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Site Management Plan

for the

East Garden City Former Stewart Avenue Holder Station



Prepared for:

National Grid/Long Island Power Authority

Nassau County, New York



SITE MANAGEMENT PLAN

NATIONAL GRID/LONG ISLAND POWER AUTHORITY EAST GARDEN CITY FORMER STEWART AVENUE HOLDER STATION EAST GARDEN CITY, NEW YORK

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SITE MANAGEMENT PLAN EAST GARDEN CITY FORMER STEWART AVENUE HOLDER STATION

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EXECUTIVE SUMMARY

This Site Management Plan (SMP) was developed as an element of the Site Characterization program for the East Garden City Former Stewart Avenue Holder Station located in East Garden City, Nassau County, New York. The SMP documents the processes that will be followed for monitoring and managing contamination remaining at the Site. The SMP is applicable to both the Long Island Power Authority (LIPA) and New York Power Authority (NYPA) areas, and to the National Grid Gas area of the Site.

The Site is being addressed in accordance with the New York State Order of Consent and Administrative Settlement (OCAS) (Index No. A2-0552-0606) that National Grid signed with the New York State Department of Environmental Conservation (NYSDEC). The term "Site," as referenced herein, shall refer to the portions of the East Garden City Former Stewart Avenue Holder Station property that were the subject of the NYSDEC-approved Site Characterization, and as shown on Drawing 1 provided at the end of Section 1.0. In accordance with the OCAS, National Grid completed a Site Characterization for the Former Stewart Avenue Holder Station which is located on property owned by LIPA. The December 2011 East Garden City Former Stewart Avenue Holder Station Site Characterization Report was approved by the NYSDEC on February 7, 2012, with no further action requested, other than implementation of a SMP and the capping of a retired gas distribution pipe located in a secure area of the Site.

The Site originally had a three million cubic feet (ft³) tar-sealed gas storage holder, which was utilized to hold both manufactured gas and subsequently natural gas. Based on review of 1966 and 1970 aerial photographs and Sanborn Maps, the storage holder was decommissioned sometime between 1966 and 1970. The site currently serves as a National Grid natural gas gate station and as a LIPA electric substation.

This SMP provides a detailed description of the processes to be followed for managing the remaining contamination at the Site, including: (1) implementation and management of the Engineering and Institutional Controls (ECs/ICs); (2) monitoring of the Site ECs; (3) the





performance of periodic inspections and seven of results; and (4) submittal of Periodic Review Reports.

The following provides a brief summary of each portion of the SMP and the section of the plan where further details are provided:

Engineering and Institutional Control Plan (Section 2.0)

This section describes the process for the implementation and management of ECs/ICs at the Site. ECs existing at the Site include the following: Site security fencing, asphalt pavement and a maintained lawn covering the natural gas gate station area; and bluestone gravel in the fenced electric substation yard. In addition a concrete cap was installed to cover a retired gas pipe located within the natural gas gate station. A drawing detailing the locations of these features is provided at the end of Section 2.0.

ICs for the Site include an Environmental Easement, which enforces the execution of this SMP, limits the use of the Site to industrial purposes, restricts the use of on-site groundwater and controls excavation activities within the limits of the Site where documented contamination exists. A copy of the Environmental Easement will be provided in Appendix A. In addition, this SMP includes an Excavation Work Plan (EWP) to manage on-site excavations which may have the potential to encounter remaining low-level contamination on-site. The EWP is provided in Section 2.3.1.

Monitoring Plan (Section 3.0)

This section describes the measures for evaluating the performance and effectiveness of the ECs in reducing or mitigating exposure to low-level contamination remaining at the Site. As detailed above, ECs at the Site include asphalt, maintained lawn and gravel soil covers, Site security fencing and concrete covering a retired gas pipe located within the natural gas gate station. Annual monitoring of these ECs will be conducted for the first 5 years, unless a less





frequent schedule is otherwise approved by the NYSDEC. After 5 years, the monitoring frequency will be reviewed with the NYSDEC to determine any change in frequency. Monitoring programs are summarized in Section 3.0.

Site Management Reporting Plan (Section 4.0)

A Periodic Review Report will be submitted to the NYSDEC on an annual basis, beginning eighteen months after the "No Further Action" letter is issued by the NYSDEC. The Periodic Review Report will be prepared in accordance with NYSDEC DER-10 "Technical Guidance for Site Investigation and Remediation" requirements. The report will include an assessment of the EC/IC Plan and Monitoring Plan, results of the annual Site inspections, a compilation of deliverables generated during the reporting period and a certification of the ECs/ICs. Periodic review certification and reporting requirements are outlined in Sections 4.2 and 4.4.

If any portion of the Site is sold by LIPA, the new property owner for the sold property will then be responsible for working with National Grid to ensure proper implementation of the SMP.





1.0 INTRODUCTION AND SUMMARY OF SITE CONDITIONS FROM THE SITE CHARACTERIZATION REPORT

1.1 Introduction

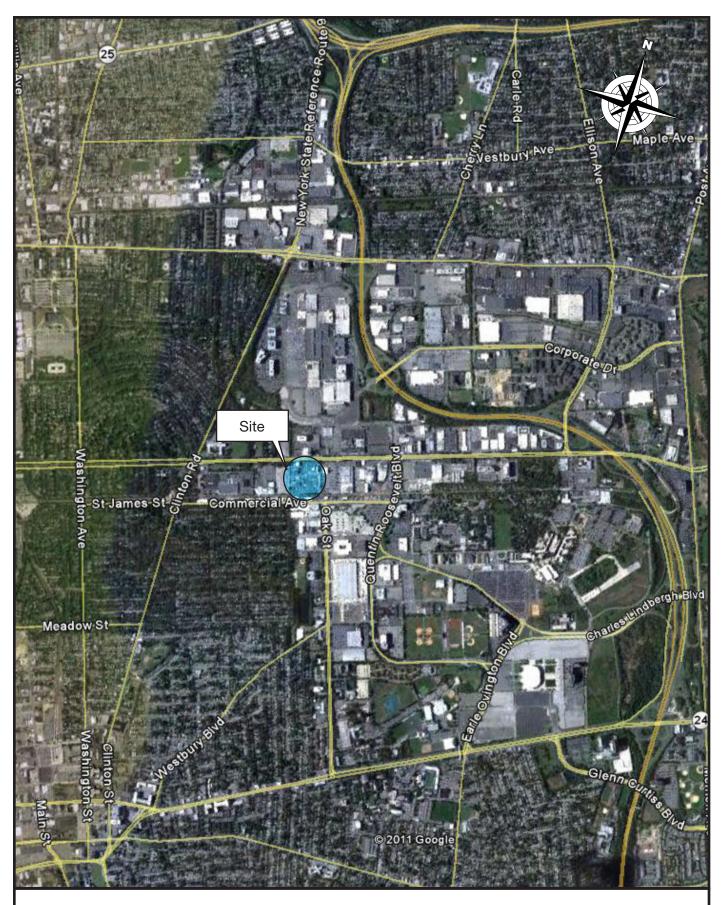
This SMP is provided for the National Grid East Garden City Former Stewart Avenue Holder Station, located in East Garden City, Nassau County, New York. The SMP is applicable to both the LIPA/NYPA areas and to the National Grid Gas area of the Site. The Site was investigated under the New York State Order of Consent and Administrative Settlement (OCAS) (Index No. A2-0552-0606) with the New York State Department of Environmental Conservation (NYSDEC). The term "Site," as referenced herein, shall refer to the portions of the East Garden City Former Stewart Avenue Holder Station property that were subject to the Site Characterization completed from April through June 2011, and as shown on Drawing 1 located in map pocket at end of Section 1.0. The December 2011 East Garden City Former Stewart Avenue Holder Station Site Characterization Report was approved by the NYSDEC on February 7, 2012.

