excavated and removed.

In the area of minor petroleum impacted soil, approximately 20 cubic yards of soil was excavated and disposed of off-site at a permitted disposal facility. Commercial SCOs were attained in this area by the removal of the impacted soil.

In the portion of the site where the UST was discovered, the tank was determined to be approximately 650 gal with a diameter of 3 feet and a length of 12 feet. The tank was exposed, liquid comprised of water and petroleum sludges was characterized and pumped out for disposal at a permitted facility. The tank was then removed, inspected for possible leaks, cut and cleaned to be recycled. It was registered in accordance with DEC procedures.

The completed IRM includes 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.

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 01.

Nature and Extent of Contamination:

Prior to Interim Remedial Measures

Most of the shallow subsurface of the site is comprised of historic fill material including brick, cinders, ash, concrete, glass, and some wood at depths consistently between 4 and 8 feet below ground surface. This material constitutes a volume of approximately 18,000 cubic yards of historic fill materials present on-site.

Several volatile aromatic hydrocarbons, commonly referred to as volatile organic compounds (VOCs), and semi-volatile polycyclic aromatic hydrocarbons (PAHs) as well as 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 used by the Department in evaluating the impacts of contaminants on various media.

Soil - Soil and fill at the site contained high levels of MGP-related PAHs. The highest levels of PAH contamination were located along the site's south border with Clinton Street Ext. and in the southwest corner at depths less than 15 feet below ground surface. Concentrations exceeding 17,000 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 600 ppm, compared to the SCO of 1 ppm. . VOCs including benzene, toluene, ethylbenzene and xylene (BTEX) were predominantly found in the southwest corner of the site at approximately 10 feet below ground surface. Concentrations up to 1,850 ppm total VOCs have been documented. PCBs were also present at the site and located exclusively in the southwest corner along, and immediately adjacent to, the railroad embankment, as well as in a concrete vault that penetrates the

embankment. PCBs existed at concentrations up to 2,600 ppm, compared to the SCOs of 1 ppm in surficial soils and 10 ppm in the subsurface.

Groundwater - Samples of groundwater collected from the site indicated the presence of VOCs in the southwest corner and PAHs in the center of the site. VOCs primarily included benzene, toluene, ethylbenzene, and xylenes at a total concentration between 100 and 200 ppb. Representative PAHs included benzo(a)pyrene at 6 ppb.

The cyanide impacts are apparent in soil and groundwater in an area that was possibly traversed by a tar pipe from the MGP prior to discharging to the Schermerhorn Creek. An alternate potential source of the cyanide, however, is from an inert, anti-caking agent (ferric ferrocyanide) used in road salt that was formerly stored in this area.

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

Post-Interim Remedial Measure
Most MGP waste source material was removed from the site though excavation performed during the IRM. MGP contamination remains on-site adjacent to underground utilities such as natural gas mains and under public rights-of-way (sidewalks and roads). Concentrations of MGP constituents in these areas exceed applicable SCOs for total PAHs specified in CP-51. These soils will be managed under the existing Voluntary Cleanup Agreement between the Department and National Grid.

PCB-contaminated soils were addressed by excavation and off-site disposal. Analytical results from confirmation samples show commercial SCOs for PCBs have been attained.

MGP waste remains in localized areas of the site 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) after removal of the PCB-contaminated soil is complete. 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 paved parking lot. The contamination remaining adjacent to underground utilities and below the roadway and sidewalks will be managed through the remediation of NM Clinton

Avenue Schenectady Manufactured Gas Plant site (V004744). 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 evaluated as part of the remediation of the NM Clinton Avenue Schenectady Manufactured Gas Plant 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 is selecting No Further Action upon completion of the IRM to excavate PCB contaminated soil, the implementation of 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 will be detailed in the Decision Document for operable unit 2 (OU-02) of the NM Clinton Street – Schenectady MGP Site(V00474). 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, presence of a historic structure, and the proximity of contaminants to major utilities and public roadways. To attain unrestricted use would require excavation of all historic fill from the site (approximately 14,000 cu yds), demolition of the historic building and existing pavement 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
IRMs to excavate soil grossly contaminated by MGP waste in one area of the site and by PCBs in a separate area with proper off-site disposal have been instituted at the site. Removal of small amounts of petroleum-contaminated soil and removal of a UST were also performed as part of the IRMs.

The IRM to remediate MGP contaminated soil required the removal of 5,435 cubic yards of soil along the southern boundary of the site and was completed in August 2012. Once the contaminated soil was removed, the excavation was backfilled with soil from on-site in addition to imported material suitable for backfill at a commercial location. Once the backfill was placed and compacted, an asphalt cover was placed over the excavation areas.

The IRM to remediate PCB contaminated soil was completed early in 2014 achieving commercial SCOs, as specified in Exhibit A, resulting in the removal of approximately 3,430 tons of soil. The excavation area will be filled with material appropriate for use as backfill at a commercial location once the remaining MGP contamination is addressed by the responsible party for the MGP VCP project.

