DECISION DOCUMENT

Bayside (LIRR)
Voluntary Cleanup Program
Queens, Queens County
Site No. V00386
September 2011

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

DECLARATION STATEMENT - DECISION DOCUMENT

Bayside (LIRR)
Voluntary Cleanup Program
Queens, Queens County
Site No. V00386
September 2011

Statement of Purpose and Basis

This document presents the remedy for the Bayside (LIRR) 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 Bayside (LIRR) 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) All exposed on-site soils which exceed industrial SCGs in fenced areas and residential SCGs in unfenced areas will be excavated and transported off-site for disposal. It is estimated that approximately 210 cubic yards of soil will require removal to a depth of 1 to 4 feet, depending on location. An additional estimated 4 cubic yards of soil will be removed during the planned removal of a dry well at the site. In addition to the end point samples shown on Figure 2, sidewall samples will be collected in arsenic contaminated areas to confirm the lateral extent of arsenic contamination has been remediated. (Note: the lateral extent of mercury contamination has been adequately delineated). Back fill which meets the requirements of Part 375-6.7(d) will then be brought in to replace the excavated soil and establish the designed grades at the site.

2) A site cover currently exists and will be maintained to allow for industrial use of the site. Any site redevelopment will maintain a site cover, which may consist either of the structures such as buildings, pavement, and/or sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil 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). The upper six inches of the soil cover 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).

3) Imposition of an institutional control in the form of a deed restriction 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 industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

c. prohibits agriculture or vegetable gardens on the controlled property; and

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

4) A Site Management Plan is required, which will include the following:

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

i. the Institutional Controls described above;

ii. the existing site cover of ballast stone, buildings and pavement will provide engineering controls to limit access to contaminated soils.

This plan includes, but may not be limited to:

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

ii. a description of the provisions of the deed restriction including any land use and groundwater use restrictions;

iii. a provision for the management and inspection of the identified engineering controls;

iv. maintaining site access controls and Department notification; and

v. the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

5) Green remediation principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The major green remediation components are as follows;

a. Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;

b. Reducing direct and indirect greenhouse gas and other emissions;

c. Increasing energy efficiency and minimizing use of non-renewable energy;

d. Conserving and efficiently managing resources and materials; and

e. Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

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.

September 26, 2011

Date

Robert Cozzy, Director
Remedial Bureau B

DECISION DOCUMENT

Bayside (LIRR)
Queens, Queens County
Site No. V00386
September 2011

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: SITE DESCRIPTION AND HISTORY

Location: This Long Island Railroad (LIRR) Bayside site is an electrical substation for the Long Island Railroad. The site is located at the intersection of 216th St. and 41st Ave. in Bayside, Queens. The site is located in an urban area bordered by the LIRR tracks to the south, residential properties to the north and east, and a light industrial property to the west.

Site Features: The site is an approximately 0.25 acre area and includes an 1800 square foot, one story brick building and a 3600 square foot transformer yard.

Current Use: The site is railroad property operated by LIRR as an electrical substation to convert alternating current to direct current for the LIRR.

Historic Use: The historic use is the same as current use. From the early 1930s until 1951, the LIRR constructed electric substations that utilized mercury rectifiers. The last of these mercury rectifiers was removed and replaced with non-mercury solid state components in the early 1980s. Mercury contamination was found in and around this substation during a 2000 site investigation. At that time, prior to the RI, a soil removal was conducted in the area around the loading dock at the western end of the building. An area of approximately 200 square feet was excavated to a depth of 6 inches resulting in the removal of approximately 5 cubic yards of mercury contaminated soil.

Site Geology and Hydrology: The depth to groundwater is approximately 70 feet in the vicinity of the site. Assumed groundwater flow is direction is to the east. Soils at the site consist of sand and gravel from unconsolidated glacial outwash.

A site location map is attached as Figure 1.

SECTION 3: 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, alternatives (or an alternative) that restrict(s) the use of the site to industrial use as described in DER-10, Technical Guidance for Site Investigation and Remediation were/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 4: ENFORCEMENT STATUS

The voluntary cleanup agreement is with a responsible party. The agreement requires the party to address on-site and off-site contamination. Accordingly, no enforcement actions are necessary.