1.1.1 General

As described above, National Grid (formerly the KeySpan Corporation) entered into an OCAS with the NYSDEC and completed a Site Characterization of the Site, which is located in East Garden City, Nassau County, New York (Figure 1-1). A map showing the Site location and boundaries is provided as Drawing 1, located in the map pocket at the end of Section 1.0. The boundaries of the Site that are subject to this SMP are more fully described in the metes and bounds Site description that accompanies the Environmental Easement (see Appendix A) and in the Land Title Survey provided in Appendix B.

As described in the Site Characterization Report, dated December 2011, low level manufactured gas plant (MGP)-related materials were observed in surface and subsurface soil at the Site, which is hereafter referred to as "remaining contamination."







East Garden City Former Stewart Avenue Holder Station
Garden City, NY
Site Location Map

FIGURE 1-1



This Site Management Plan (SMP) was prepared to manage the remaining contamination at the Site in perpetuity or until extinguishment of the Environmental Easement in accordance with Environmental Conservation Law (ECL) Article 71, Title 36. All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State (a copy of the NYSDEC approved Site Characterization Report is attached in Appendix C).

This SMP was prepared by Dvirka and Bartilucci Consulting Engineers (D&B), for National Grid, in accordance with the requirements in NYSDEC DER-10 "Technical Guidance for Site Investigation and Remediation," dated May 2010, and the guidelines provided by the NYSDEC. This SMP addresses the process for safely managing the Site and controlling any future subsurface activities where soil contamination remains.

1.1.2 Purpose

Based on the results of the completed Site Characterization, low levels of MGP-related materials were observed at the Site. Institutional and Engineering Controls (ICs/ECs) provide appropriate controls for managing the Site to ensure the protection of public health and the environment. An Environmental Easement accompanies the SMP to restrict Site use, and ensure proper maintenance, monitoring and reporting for the Site. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of the processes for managing the remaining contamination at the Site, including: (1) monitoring of the Site ECs/ICs; (2) the performance of periodic inspections and certification of results; and (3) the submittal of Periodic Review Reports.





1.1.3 Revisions

Revisions to this SMP will require NYSDEC approval. In accordance with the Environmental Easement for the Site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 Site Background

1.2.1 Site Location and Description

The Site is located on Stewart Avenue in East Garden City, Nassau County, New York. Primary access to the Site is from Stewart Avenue, which bounds the Site to the north. The Site, which is owned by LIPA, is approximately 10 acres in area, and currently contains a National Grid natural gas gate station and a LIPA electric substation. The natural gas gate station is present on the northern portion of the Site, and the electric substation (4H East Garden City electric substation) is present on the southern portion of the Site. A Site plan is included as Drawing 1, provided in a map pocket at the end of Section 1. The entire Site is owned by the Long Island Power Authority (LIPA). National Grid operates the natural gas gate station, LIPA operates the 4H East Garden City electric substation and NYPA owns other electrical equipment located in the northwestern portion of the Site. A NYPA transformer is also located in the eastern portion of the electric substation yard.

The majority of the Site is unpaved and covered with crushed stone. However, asphalt paving is present on the northern portions of the Site, primarily within private parking lots and access roads. As shown on Drawing 1, a small above and below ground natural gas piping network and associated regulator buildings are located in the northeastern portion of the Site where National Grid's natural gas gate station and piping are located. The surface of the natural gas gate station consists of both asphalted and grass covered areas. A complex network of above and below ground electric equipment and associated control buildings is located in the electric





substation yard in the southern portion of the Site, which is primarily covered with crushed stone. In addition, a National Grid office building (600 Stewart Avenue) and parking area are located on the northwestern portion of the Site, adjacent to Stewart Avenue. A chain link fence surrounds the majority of the Site, including all natural gas and electric substation equipment. Security gates require an access card and/or authorization to restrict entry to the electric substation yard and natural gas gate station.

1.2.2 Site History

The following discussion is based on a review of information obtained from National Grid and a review of available Sanborn (fire insurance) maps, historical aerial photographs and historical topographic maps.

A tar-sealed gas holder station operated at the Site from the 1940's or earlier, as indicated by the 1936 Sanborn map. The holder that operated at the Site was a remote gas distribution holder, with no gas production facilities on-site. The gas holder consisted of a cylindrical chamber approximately 145 feet in diameter. Based on available information, the gas holder was constructed on a concrete foundation that was left in place after the gas holder was removed. A small portion of the concrete gas holder foundation is visible at grade in the central portion of the Site.

By 1950, the owner of the Site was indicated as the Long Island Lighting Company (LILCO). The 1955 topographic map indicates that the Site was also utilized as an electric substation by that time. Based on review of the 1966 and 1970 aerial photographs and Sanborn Maps, the gas holder structure was removed from the Site between 1966 and 1970. According to the historical aerial photographs, additional electric substation structures were added after the removal of the gas holder structure.





Several previous investigations were conducted at the Site, as detailed in the reports identified below and summarized in the attached copy of the Site Characterization Report.

- Characterization of soil in the eastern portions of the electric substation yard by D&B and Fenley & Nicol (F&N) in January 2007 as part of National Grid's Neptune Interconnection Project;
- Pre-characterization of soil in the southeast portion of the natural gas gate station by Miller Environmental Group (MEG) in August 2007, prior to excavation activities to be performed by National Grid;
- Pre-characterization of soil in the northeast corner of the electric substation yard by D&B in September 2007, prior to excavation activities to be performed by National Grid;
- Characterization of soil throughout the electric substation yard by D&B in September 2007 during cable trenching activities performed by National Grid;
- Pre-characterization of soil in the southeast corner of the Ste by D&B in November 2007, prior to excavation activities to be performed by National Grid;
- An Interim Remedial Measure (IRM) was completed by D&B in the northeast corner of the substation yard in February 2008, based on the results of the September 2007 soil pre-characterization referenced above; and
- A Site Characterization of the natural gas gate station and electric substation portions of the Site was performed by D&B in April through June 2011.

1.2.3 Geologic Conditions

Topography

The topography of the Site is relatively flat, with a general topographic gradient sloping to the south. Ground surface elevation ranges from approximately 75 to 77 feet above mean sea level (msl). There are no surface water bodies located at or in the vicinity of the Site.





<u>Stratigraphy</u>

The Site is estimated to be underlain by approximately 1,000 feet of Cretaceous and Pleistocene-aged unconsolidated deposits, overlying a southeastward sloping bedrock. The unconsolidated deposits immediately overlying the bedrock were deposited during the Cretaceous age and form, in ascending order, the Raritan and Magothy formations, and the Upper Glacial aquifer.

The Raritan Formation consists of the Lloyd Sand and the Raritan Clay. The Lloyd Sand (also known as the Lloyd aquifer) is approximately 300 feet thick beneath the Site and consists of sand and gravel with some clay lenses. The Raritan confining unit consists of silty and solid clay, and lenses/layers of sand, with a thickness of approximately 100 feet. Because of low permeability, the Raritan Clay serves as a confining unit for the underlying Lloyd Sand.

The Magothy formation is a Cretaceous-aged deltaic unit consisting of alternating layers of fine sand, silts and clays considered to have moderate groundwater transmitting properties. However, due to the numerous clay-rich zones, it is highly anisotropic with vertical hydraulic conductivities being approximately 0.01 of horizontal values. The Magothy Formation, which is approximately 500 feet thick beneath the Site, is unconformably overlain by the glacial deposits of Pleistocene age (the Upper Glacial aquifer).