Engineering Controls
1. Cover System
An engineering control in the form of a cover system will be maintained at the site. A site cover currently exists over a large aerial extent of the site and will be maintained to allow for

commercial use of the site. Placement of a soil cover is the final component of on-going IRMs. Any site redevelopment will maintain a site cover, which may consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The upper six inches of the soil will be of sufficient quality to maintain a vegetation layer. 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 and industrial uses 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:

o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;

o descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;

o a provision for evaluation of the potential for soil vapor intrusion should the on-site building become occupied and for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;

o provisions for the management and inspection of the identified engineering controls;

o maintaining site access controls and Department notification; and

o 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:

o monitoring for vapor intrusion for any buildings re-occupied or 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 for 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 SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

An Environmental Restoration Program (ERP) remedial investigation (RI) was initiated at the site in 2006. 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 near surface soil (soil located just below the pavement), subsurface soil and groundwater. Contaminants of concern documented in the RI generally consisted of semi-volatile organic compounds (SVOCs), volatile organic compounds (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. PCBs were also found on scrap metal shavings contained in on-site 55-gallon drums. 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 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 performed by National Grid to remove MGP-related waste addressed a significant source of hazardous waste on the site through the removal of 5,435 cubic yards of contaminated soil from the site. The soil was treated off-site by low temperature thermal desorption. MGP-related waste contaminated soil in close proximity to utilities and under road surfaces or sidewalks was left in place and managed by National Grid as per the Voluntary Cleanup Agreement. Additional MGP-related waste is known to exist in a second area of the ERP site but was not addressed due to the presence of PCB-contaminated soil overlying the MGP-related waste. With the completion of the ERP 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 just described 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 two zones of the site originating from the location of the former MGP facility to the east. The waste in the southeast corner of the site has been termed "coal tar" in the MGP site remedial investigation report for the operable unit 2 of the MGP site, December 2012. The waste was found between 8 and 16 feet below ground surface. It is a highly viscous to semi solid waste and may have originated from a severed tar pipe that was discovered in the vicinity or flowed at one point through the soil from the facility. Due to the viscous nature of the waste, and as shown by off-site borings, the waste does not appear to be migrating from this area. The other zone where MGP waste has been located is a small area in the southwest corner of the Site at depths consistent with the previously described MGP-related waste, approximately 8-15 feet below ground surface. The tar pipe discovered during the MGP waste IRM likely traversed this zone and historically discharged to the Schermerhorn Creek (Figure 7). 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 both zones has affected groundwater in the vicinity as groundwater samples contain BTEX compounds and PAHs.

An IRM as described previously in section 6.2 of this PRAP was conducted at the first zone explained above. The IRM consisted of excavation and removal of 5435 cubic yards of MGP-related contaminated soil. Contaminated soil underneath roadways and adjacent to underground utilities was left in place. Pre-excavation sampling was performed to provide confirmation samples where remedial goals were attained and documentation samples where remedial goals could not be attained due to the soil's proximity to utilities. These data are presented in the National Grid IRM work plan, 2011.

The waste/source areas identified at the site were addressed by the IRM(s) described in Section 6.2 and additional MGP-related waste will be addressed by 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. Fifteen wells were sampled as part of the ERP 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 3 and Figure 4.

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
Benzene	14 - 94	1	3 of 15
Toluene	5.1 - 23	5	2 of 15
Ethylbenzene	7.4 - 55	5	2 of 15
m/p-Xylenes	21 - 27	5	2 of 15
o-Xylene	8.5 - 22	5	2 of 15
Isopropylbenzene	13	5	1 of 15
SVOCs			
Naphthalene	31 - 88	10	2 of 15
2-Methylnaphthalene	6.2	4.7	1 of 15
Acenaphthene	44	20	2 of 15
Benzo(a)anthracene	7.7	0.002	1 of 15
Chrysene	7.3	0.002	1 of 15
Benzo(b)flouranthene	8.3	0.002	1 of 15
Benzo(k)flouranthene	2.3 - 4.5	0.002	1 of 15
Benzo(a)pyrene	5.8	ND	1 of 15
Inorganics			
Aluminum	144 - 2,140	100	7 of 15
Antimony	10.7 - 35.7	3	3 of 15
Cobalt	5.57	5	1 of 15
Iron	866 - 4,540	300	15 of 15
Lead	29.7 - 56.8	25	2 of 15
Manganese	368 - 3,390	300	15 of 15
Mercury	6.22	0.7	1 of 15
Sodium	61,200 - 1,380,000	20,000	15 of 15
Cyanide	87 - 1,210	200	4 of 5
Pesticides/PCBs			
None			

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 and SVOCs are largely present in the zones of known MGP-related wastes. VOCs are composed primarily of BTEX compounds and the SVOCs detected are primarily PAHs that are common contaminants present at MGP sites. Therefore, the MGP-related waste is the suspected source of the groundwater contamination. Many of the inorganics such as iron, sodium and manganese are more widely apparent at the Site and are likely due to the presence of historic fill. Other inorganics were detected at a much lower frequency, such as lead, at isolated locations and do not indicate a significant source of the contaminant to be present. Cyanide was also present in several groundwater samples. Multiple sources of cyanide are possible.

Purifier waste associated with MGP facilities containing cyanide may have migrated with other MGP-related wastes either through subsurface soil or the previously described "Tar Pipe" though it is also possible that anti-caking agents containing cyanide found in common road salt may have migrated to the subsurface soil.

Because groundwater impacts are due to the MGP-related waste, they 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.

Soil

Surface, subsurface and near surface soil samples were collected at the site during the RI. Surface samples were collected from the top 2 inches of the site in areas where exposed soil was present. Subsurface samples were collected from depths between 2 and 12 feet below the ground surface. Near surface samples were collected to assess soil contamination at the interval below existing pavement, crushed stone or dense vegetation present on-site. 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 VOCs, PAHs, inorganics and PCBs. Figure 5 and Figure 6 indicate the locations at the Site where contaminants exceed commercial SCGs.

