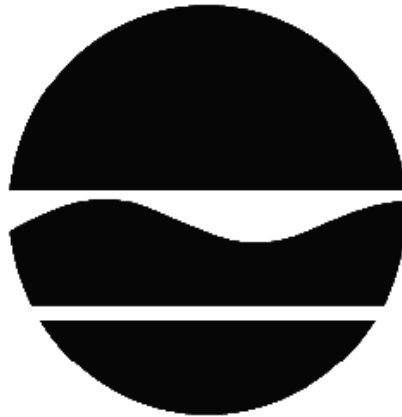


DECISION DOCUMENT

CE - Purdy St. Station
Voluntary Cleanup Program
Bronx, Bronx County
Site No. V00557
January 2015



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

DECLARATION STATEMENT - DECISION DOCUMENT

CE - Purdy St. Station
Voluntary Cleanup Program
Bronx, Bronx County
Site No. V00557
January 2015

Statement of Purpose and Basis

This document presents the remedy for the CE - Purdy St. Station site, a voluntary cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and applicable guidance.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the CE - Purdy St. Station site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the remedy are as follows:

1. Remedial Design

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

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

2. Excavation

Excavation and off-site disposal of shallow contaminant source areas, including:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u),
- soil containing SVOCs exceeding 500 ppm and,
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51, Section G.

Approximately 3,900 cubic yards of soil, over an area of 12,000 square feet, will be removed from the site and treated prior to disposal using thermal desorption techniques. During the initial excavation phase, this excavation will stop at a depth approximately 8 feet below the ground. This will remove about 90% of the source material on the site while minimizing the short-term impacts to the surrounding schools and residences by eliminating the need for extensive excavation support and water handling to remove the remaining isolated areas of this material at depth. Excavated soil which does not exceed the SCOs for restricted residential use may be used to backfill the excavation and establish the designed grades at the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site.

In addition to the excavation described above, other areas of source material at depth may be removed during planned construction on the site subject to requirements set forth in the site management plan (see item 6 below). While this work could be performed after remediation of the site as part of Site Management activities, the additional remediation may also be integrated into the redevelopment construction efforts at the site to accommodate the property owner's schedule.

3. Cover System

A site cover will be required to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil 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).

4. Enhanced Bioremediation

In-situ enhanced biodegradation will be employed to treat the petroleum impacts associated with the historic underground storage tanks dealt with by the IRM that were on the site in the area underneath the school building. The biological breakdown of contaminants through aerobic respiration will be enhanced by the placement of an oxygen release compound (ORC), or similar material into the subsurface via injection wells whose locations will be determined during the design phase.

Fluid recovery wells may also be installed if light non aqueous phase liquid is identified and recoverable.

5. Institutional Control

Imposition of an institutional control in the form of a deed restriction for the controlled property that:

- 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);
- allows the use and development of the controlled property for restricted residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- 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; and
- requires compliance with the Department approved Site Management Plan.

6. Site Management Plan

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

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 deed restriction discussed in Paragraph 5 above.

Engineering Controls: The cover system discussed in Paragraph 3, the groundwater treatment system discussed in Paragraph 4, and the sub-slab depressurization system installed during the IRM.

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 deed restriction including any land use, and groundwater restrictions;
- a provision for further investigation to refine the nature and extent of contamination in the following areas where access was previously hindered: under the existing school building if and when the building is demolished.
- a provision for evaluation of the potential for soil vapor intrusion for 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.

a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

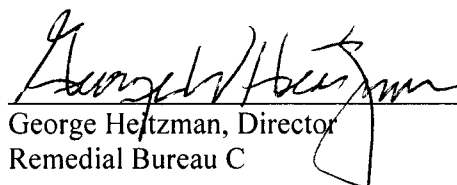
- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion for any buildings developed on the site , as may be required by the Institutional and Engineering Control Plan discussed above.