The Upper Glacial aquifer, a Pleistocene-aged unit, consists of glacial till and outwash deposits comprised of poorly to moderately sorted fine-coarse sand and gravel with variable amounts of clay and silt. The Upper Glacial aquifer is considered to have excellent groundwater transmitting properties, and may be as much as 100 feet thick beneath the Site. Boring logs from the Site Characterization provide direct observations of the Upper Glacial aquifer. These upper portions of the Upper Glacial aquifer are generally characterized as a light brown to tan/orange, well sorted sand, which can range from fine to coarse. The sand is often mixed with fine to





medium gravel, and little to no silt or clay. The water table is located in the glacial deposits of the unconfined Upper Glacial aquifer.

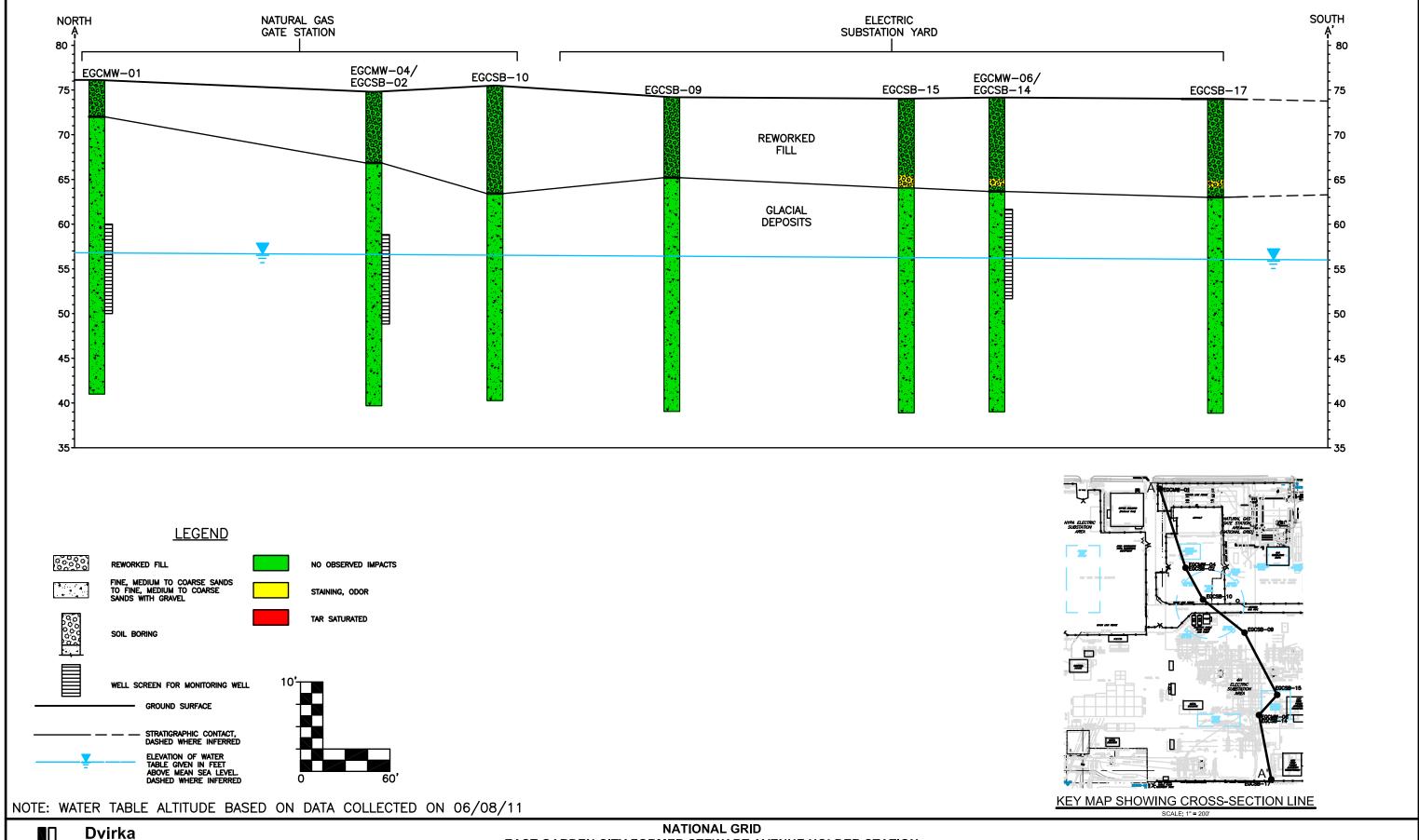
Throughout the Site, recent fill deposits overly the Upper Glacial aquifer immediately below the ground surface. All test pits and soil borings were completed in the fill deposits and the underlying Upper Glacial aquifer. However, all evidence of MGP-related materials was observed in the fill deposits. The following presents additional discussion and detail related to the fill deposits

Fill Deposits

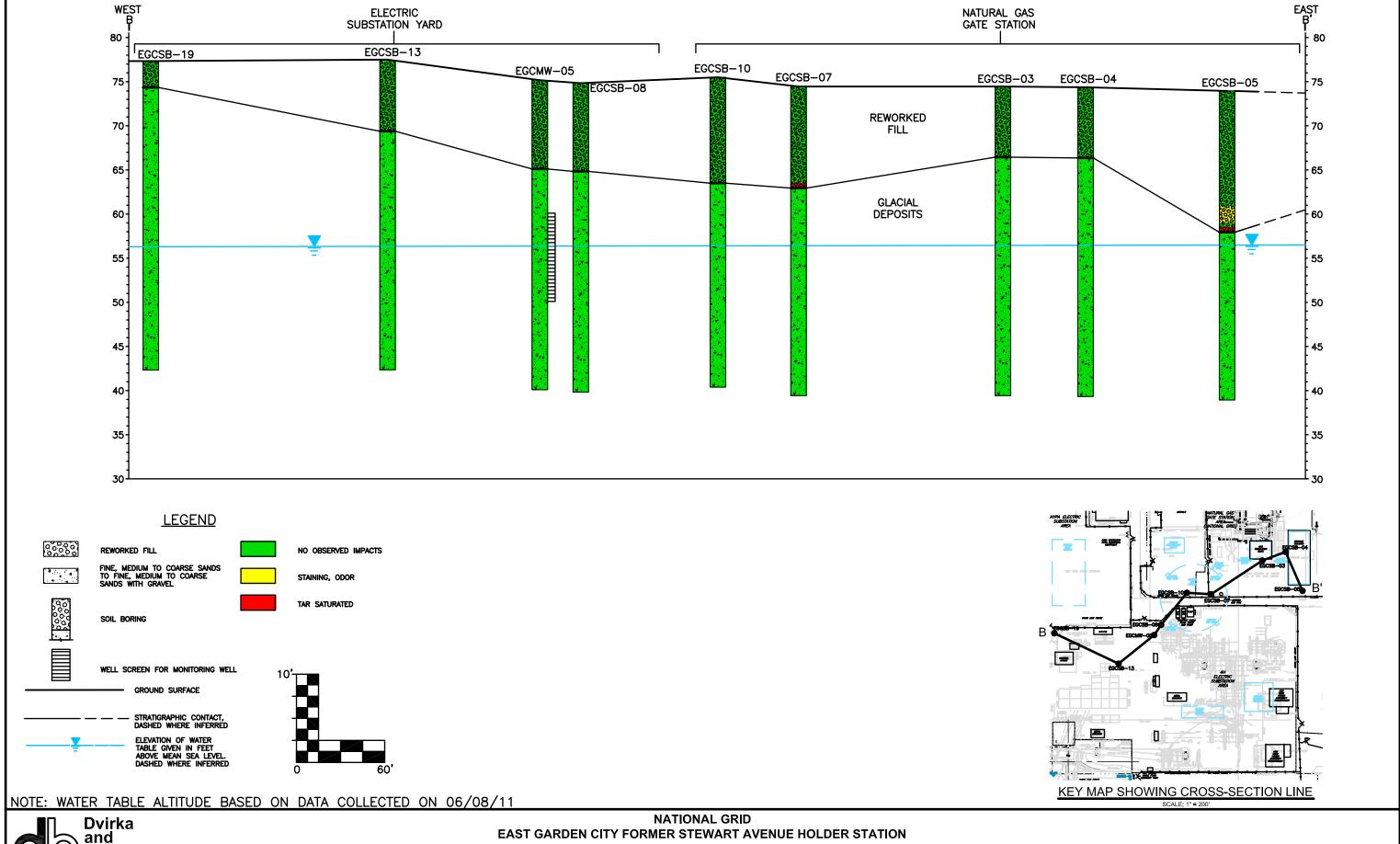
Recent (Holocene-aged) fill deposits are present across the Site, overlying the glacial deposits and the water table. Fill thickness at the site varies from approximately 4 to 12 feet thick. The transition from the fill deposits to the glacial deposits of the underlying Upper Glacial aquifer has been estimated based on the Site Characterization soil boring findings, and is depicted on Figures 1-2 and 1-3.