Table 2 - Near 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
VOCs					
Methylene Chloride	0.68 - 0.170	0.05	12 of 15	500	0 of 15
SVOCs (PAHs)					
Total PAHs	ND - 1,181	NA	NA	500	1 of 15
Inorganics					
Cyanide	0.73 - 83	27	1 of 3	27	1 of 3
Copper	3.32 - 106	50	4 of 15	270	0 of 15
Lead	22.9 - 2800	63	7 of 15	1,000	1 of 15
Mercury	0.008 - 0.453	0.18	8 of 15	2.8	0 of 15
Silver	1.15 - 3.29	2	7 of 15	1,500	0 of 15
Zinc	18.3 - 175	109	6 of 15	10,000	0 of 15
Pesticides/PCBs					
Arochlor – 1260	0.12 - 720	0.1	19 of 31	1	10 of 31

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, Section V. H., Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use, unless otherwise noted.

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
VOCs					
Acetone	0.051 - 0.54	0.05	7 of 15	500	1 of 23
2-Butanone (MEK)	0.031 – 0.12	0.12	0 of 15	500	0 of 23
Methylcyclohexane	0.200	N/A	NA	NA	NA
Benzene	0.027 – 1.9	0.06	4 of 15	44	2 of 23
Ethylbenzene	0.25 – 5.8	1	4 of 15	390	1 of 23
Xylenes	0.011 – 3.9	0.26	5 of 15	500	2 of 23
Isopropylbenzene	0.13 – 1.7	N/A	NA	NA	NA
SVOCs (PAHs)					
Total PAHs	0 – 17,780	NA	NA	500	3 of 23
Inorganics					
Copper	3.32 - 178	50	6 of 21	270	0 of 21
Lead	7.5 - 443	63	9 of 21	1,000	0 of 21
Mercury	0.011 – 1.1	0.18	11 of 21	2.8	0 of 21
Nickel	2.95 – 34.8	30	1 of 21	310	0 of 21
Silver	0.1 - 2.29	2	1 of 21	1,500	0 of 21
Zinc	18.3 - 273	109	7 of 21	10,000	0 of 21
Pesticides/PCBs					
Arochlor – 1260	0.025 - 20	0.1	16 of 53	1	7 of 53

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, Section V. H., Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use, unless otherwise noted.

Primary soil contaminants at the site include PAHs, BTEX, and PCBs. PAHs and BTEX compounds are comingled in subsurface soils and result from the presence of the MGP waste. PCBs are contained to the shallow subsurface in the extreme southwest corner of the Site adjacent to an active railroad.

PCBs on the site were excavated and removed from the site by the IRM described in section 6.2. PAH and BTEX compounds have been addressed by the IRM performed by National Grid described in section 6.2 or will be addressed by a remedy under the existing Voluntary Cleanup Agreement in place between the Department and National Grid.