Declaration

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

Date

January 2, 2015


George Heitzman, Director
Remedial Bureau C

DECISION DOCUMENT

CE - Purdy St. Station
Bronx, Bronx County
Site No. V00557
December 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 has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The Voluntary Cleanup Program (VCP) is a voluntary program. The goal of the VCP is to enhance private sector cleanup of brownfields by enabling parties to remediate sites using private rather than public funds and to reduce the development pressures on "greenfields." 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:

Office of the Bronx Borough President
851 Grand Concourse
Bronx, NY 10451
Phone: (718) 590-3500

Westchester Square Library
2521 Glebe Avenue
Bronx, NY 10461
Phone: (718) 863-0436

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 Purdy Street site is located in an urban area on St. Raymond's Avenue, between Purdy Street and Odell Street in the Bronx. The site is surrounded by residential and park uses, and a New York City public school which is located across Purdy Street from the site.

Site Features: The site features include a single, large school building on the south end of the site and an athletic field on the north end of the site.

Current Zoning/Use: The site is currently zoned as general residential and is in use as St. Raymond's High School, a private high school run by the New York City Archdiocese.

Past Use of the Site: The site was a manufactured gas plant from the 1860s through the early 1900s. From then until the 1920s the site was used as a holder station for the storage, but not the manufacture, of gas. After that, until 1960, the site was a service center for Con Edison. The Archdiocese purchased the property from Con Edison in 1960 and the school opened in 1964.

Site Geology/Hydrogeology: The site is immediately underlain by fill varying in depth from 12 to 22 feet. Underneath that is a discontinuous layer of glacial deposits, mostly clay. These deposits are thickest on the western side of the site, but absent on the eastern side. Beneath that is weathered bedrock, with competent bedrock found at depths ranging from 12 to 28 feet below the ground.

Groundwater is present at approximately 8 feet below the ground surface, and flows to the southeast.

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, at a minimum, an alternative that restricts the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in DER-10, Technical Guidance for Site Investigation and Remediation was evaluated.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for

the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Department and Consolidated Edison of New York entered into a Voluntary Cleanup Agreement on August 15, 2002. The Agreement obligates the responsible party to implement a full remedial program at a number of sites located throughout New York City and Westchester County. The responsible party is subject to legal actions by the state for recovery of all response costs the state has incurred.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

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

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

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

The analytical data collected on this site includes data for:

- groundwater
- soil
- indoor air
- sub-slab vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

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

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has

developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

Coal Tar
Benzene, Toluene, Ethylbenzene And Xylenes (BTEX)
Total Polycyclic Aromatic Hydrocarbons (PAHs)

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

- groundwater
- soil

6.2: Interim Remedial Measures

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

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

IRM Soil Removal and SSDS Installation for School Expansion

From October 2010 to May 2011, approximately 250 cubic yards of shallow (4-6 feet below the ground surface) petroleum impacted soil and underground petroleum storage tanks were excavated and disposed off-site to facilitate the construction of an addition to the school. As a precautionary measure, a sub-slab depressurization system was also installed under the new addition to ensure that the new addition is not affected by potentially contaminated soil vapor.

6.3: Summary of Environmental Assessment

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

Nature and Extent of Contamination: Based upon investigations to date, the primary contaminants found on the site are coal tar and its chemical constituents. The tar was released from pipes and subsurface structures on the site while the plant was in operation, and has migrated through the subsurface soils. Approximately 90% of the coal tar present at the site is found in the upper 8 feet of soil in the northernmost portion of the site, in the location of the former MGP structures. Some of the coal tar, representing approximately 10% of the site total, has migrated from this area to the south and is present as deep as 25 feet below the ground surface.

The constituents of concern include benzene, toluene, xylene, and ethylbenzene (known collectively as BTEX), benzo(a)pyrene, naphthalene, and several other polycyclic aromatic hydrocarbons (PAHs). Soils contaminated with BTEX and PAHs associated with the tar are found just beyond the limits of the tar itself at concentrations that reach as high as 36,000 ppm for total PAHs and 2,000 ppm for total BTEX.

The soil contamination acts as a source of groundwater contamination, with the highest levels of groundwater contamination found in the areas with the highest levels of soil contamination. Groundwater concentrations are as high as almost 1,000 ppb for total VOCs and over 400 ppb for total SVOCs. Groundwater contaminant concentrations drop quickly as the groundwater moves away from the source areas.

While there were some contaminants of concern found in soil vapor samples, their concentrations were very low. Indoor air and sub-slab vapor samples did not indicate a need to implement actions to address exposures in the on-site building.