The deposits are comprised of a reworked fill consisting of fine to medium sand, some fine to medium gravel and varying amounts of anthropogenic material, such as concrete, brick and metal fragments, and coal clinker. The fill deposits are generally described as a brown to dark brown sand, which is often mixed with significant amounts of gravel. This soil is generally well graded and contains little or no silt and clay. The MGP-related impacts observed during the previous investigations were observed at a depth of approximately 4 to 10 feet below grade, and included gray and black staining, limited areas exhibiting a slight to moderate naphthalene-like and petroleum-like odor, limited areas of solid tar and varying amounts of coal clinker, including some coal clinker that exhibited a blue coloration. These impacts are generally confined to narrow zones within each effected soil boring.





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EAST GARDEN CITY FORMER STEWART AVENUE HOLDER STATION SITE CHARACTERIZATION **EAST-WEST GEOLOGIC CROSS SECTION B-B'**



Groundwater Flow

The water table is located within the Upper Glacial aquifer and is found at depths ranging from approximately 18 to 20 feet below grade. Shallow groundwater flows in a south to southeasterly direction beneath the Site. A water table contour map is provided as Figure 1-4.

1.3 Summary of Previous Investigation Findings

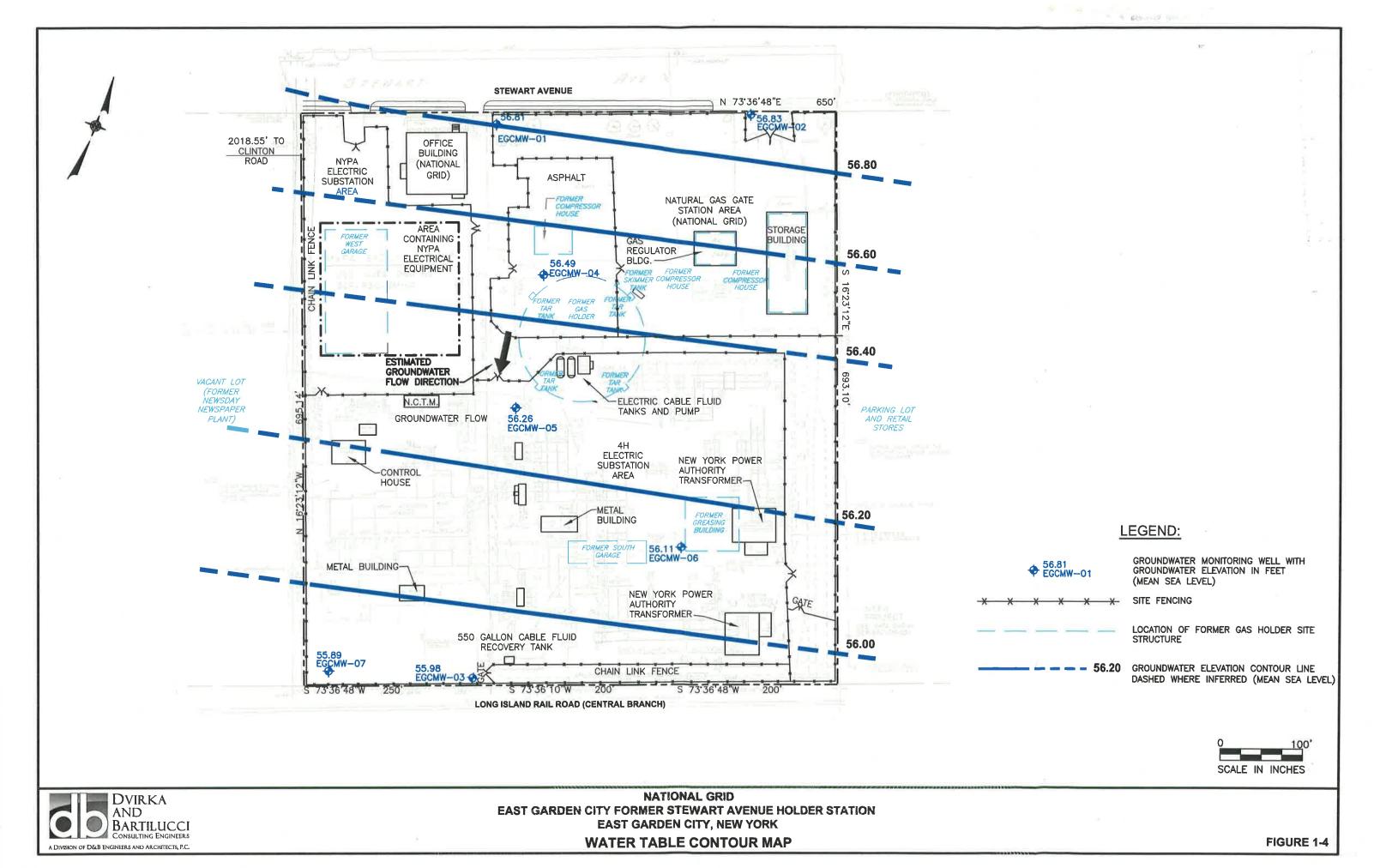
As described in Section 1.2.2, limited soil investigations were performed by D&B, F&N and MEG in 2007 and 2008, and primarily focused on shallow soil conditions in the electric substation yard and limited portions of the natural gas gate station. However, as detailed below, D&B also completed a Site Characterization of the natural gas gate station and electric substation portions of the Site. Sample locations from all investigations are provided on Drawing 1, at the end of this Section 1. The results of these investigations are briefly summarized below:

Characterization of Soil throughout the Electric Substation Yard - August 2007

The investigation findings from the soil characterization activities completed by D&B and F&N in the electric substation yard as part of National Grid's Neptune Interconnection Project are summarized below:

- Eight soil samples were collected and analyzed for VOCs, SVOCs, RCRA metals including cyanide, and PCBs. The most commonly detected compounds in these samples were PAHs, a subset of SVOCs, which can be characteristic of MGP residuals. The highest concentrations of PAHs were detected in soil borings located in the southeastern portion of the electric substation yard. In addition, this portion of the Site exhibited the most significant staining and odors, including a high percentage of coal clinker, black stained soil and a naphthalene-like odor.
- No analytes exceeded their respective Industrial SCOs in the eight collected subsurface soil samples, with the exception of benzo(a)pyrene, arsenic and mercury.





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Benzo(a)pyrene was detected at a concentration slightly exceeding its Industrial SCO of 1.1 mg/kg in two samples (2W and 3E) collected in the southeastern portion of the electric substation yard, ranging in concentration from 1.4 mg/kg to 2.4 mg/kg. Arsenic and mercury, at respective concentrations of 265 mg/kg and 6.47 mg/kg, were detected in exceedance their respective Industrial SCOs of 16.0 mg/kg and 5.7 mg/kg in one sample (3E), located in the southeastern corner of the electric substation yard.