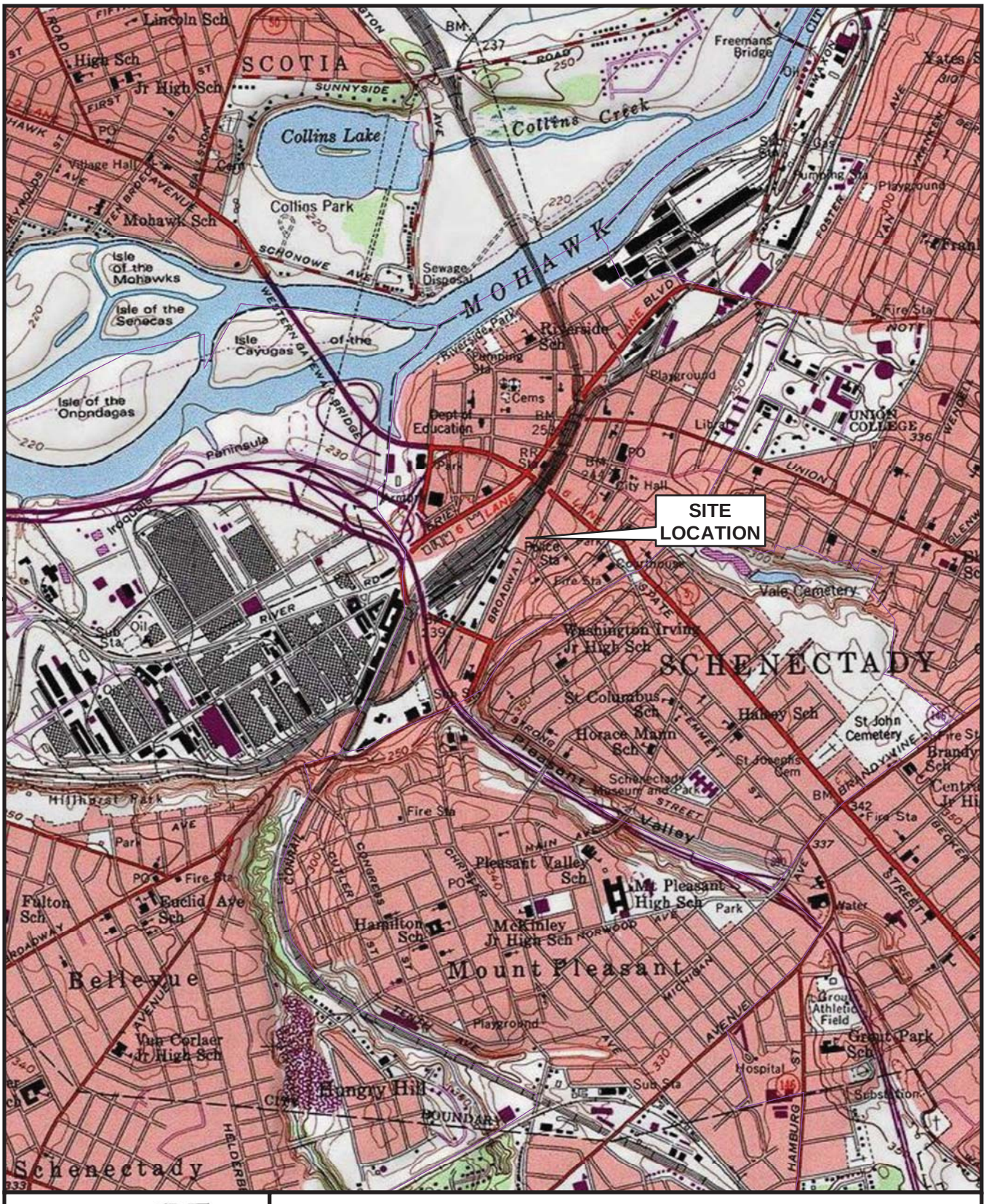
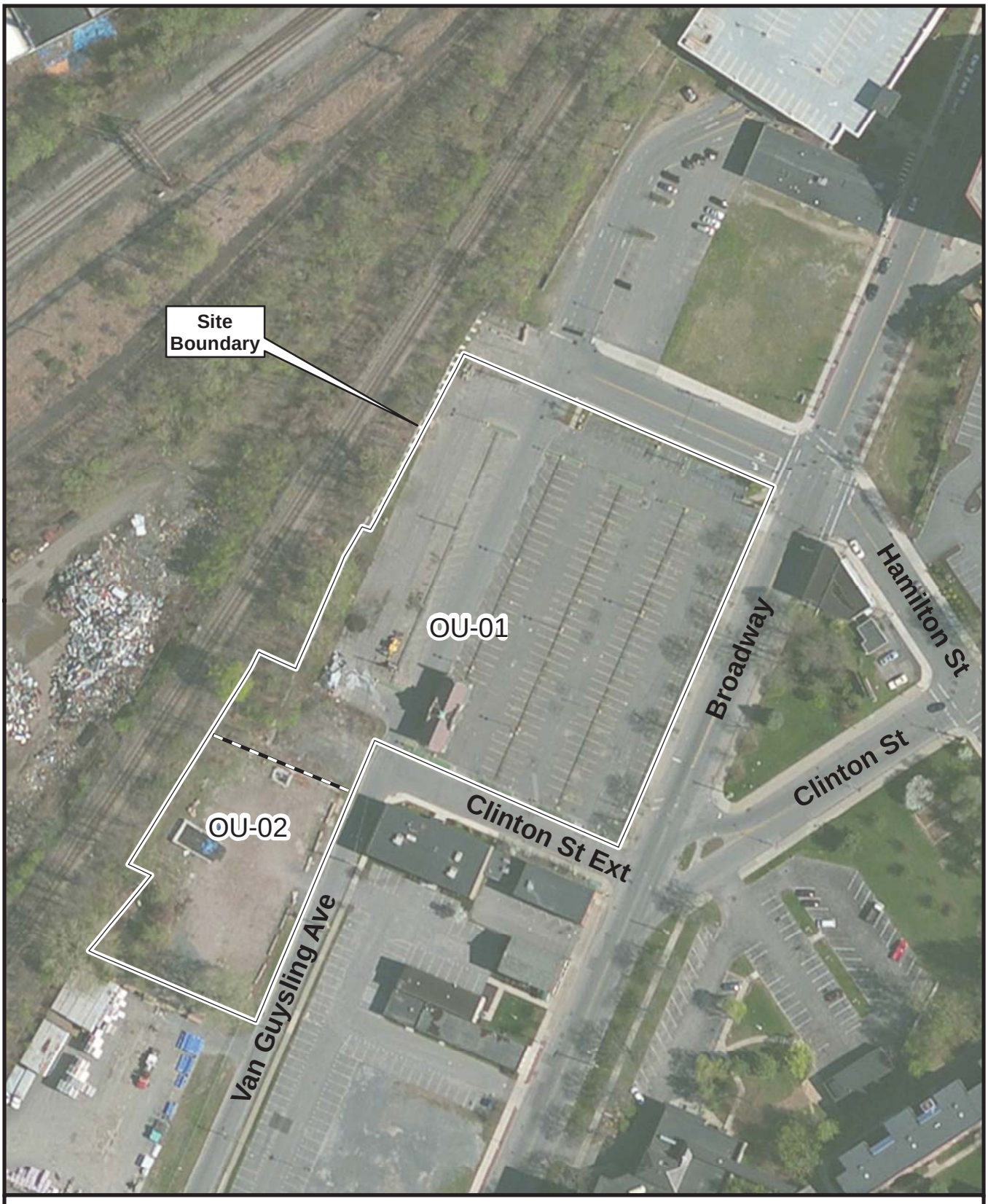