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 buildings and pavement. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not contaminated by the site. Volatile organic compounds 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 or buildings, is referred to as soil vapor intrusion. A sub-slab depressurization system was installed under a portion of the on-site building where soil vapor intrusion is a concern. If the site is redeveloped or the use changes, the potential for soil vapor intrusion may need to be re-evaluated. Soil vapor intrusion is not a concern for off-site.

6.5: Summary of the Remediation Objectives

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

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

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

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

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

The selected remedy is referred to as the Shallow Source Material Excavation and Groundwater Treatment remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. Remedial Design

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

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

2. Excavation

Excavation and off-site disposal of shallow contaminant source areas, including:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u),
- soil containing SVOCs exceeding 500 ppm and,
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51, Section G.

Approximately 3,900 cubic yards of soil, over an area of 12,000 square feet, will be removed from the site and treated prior to disposal using thermal desorption techniques. During the initial excavation phase, this excavation will stop at a depth approximately 8 feet below the ground. This will remove about 90% of the source material on the site while minimizing the short-term impacts to the surrounding schools and residences by eliminating the need for extensive excavation support and water handling to remove the remaining isolated areas of this material at depth. Excavated soil which does not exceed the SCOs for restricted residential use may be used to backfill the excavation and establish the designed grades at the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site.

In addition to the excavation described above, other areas of source material at depth may be removed during planned construction on the site subject to requirements set forth in the site management plan (see item 6 below). While this work could be performed after remediation of the site as part of Site Management activities, the additional remediation may also be integrated into the redevelopment construction efforts at the site to accommodate the property owner's schedule.

3. Cover System

A site cover will be required to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil 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).

4. Enhanced Bioremediation

In-situ enhanced biodegradation will be employed to treat the petroleum impacts associated with the historic underground storage tanks dealt with by the IRM that were on the site in the area underneath the school building. The biological breakdown of contaminants through aerobic respiration will be enhanced by the placement of an oxygen release compound (ORC), or similar material into the subsurface via injection wells whose locations will be determined during the design phase.

Fluid recovery wells may also be installed if light non aqueous phase liquid is identified and recoverable.

5. Institutional Control

Imposition of an institutional control in the form of a deed restriction for the controlled property that:

- 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);
- allows the use and development of the controlled property for restricted residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- 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; and
- requires compliance with the Department approved Site Management Plan.

6. Site Management Plan

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

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 deed restriction discussed in Paragraph 5 above.

Engineering Controls: The cover system discussed in Paragraph 3, the groundwater treatment system discussed in Paragraph 4, and the sub-slab depressurization system installed during the IRM.

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 deed restriction including any land use, and groundwater restrictions;
- a provision for further investigation to refine the nature and extent of contamination in the following areas where access was previously hindered: under the existing school building if and when the building is demolished.
- a provision for evaluation of the potential for soil vapor intrusion for 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.