The Department and Metropolitan Transportation Authority/Long Island Railroad, entered into a multi-site Voluntary Cleanup Agreement on November 1, 2004. The Agreement provides for the volunteer to implement a full remedial program with NYSDEC oversight.

SECTION 5: SITE CONTAMINATION

5.1: 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 5.4.

5.1.1: 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

5.1.2: RI Information

The analytical data collected on this site includes data for:

- air
- groundwater
- soil

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:

mercury arsenic

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

- soil

5.2: 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.

There were no IRMs performed at this site during the RI.

5.3: 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.*

The site is completely fenced, which restricts public access.

5.4: Summary of Environmental Assessment

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

Nature and Extent of Contamination - Soil and groundwater samples were analyzed for the presence of volatiles, semi-volatiles, metals, and PCBs. Investigations indicate that mercury and arsenic, which have impacted shallow soils but not groundwater, are the contaminants of concern at this site. Mercury is found in shallow soil in the vicinity of the loading dock at the west end of the building and the entrance in the northeast corner of the building. Soil contaminated with arsenic is found in the transformer yard at the eastern end of the building. A small area of the soil exceeding SCGs near the northeast corner of the building are outside the substation fencing but are still located on substation property.

Forty surface and 94 subsurface soil samples were collected and analyzed as part of the RI. Thirteen surface soil samples exceed the industrial soil cleanup objective (SCO) for mercury of 5.7 parts per million (ppm). Two of these samples exceed 100 ppm with a maximum concentration of 158 ppm. Five surface soil and 10 subsurface soil samples exceed the industrial SCO for arsenic of 16 ppm with a maximum concentration of 69 ppm. A sample taken from the surface of a drywell bottom at the site slightly exceeded SCOs for mercury. The mercury contaminated areas of concern are an approximately 900 square foot combined area adjacent to the western and northeastern building entrances. The arsenic contaminated area of concern is an approximately 1,073 square foot area in the transformer yard at the east end of the building.

Three groundwater samples from the site contained tetrachloroethene and its breakdown products at combined concentrations ranging from 10 parts per billion (ppb) to 33 ppb, slightly exceeding groundwater standards. Methyl tert-butyl ether (MTBE) was also found in groundwater at concentrations up to 100 ppb, exceeding the groundwater standard of 10 ppb. Both contaminants impacting groundwater are migrating under this facility at depth from off-site.

Mercury vapor was not detected during a 56 point mercury vapor study in and around the substation building.

SECTION 6: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and evaluation of the remedial criteria are present 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 elements of the selected remedy, as shown in Figure 2, are as follows:

1) All exposed on-site soils which exceed industrial SCGs in fenced areas and residential SCGs in unfenced areas will be excavated and transported off-site for disposal. It is estimated that approximately 210 cubic yards of soil will require removal to a depth of 1 to 4 feet, depending on location. An additional estimated 4 cubic yards of soil will be removed during the planned removal of a dry well at the site. In addition to the end point samples shown on Figure 2, sidewall samples will be collected in arsenic contaminated areas to confirm the lateral extent of arsenic contamination has been remediated. (Note: the lateral extent of mercury contamination has been adequately delineated). Back fill which meets the requirements of Part 375-6.7(d) will then be brought in to replace the excavated soil and establish the designed grades at the site.

2) A site cover currently exists and will be maintained to allow for industrial use of the site. Any site redevelopment will maintain a site cover, which may consist either of the structures such as buildings, pavement, and/or sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil 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). The upper six inches of the soil cover 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).

3) Imposition of an institutional control in the form of a deed restriction 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 industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

c. prohibits agriculture or vegetable gardens on the controlled property; and

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

4) A Site Management Plan is required, which will include the following:

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

i. the Institutional Controls described above;

ii. the existing site cover of ballast stone, buildings and pavement will provide engineering controls to limit access to contaminated soils.