Figure 1

Site Location Map

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

DEPARTMENT OF ENVIRONMENTAL CONSERVATION · NEW YORK STATE ·



N
W E
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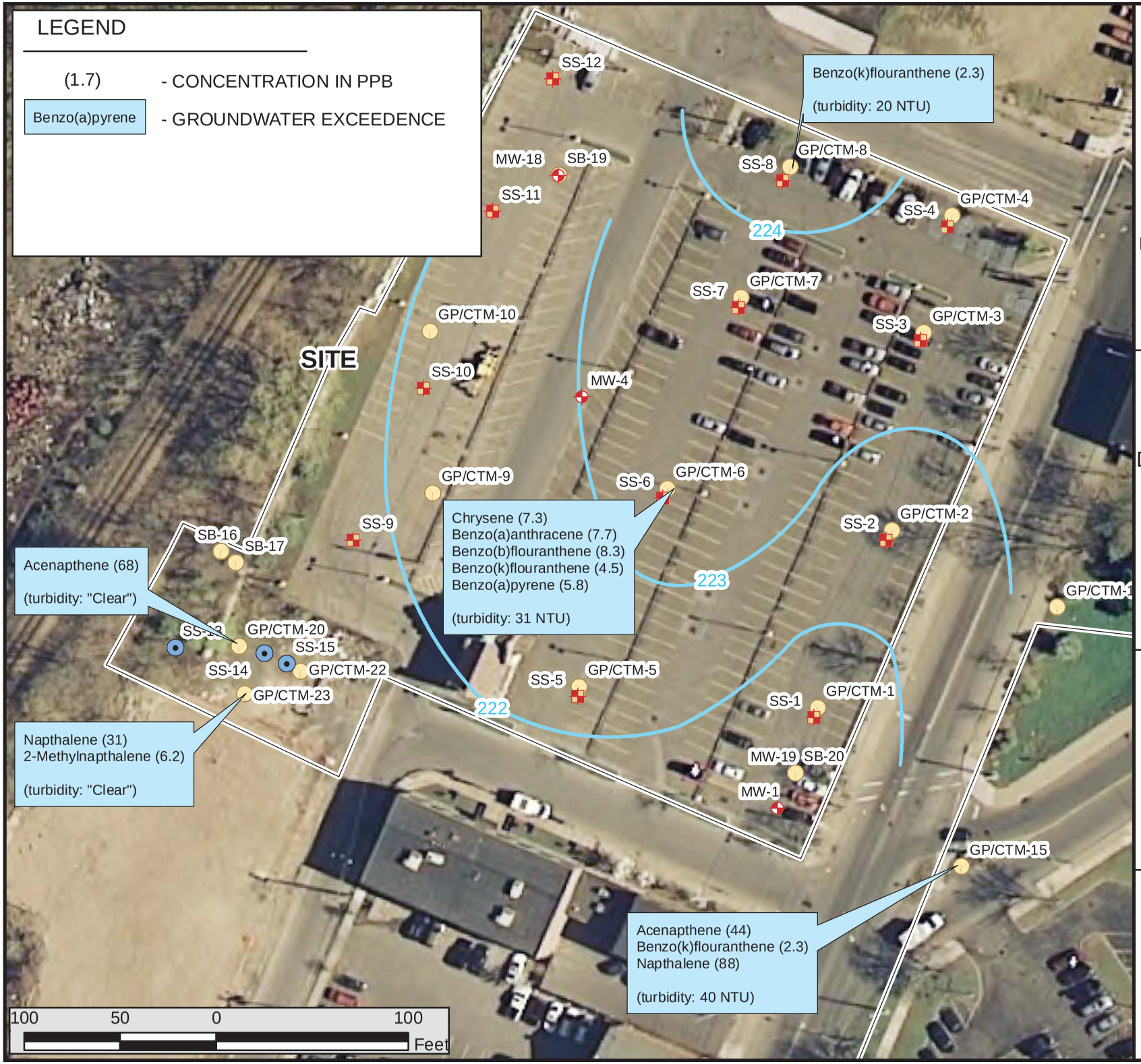
0 62.5 125
Feet

Figure 2
Site Map
312 Broadway
City of Schenectady, Schenectady County
Site No. E447035

DEPARTMENT OF ENVIRONMENTAL CONSERVATION • NEW YORK STATE •



New York State
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Environmental Remediation