a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

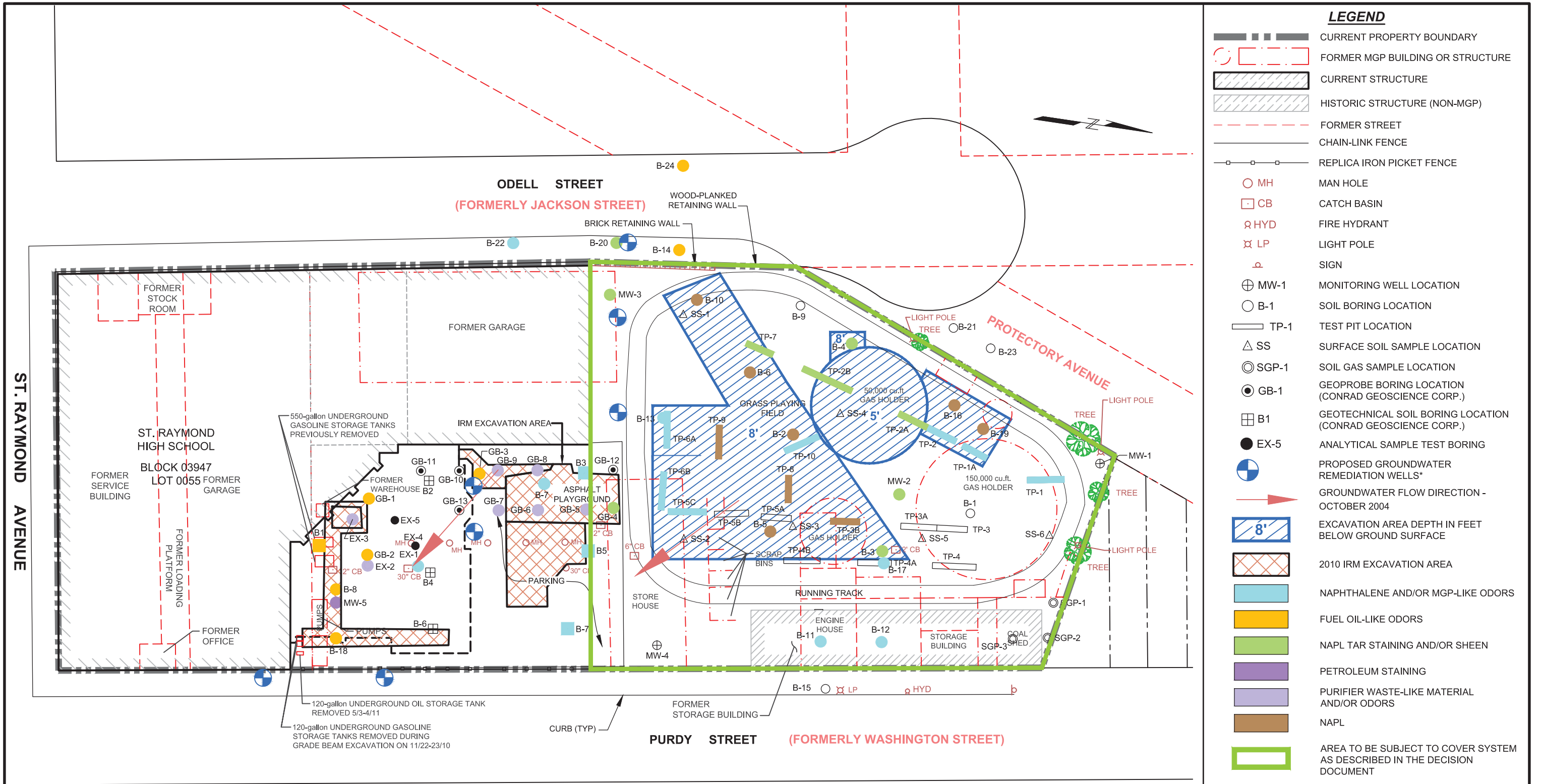
- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion for any buildings developed on the site , as may be required by the Institutional and Engineering Control Plan discussed above.



January 2015

Purdy St. Station

Figure 1

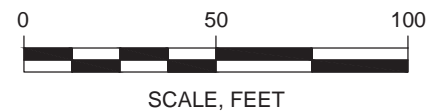


SOURCES:

1. BRONX TAX ASSESSOR'S MAP.
2. SANBORN FIRE INSURANCE MAPS DATED 1898, 1908, 1919, AND 1929.
3. SERVICE BUILDING & STORAGE YARD, CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.; BOROUGH OF THE BRONX, N.Y. CITY, N.Y.; 1955 PURDY ST. & ST. RAYMOND AVE.; SCALE: 1"=50'; OCT. 1945.
4. AERIAL PHOTOGRAPH, GLOBEXPLORER, AIRPHOTO USA, 2002.
5. SITE SURVEY PERFORMED BY GEI CONSULTANTS, INC. IN AUGUST 2004 AND MARCH 2006.

NOTES:

1. **HORIZONTAL DATUM:** NEW YORK STATE PLANE COORDINATE SYSTEM (EAST ZONE, NORTH AMERICAN DATUM (NAD)83) **VERTICAL DATUM:** NORTH AMERICAN VERTICAL DATUM (NAVD)88
2. * PROPOSED GROUNDWATER REMEDIATION WELLS ARE CONCEPTUAL ONLY AND WILL BE DETERMINED IN THE FINAL DESIGN.
3. THE EXCAVATION LIMITS DEPICTED ARE APPROXIMATE AND WILL BE BASED ON FIELD OBSERVATIONS.



DECISION DOCUMENT
PURDY STREET STATION
BRONX, NEW YORK

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
NEW YORK, NEW YORK



Shallow Source Material
Excavation and Groundwater
Treatment

January 2015 Figure 2