This plan includes, but may not be limited to:

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

ii. a description of the provisions of the deed restriction including any land use and groundwater use restrictions;

iii. a provision for the management and inspection of the identified engineering controls;

iv. maintaining site access controls and Department notification; and

v. the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

5) Green remediation principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The major green remediation components are as follows;

a. Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;

b. Reducing direct and indirect greenhouse gas and other emissions;

c. Increasing energy efficiency and minimizing use of non-renewable energy;

d. Conserving and efficiently managing resources and materials; and

e. Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

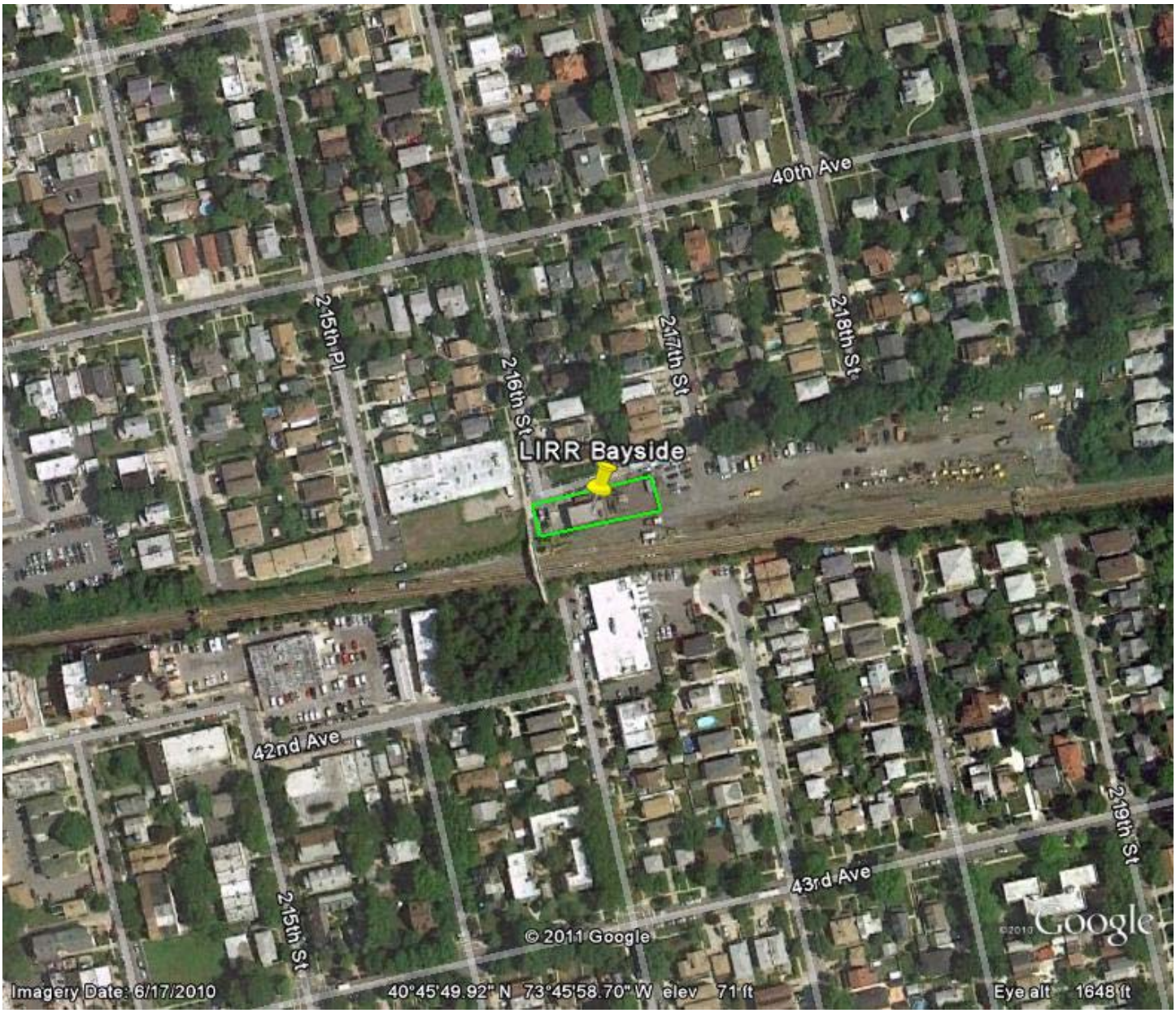
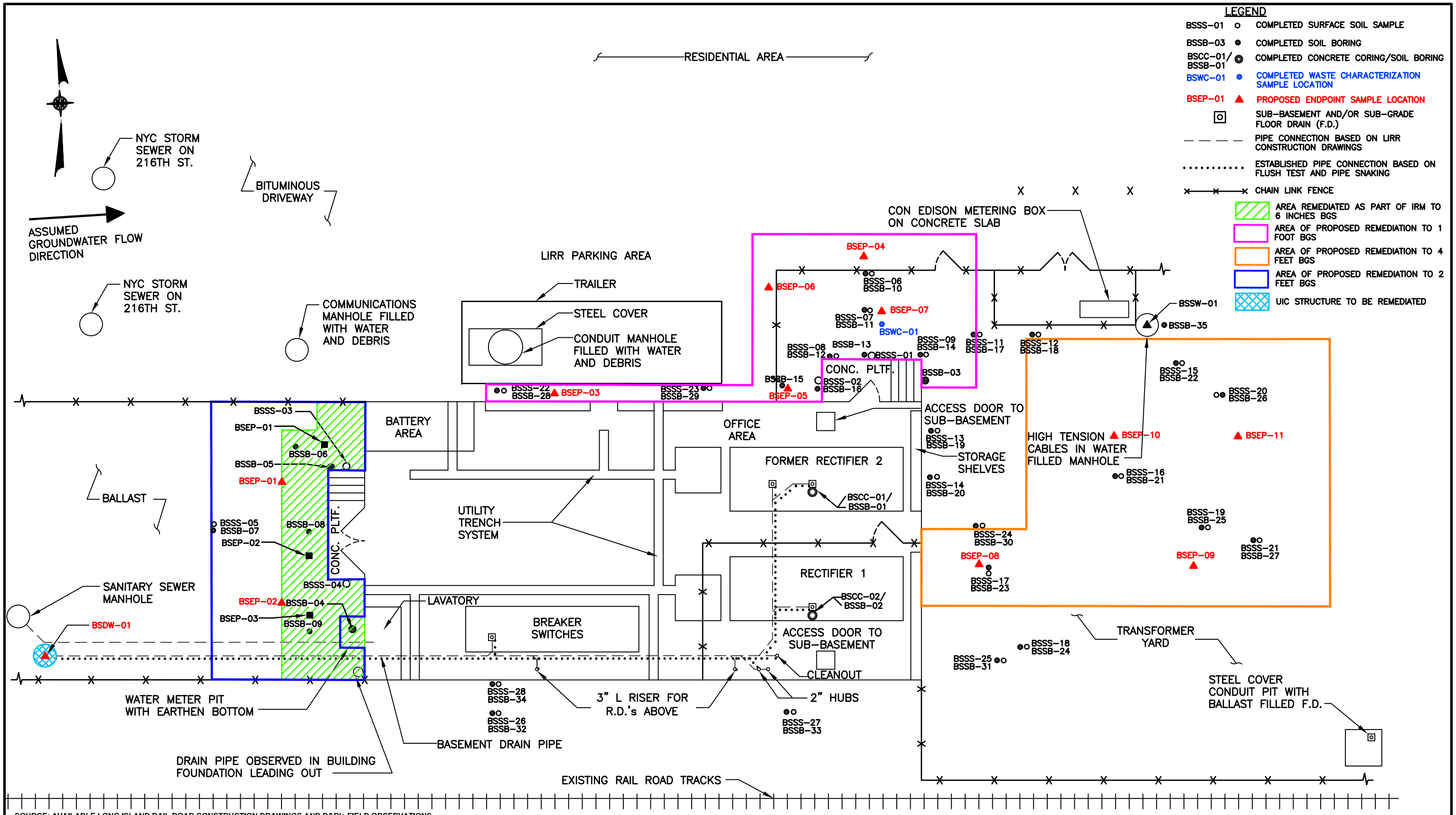

40th Ave
215th Pl
216th St
217th St
218th St
LIRR Bayside
42nd Ave
43rd Ave
215th St
219th St
© 2011 Google
Google
Imagery Date: 6/17/2010
40°45'49.92" N 73°45'58.70" W elev 71 ft
Eye alt 1648 ft

Figure 1



Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

LONG ISLAND RAIL ROAD
REMEDIAL ACTION WORK PLAN

0 5 10
SCALE IN FEET

BAYSIDE SUBSTATION (V00386-2)
ENDPOINT SAMPLE LOCATIONS AND REMEDIAL AREAS

FIGURE 1-3

Figure 2

F:\2229\BAYSIDE\2229sf ig 1-3 RAWP.dwg, 5/17/2011 10:03:40 AM, Adobe PDF