312 Broadway,
Schenectady

DEC Site No.: E4-47-035

FIGURE 3

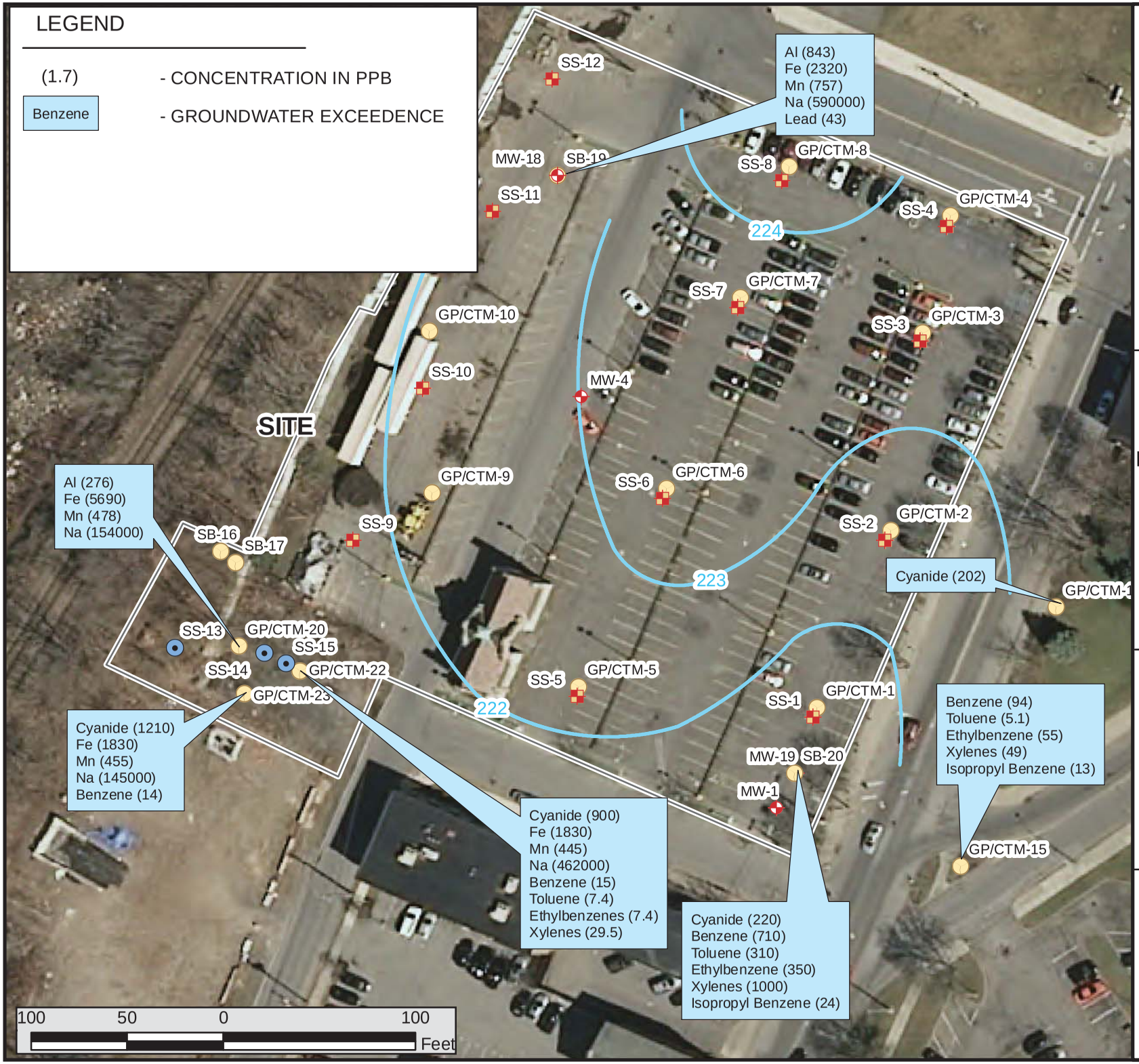
Semivolatile Organic Compound Exceedences in Groundwater

Map Details

Created in ArcMap 10.3
Date of Last
Revision: 10.28.2013

N

North American Datum 1983
UTM Zone 18



New York State
Department of Environmental
Conservation

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Environmental Remediation

312 Broadway,
Schenectady

DEC Site No.: E4-47-035

FIGURE 4

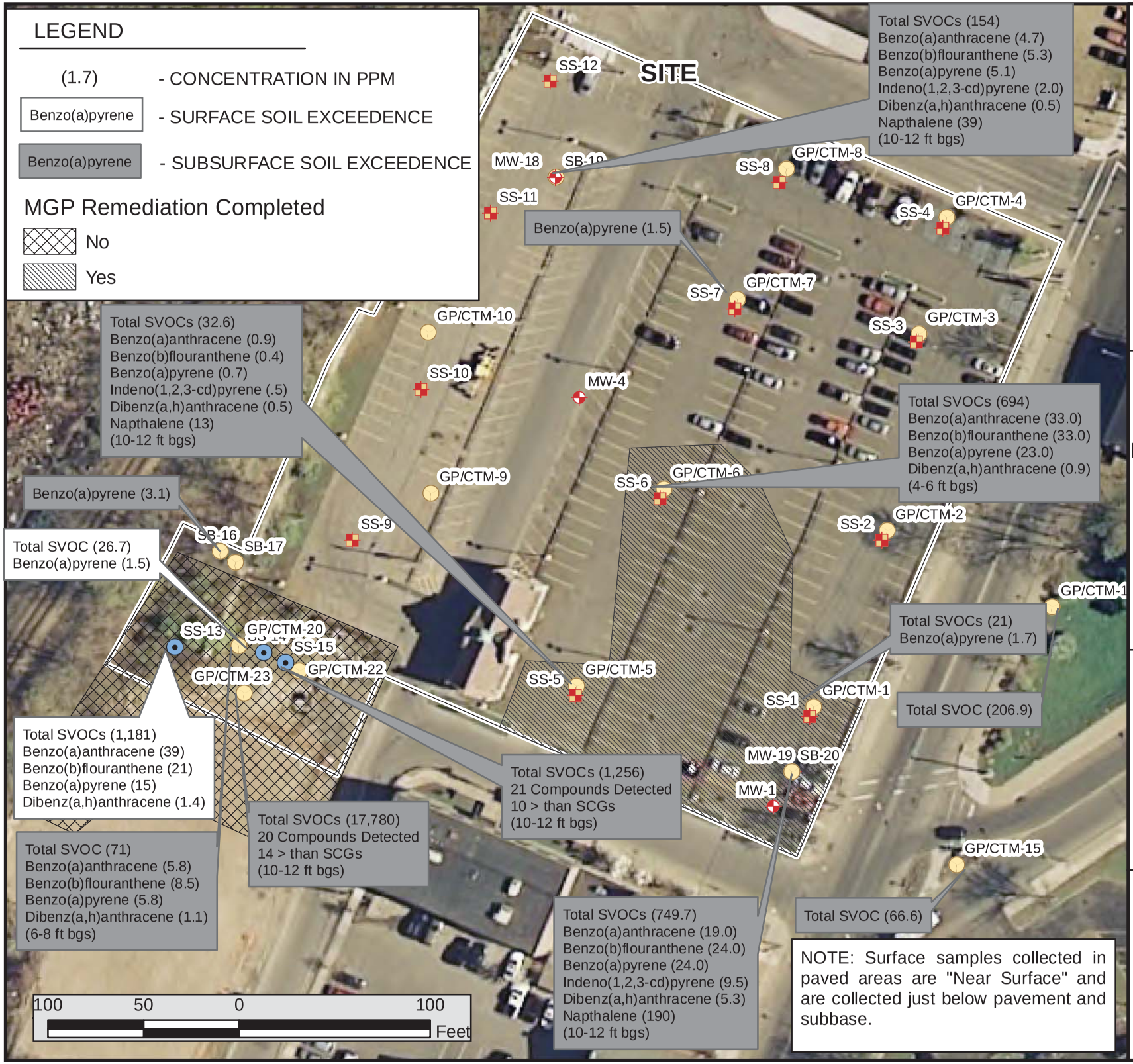
Volatile Organic Compound, Inorganic, and PCB Exceedences in Groundwater