Pre-characterization of Soil in the Natural Gas Gate Station - August 2007

The investigating findings from the soil pre-characterization activities completed by MEG in the southeast portion of the natural gas gate station are summarized below:

- As documented in boring logs provided by National Grid, the presence of coal clinker
 was noted in all soil borings from ground surface to depths ranging from 1 to 3 feet
 below ground surface. The boring logs also indicate the presence of stained soil and
 elevated PID readings in five of the six soil borings, with the greatest PID reading
 (29.0 ppm) detected at a depth of 3 feet below grade within soil boring B-3.
- Seven subsurface soil samples were collected and analyzed for VOCs, PAHs, Resource Conservation and Recovery Act (RCRA) metals and PCBs. Note that no analytes exceeded their respective Industrial SCOs in the collected subsurface soil samples, with the exception of arsenic and benzo(a)pyrene. Arsenic was detected above its Industrial SCO of 16.0 mg/kg in two subsurface soil samples ranging in concentration from 23.8 to 33.1 mg/kg. The maximum arsenic concentration was detected in subsurface soil boring B-3, located in the southeastern portion of the natural gas gate station. Benzo(a)pyrene was detected at a concentration of 1.90 mg/kg in soil boring B-3, slightly exceeding the Industrial SCO of 1.1 mg/kg.

<u>Pre-characterization/IRM of Soil Northeast Corner of the Electric Substation Yard – September 2007/January 2008</u>

The findings from the soil pre-characterization and IRM activities completed by D&B in the northeast portion of the electric substation yard are summarized below:

• Prior to an electric system upgrade in this area, National Grid advanced 14 pilot boreholes to depths of approximately 5 to 11 feet below ground surface in the northeastern corner of the electric substation yard. Subsurface soil samples were





collected from each borehole and were analyzed for BTEX, PAHs, RCRA metals and cyanide. Due to several of the above-referenced soil samples exhibiting arsenic and mercury concentrations in exceedance of the SCOs, a total of additional 10 boreholes were advanced in order to delineate the extent of arsenic and mercury contamination in shallow soil and two soil samples were collected from each of these additional borehole locations. All samples were analyzed for arsenic, mercury and PCBs.

- Soil samples collected from eight of the 24 total soil borings exhibited concentrations of contaminants above the Industrial SCOs. Concentrations of arsenic, above its SCO of 16.0 mg/kg, were detected in two soil samples ranging in concentration from 101 mg/kg to a maximum of 115 mg/kg. Concentrations of mercury above its SCO of 5.7 mg/kg were detected in seven soil samples ranging in concentration from 5.93 mg/kg to a maximum of 448 mg/kg. In addition, one subsurface soil sample exhibited a benzo(a)pyrene concentration of 2.08 mg/kg, above its SCO of 1.1 mg/kg. All of the samples exhibiting exceedances of the SCOs were collected from a reworked fill layer present at the site observed to extend to approximately 4 to 6 feet bgs. This reworked fill layer exhibits a slight to moderate gray to black staining and an occasional slight and intermittent hydrocarbon-like odor.
- In order to remediate the soil exhibiting the elevated arsenic and mercury concentrations described above and prior to the start of construction activities, an IRM consisting of the excavation of approximately 620 tons of soil was completed in this area. The excavation was completed to a depth of approximately 4 feet below ground surface. All final endpoint and side wall samples collected subsequent to soil excavation exhibited arsenic and mercury concentrations below the Industrial SCOs.

Characterization of Soil throughout the Electric Substation Yard - August 2007

The investigation findings from the soil characterization activities completed by D&B throughout the electric substation yard during National Grid's cable trenching activities are summarized below:

 A total of 22 subsurface soil samples were collected from locations corresponding to the locations of the nine cable trenches. Samples were collected from a depth ranging from 1 to 4 feet below ground surface and were generally analyzed for BTEX, PAHs, RCRA metals and PCBs.





- In general, the majority of detected contaminants, including arsenic, lead, mercury, and benzo(a)pyrene, were detected in the northeastern portion of the electric substation yard. Black staining and coal clinker were identified in the soil recovered from the borings located in the northeastern portion of the electric substation yard. Note that no analyte exceeded its respective Industrial SCO in the 22 collected subsurface soil samples, with the exception of benzo(a)pyrene. Benzo(a)pyrene was detected at a concentration of 1.68 mg/kg, slightly above the Industrial SCO of 1.1 mg/kg, in one subsurface soil sample [EGC07-02 (1 to 2 feet)] collected in the northeastern portion of the electric substation yard.
- The excavation of two of the nine proposed cable trenches was completed in April through June 2008. During this excavation work, D&B implemented a Community Air Monitoring Program (CAMP), collected waste characterization samples and provided visual inspection and air monitoring of the excavated soil. A black staining and coal clinker were identified in the majority of the upper 3 to 4 feet of the northernmost trench location. Due to the presence of soil staining observed in the western portion of the northern trench, three subsurface soil samples were also collected for laboratory analysis in this area, ranging from 4 to 6 feet below ground surface, and were analyzed for BTEX, PAHs, PCBs, RCRA metals and cyanide. No analyte exceeded its respective Industrial SCO in the three additional subsurface soil samples collected during the excavation of the two cable trenches.

Characterization of Soil in the Southeast of the Site - November 2007

The investigation findings from the soil characterization activities completed by D&B in the southeast corner of the Site prior to National Grid's excavation activities associated with maintenance of a gas valve are summarized below:

- D&B collected one subsurface soil sample in order to pre-characterize soil that would be disturbed as part of the subsequent maintenance of a gas valve located to the southeast of the electric substation yard. One subsurface soil sample was collected and analyzed for BTEX, PAHs, PCBs and RCRA metals.
- All analytes were detected at concentrations well below their respective Industrial SCOs. In addition, the soil recovered from the soil boring did not exhibit any staining, odors or coal clinker.





Site Characterization - April through June 2011

The investigating findings from the completed Site Characterization are summarized below:

- Reworked fill deposits were observed throughout the Site to a depth of approximately 8 to 12 feet below grade. Evidence of MGP-related materials were visually observed in these fill deposits in limited areas of the Site, including the former gas holder foundation, the southeastern portion of the natural gas gate station and the eastern portions of the electric substation yard. Evidence MGP-related fill includes observations of solid tar, black staining, slight to moderate naphthalene-like and petroleum-like odors, and the presence of coal clinker in limited areas of the Site;
- In general, low concentrations of several PAHs, TAL metals, total cyanide and PCBs were detected in the collected surface soil samples. No analyte was detected above its respective Industrial Use SCOs, except for benzo(a)pyrene, which was detected at a concentration of 2.1 mg/kg (above its Industrial Use SCO of 1.1 mg/kg) in one surface soil sample (EGCSS-02) collected in the northern portion of the Site. Based on these findings, the presence of MGP-related materials has generally not impacted surface soil conditions.
- A hardened tar and sediment sample (EGCTP-01) collected from the retired gas pipe located on the eastern side of the former gas holder foundation exhibited a total PAH concentration of 4,292 mg/kg, with seven individual PAHs including benzo(a)pyrene, benzo(a)anthracene, benzo(b)flouranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3- cd)pyrene and phenanthrene exhibiting concentrations above their respective Industrial Use SCOs.
- Laboratory analysis of the subsurface soil samples collected during the Site Characterization only identified relatively low concentrations of several PAHs, TAL metals, total cyanide and PCBs. Benzo(a)pyrene was the only contaminant found to exceed its Industrial Use SCO of 1.1 mg/kg in two of the 42 samples [EGCTP-01 (1 to 2 feet) and EGCSB-16 (8 to 10 feet)], and ranged in concentration from 1.5 mg/kg to 6.5 mg/kg. The highest benzo(a)pyrene concentration was associated with black-stained soil collected in sample EGCTP-01, collected along the foundation of the former gas holder.
- Trace concentrations of chlorinated VOCs and BTEX compounds were detected during the completed groundwater sampling, primarily in the upgradient monitoring wells.
 PCE, at a concentration of 6.1 ug/l, was detected above its Class GA Groundwater Standard of 5 ug/l in upgradient monitoring well EGCMW-01. However, chlorinated



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VOCs (such as PCE) are not contaminants associated with former MGP operations. It is likely that these VOCs originated from upgradient sources identified in the vicinity of the Site, including the ORCA NPL site and Award Packaging, a State Hazardous Waste Site, as well as a service station with at least one open petroleum spill located less than 1/8 of a mile upgradient of the Site.