Map Details

Created in ArcMap 10.3
Date of Last
Revision: 10.28.2013

N

North American Datum 1983
UTM Zone 18



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Conservation

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Environmental Remediation

312 Broadway,
Schenectady

DEC Site No.: E4-47-035

FIGURE 5

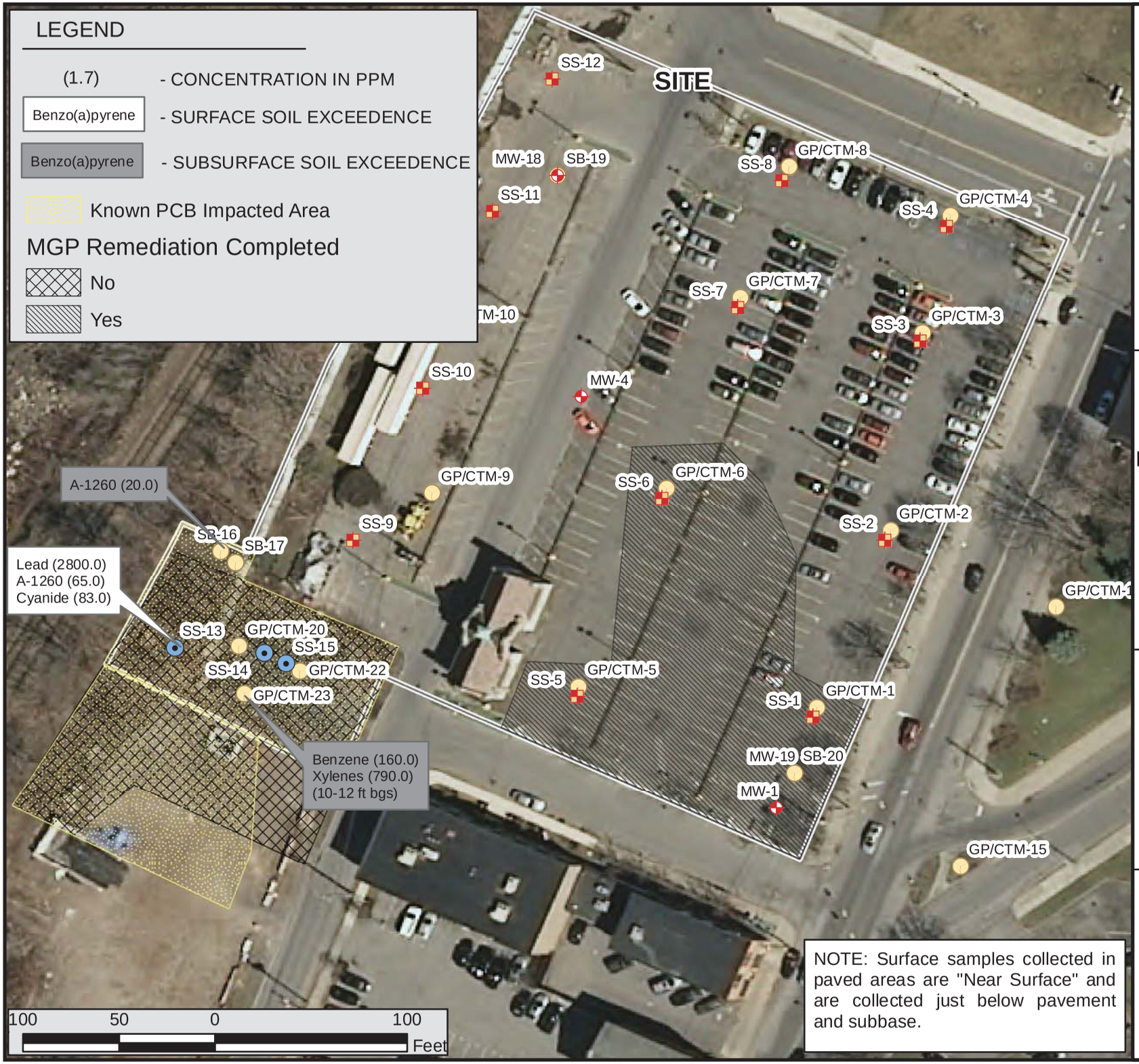
Semivolatile Organic Compound Exceedences in Surface & Subsurface Soils

Map Details

Created in ArcMap 10.3

10.29.2013

North American Datum 1983
UTM Zone 18



New York State
Department of Environmental
Conservation

Division of
Environmental Remediation

312 Broadway,
Schenectady

DEC Site No.: E4-47-035

FIGURE 6

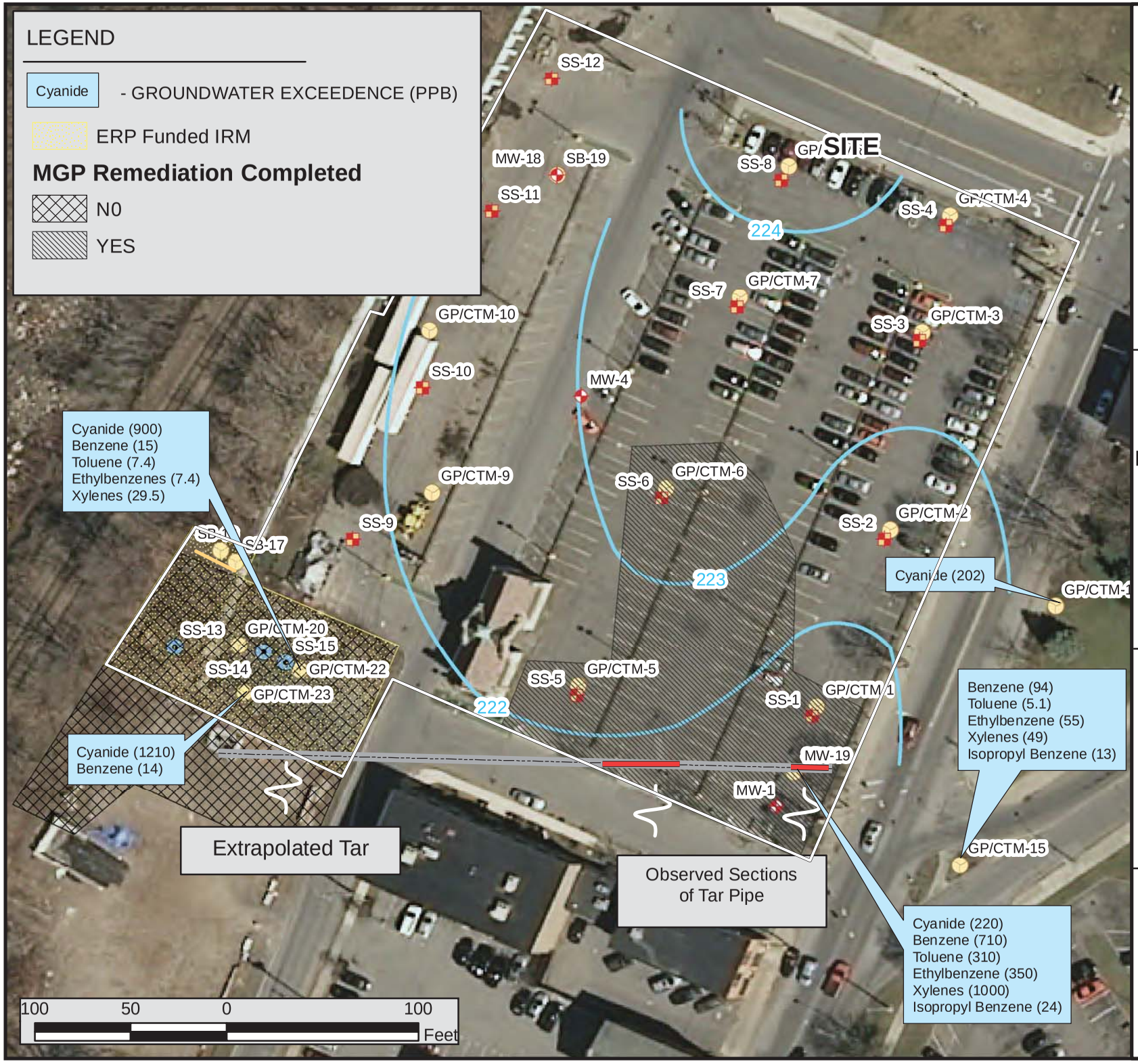
Volatile Organic Compound, Inorganic, and PCB Exceedences in Surface & Subsurface Soils

Map Details

Created in ArcMap 10.3
Date of Last
Revision: 01.08.2013

N

North American Datum 1983
UTM Zone 18



New York State
Department of Environmental Conservation

Division of
Environmental Remediation

312 Broadway,
Schenectady

DEC Site No.: E4-47-035

FIGURE 7

Site Conditions and Status

Map Details

Created in ArcMap 10.3
Date of Last
Revision: 12.18.2013

North American Datum 1983
UTM Zone 18

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

312 Broadway Environmental Restoration Site
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 February 18th, 2014, 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 March 13th, 2014.

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-01
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.