Total cyanide was detected above its Class GA Standard of 200 ug/l in only one of the seven on-site monitoring wells (EGCMW-06), located in the eastern portion of the electric substation yard. Concentrations of total cyanide in EGCMW-06 were detected at 972 ug/l and 1,590 ug/l, with a free cyanide concentration of 46.4 ug/l. However, note that monitoring wells located further downgradient along the southern perimeter of the Site did not exhibit elevated concentrations of cyanide.

1.4 Summary of Remedial Actions

Based on the completed Site Characterization, NYSDEC approved the Site Characterization Report and is not requiring additional investigation or remediation at the Site. The SMP will be used to control Site activities into the future. Some hardened tar/sediment observed within a retired gas pipe was covered with concrete to prevent any future contact with this material. Note that the retired gas pipe is also located within the natural gas gate station, which is a secure, fenced location and requires an access card and/or authorization to enter.

As summarized in Section 1.3, an IRM consisting of the excavation of approximately 620 tons of soil was completed in April through June 2008 in the northeast corner of the electric substation yard in order to remediate soil exhibiting elevated arsenic and mercury concentrations detected in this area. The excavation was completed to a depth of approximately 4 feet below ground surface. All final endpoint and side wall samples collected subsequent to soil excavation exhibited arsenic and mercury concentrations were below the Industrial SCOs.

In addition, according to the NYSDEC Spills database, a LIPA dielectric cable fluid (DCF) spill occurred in the vicinity of the southern boundary of the Site in March 2003. The DCF was released to the subsurface under the Long Island Rail Road (LIRR) right-of-way (ROW) located to the immediate south of the Site, and was assigned Spill No. 0212271 by the NYSDEC. The spill





is currently listed as "open" by the NYSDEC and is still being remediated by LIPA. The remediation system included six recovery wells and two belt-skimming devices, which remove non-aqueous phase liquid (NAPL) and transfer it to a 550-gallon recovery tank located at the Site. Automated recovery operations ended in 2010 and ongoing remedial activities include manual recovery methods and occasional recovery by vacuum-enhanced fluid recovery with a vacuum truck

1.4.1 Removal of Contaminated Materials from the Site

As part of the IRM completed in the northeast corner of the electric substation yard in April through June 2008, approximately 620 tons of non-hazardous contaminated soil was excavated and transported off-site for recycling at Clean Earth Inc., a permitted waste thermal desorption facility located in Philadelphia, Pennsylvania.

Based on the results of the completed Site Characterization, no other remediation is required.

1.4.2 <u>Remaining Contamination</u>

<u>Soil</u>

In general, low concentrations of several PAHs, TAL metals, total cyanide and PCBs were identified in a limited number of surface soil samples during the Site Characterization field work. No analyte was detected above its respective Industrial Use SCOs, except for benzo(a)pyrene, which was detected at a concentration of 2.1 mg/kg (above its Industrial Use SCO of 1.1 mg/kg) collected in the northern portion of the Site. Note that this area is covered by a maintained lawn.





Relatively low concentrations of several PAHs, TAL metals, total cyanide and PCBs were identified in a limited number of subsurface soil samples during the previously completed subsurface soil activities and the April through June Site Characterization, with the higher contaminant concentrations detected in the eastern portion of the electric substation yard. Benzo(a)pyrene was detected at concentrations exceeding its Industrial Use SCO of 1.1 mg/kg in a limited number of subsurface soil samples, ranging in concentration from 1.5 mg/kg to 6.5 mg/kg. The highest benzo(a)pyrene concentration was associated with black-stained soil collected in association with the foundation of the former gas holder. Arsenic was detected at concentrations exceeding its Industrial Use SCO of 16.0 mg/kg in a limited number of subsurface soil samples collected from the eastern portion of the Site, and ranged in concentration from 23.8 mg/kg to 265 mg/kg. Mercury was detected at a concentration exceeding its Industrial Use SCO of 5.7 mg/kg in one subsurface soil sample located in the southeastern corner of the electric substation yard, and exhibited a concentration of 6.47 mg/kg. Note that these areas are covered by crushed stone.

In addition, a hardened tar and sediment sample collected from the retired gas pipe located on the eastern side of the former gas holder foundation exhibited a total PAH concentration of 4,292 mg/kg, with seven individual PAHs including benzo(a)pyrene, benzo(a)anthracene, benzo(b)flouranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene and phenanthrene exhibiting concentrations above their respective Industrial Use SCOs. Based on the results of the Site Characterization, the retired gas pipe was covered with concrete on June 1, 2012. Drawing 2, provided in a map pocket at the end of this section, summarizes all total benzene, toluene, ethylbenzene and xylene (BTEX) and total polycyclic aromatic hydrocarbon (PAH) concentrations for surface and subsurface soil samples, as well as the hardened tar/sediment sample collected from the retired gas pipe observed at the surface of the gas holder foundation. In addition, any concentrations detected above the Industrial Use SCOs are noted on Drawing 2 in bold font.



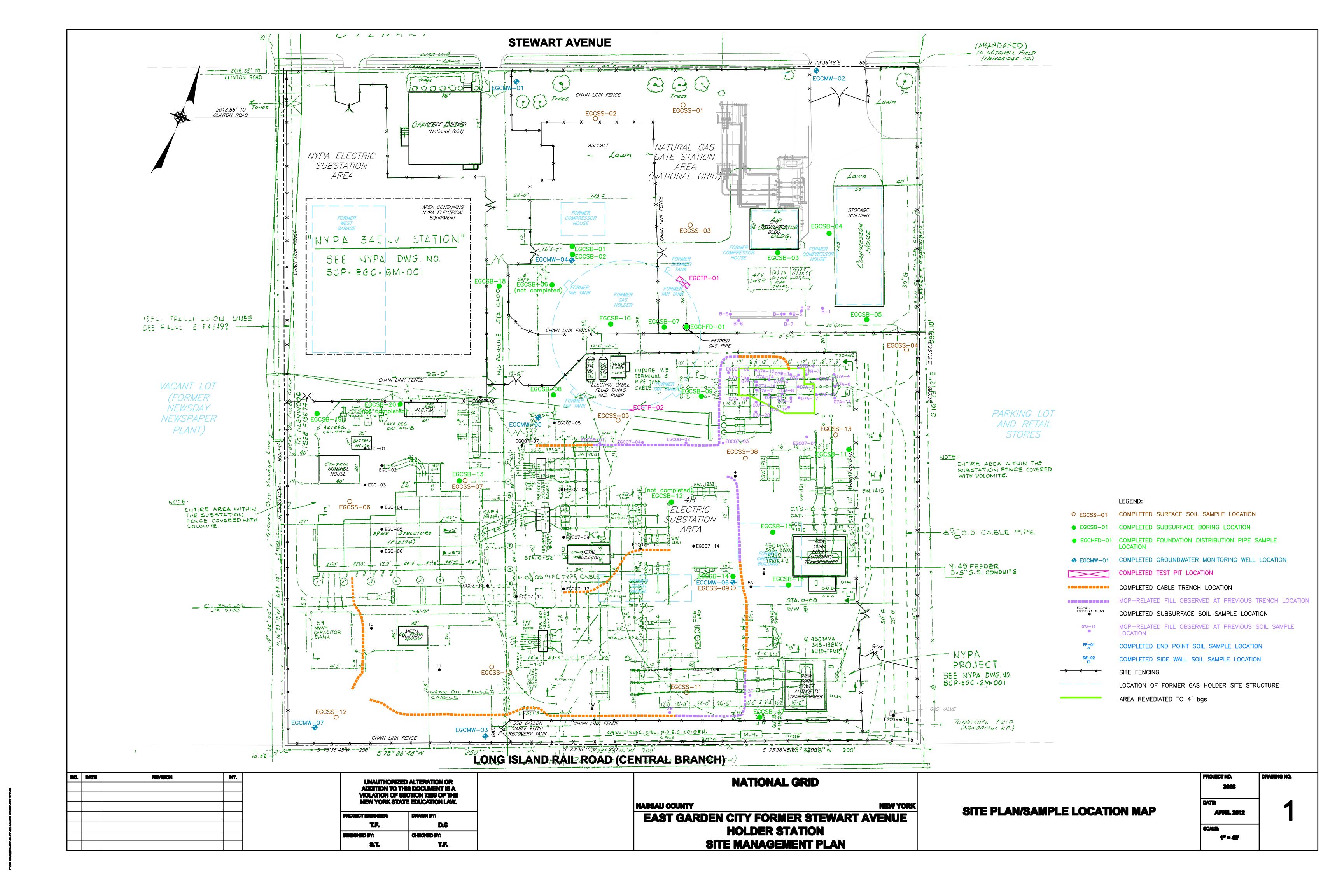


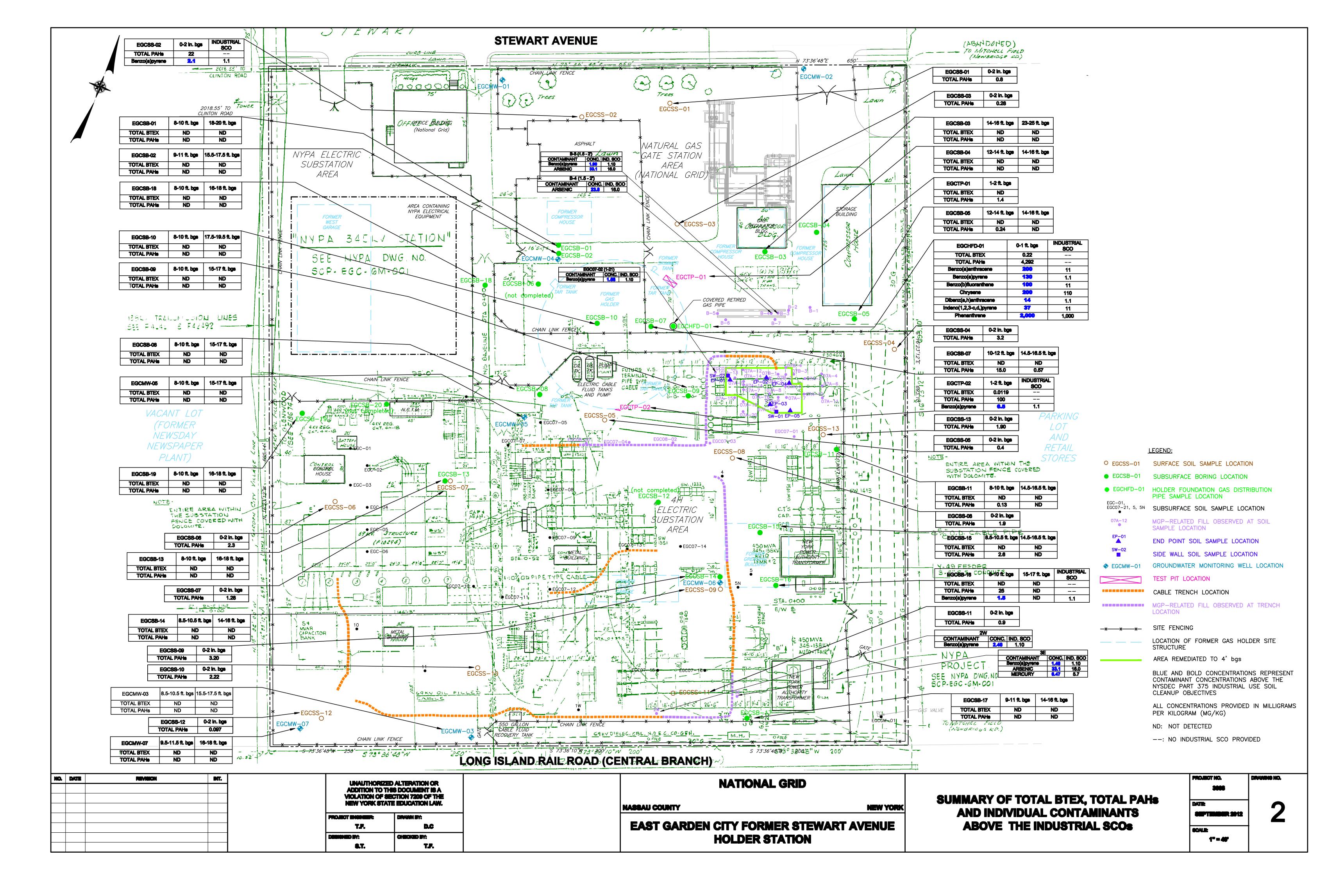
Groundwater

Trace concentrations of chlorinated VOCs and BTEX compounds were detected during the completed groundwater sampling, primarily in the upgradient monitoring wells. PCE, at a concentration of 6.1 ug/l, was detected above its Class GA Groundwater Standard of 5 ug/l in upgradient monitoring well EGCMW-01. However, chlorinated VOCs (such as PCE) are not contaminants associated with former MGP operations. It is likely that these VOCs originated from upgradient sources identified in the vicinity of the Site, including the ORCA NPL site and Award Packaging, a State Hazardous Waste Site, as well as a service station with at least one open petroleum spill located less than 1/8 of a mile upgradient of the Site.

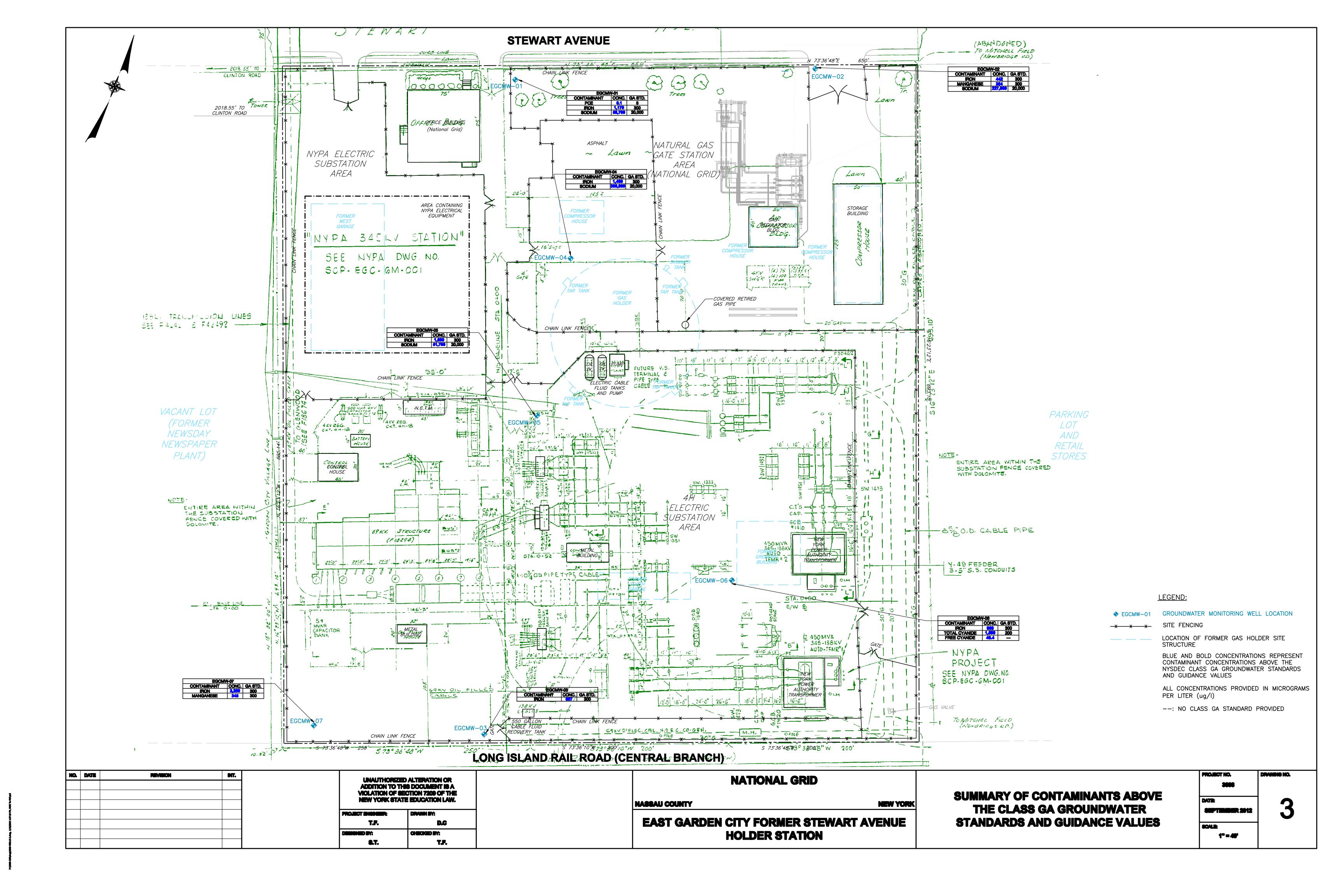
Total cyanide was detected above its Class GA Standard of 200 ug/l in only one of the seven on-site monitoring wells (EGCMW-06), located in the eastern portion of the electric substation yard. Concentrations of total cyanide in EGCMW-06 were detected at 972 ug/l and 1,590 ug/l, with a free cyanide concentration of 46.4 ug/l. However, monitoring wells located further downgradient along the southern perimeter of the Site did not exhibit elevated concentrations of cyanide. Drawing 3, provided in a map pocket at the end of this section, summarizes any contaminant concentrations detected above the Class GA Standards in the collected groundwater samples.







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2.0 ENGINEERING AND DESCRIPTION OF REMEDIAL PROGRAM



2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 Introduction

2.1.1 General

Since low-level soil contamination remains at the Site, the EC/ICs help to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the Site. The EC/IC Plan is one component of the SMP and is subject to revision by the NYSDEC.

2.1.2 Purpose

The purpose of this Plan is to provide:

- A description of all EC/ICs for the Site;
- The basic operation and intended role of each implemented EC/IC;
- A description of the key components of the ICs;
- A description of the features that should be evaluated during each periodic inspection and compliance certification period;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan for the safe handling of remaining contamination that may be disturbed during maintenance or redevelopment work at the Site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs, as determined by the NYSDEC.





2.2 Engineering Controls

2.2.1 Engineering Control Systems

As described in Section 1.4.4, the following ECs have been implemented at the Site to protect public health and the environment:

- Site Security Fencing A chain-link fence surrounds the majority of the Site, including all natural gas and electric substation equipment. The electric substation yard and natural gas gate station are not accessible to the public and access is only possible through security gates, which require a company-issued access card and/or authorization to open.
- Site Soil Covering The majority of the Site, including the areas where low-level remaining contamination have been identified, is covered by asphalt pavement and a maintained lawn in the northern portion of the Site (natural gas gate station), and crushed stone in the central and southern portions of the Site (electric substation yard).
- Retired Gas Pipe Covering Based on the elevated concentrations of several SVOCs detected within the exposed hardened tar/sediment observed within the retired gas pipe, this material has been covered with concrete on June 1, 2012 and has been left in place. Note that the retired gas pipe is located within the natural gas gate station, which is a secure, fenced location and requires an access card and/or authorization to enter.

A Site Engineering Control Plan depicting the locations of all ECs is provided as Drawing 2, at the end of Section 2.0. Procedures for the inspection and maintenance of these ECs are provided in the Monitoring Plan included in Section 3.0 of this SMP.

The Excavation Work Plan provided in Appendix D outlines the procedures required to be implemented in the event the soil cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed.





2.3 Institutional Controls

A series of Institutional Controls is required by the OCAS to: (1) implement, maintain and monitor the Site ECs; (2) prevent future exposure to low-level remaining contamination by controlling disturbances of the remaining subsurface contamination; and, (3) limit the use and development of the Site to industrial use only (unless other future uses are approved by the NYSDEC). Adherence to these ICs on the Site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Site ICs are:

- Compliance with the Environmental Easement and all elements of this SMP by the Grantor and the Grantor's successors and assigns;
- All ECs must be maintained as specified in this SMP;
- All ECs on the Controlled Property must be inspected and certified at a frequency and in a manner as defined in the SMP;
- Monitoring of the Site ECs must be performed as defined in this SMP; and
- Data and information pertinent to Site Management for the Controlled Property must be reported at the frequency and in a manner defined in this SMP.

ICs may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The Site has a series of ICs in the form of site restrictions. Adherence to these ICs is required by the Environmental Easement. Restrictions that apply to the Site are:

- Use of groundwater underlying the Site is prohibited without testing and/or treatment to ensure it is safe for the intended use;
- All future activities at the Site that will disturb the remaining contamination are prohibited unless they are conducted in accordance with this SMP;



- The Site can be used for industrial use only, provided that the long-term ECs/ICs remain in place, as described in this SMP.
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

2.3.1 Excavation Work Plan

Low-level remaining contamination exists in limited areas of the Site. However, note that all areas where remaining contamination have been identified are covered by asphalt pavement and a maintained lawn in the northern portion of the Site (natural gas gate station), and crushed stone in the central and southern portions of the Site (electric substation yard). Any future intrusive work that will penetrate this Site cover or encounter/disturb the low-level remaining contamination, and any modifications or repairs to the existing soil cover system, will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix D to this SMP. Intrusive construction work in contaminated areas must also be conducted in accordance with a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP), which shall be prepared by the contractor performing the excavation work in accordance with DER-10, 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. A summary of any intrusive construction work performed will also be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 4.0).

The Site owner and the contractor performing the excavation work, are completely responsible for the safe performance of all invasive work, the structural integrity of excavations,



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the identification of any buried utilities within the excavation area and for structures that may be affected by excavations (such as building foundations and footings). In addition, the Site owner will ensure that Site development activities will not interfere with, or otherwise impair or compromise, the ECs described in this SMP.

2.3.2 Soil Vapor Intrusion Evaluation

No soil vapor sampling was required by NYSDEC based on the Site history and conditions.

2.4 Inspections and Notifications

2.4.1 Inspections

Inspections of all ECs implemented at the Site will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive site-wide inspection will be conducted annually for the first 5 years, unless a less frequent schedule is otherwise approved by the NYSDEC. After 5 years, the monitoring frequency will be reviewed with the NYSDEC to determine any change in frequency. The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If the ECs continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- If Site records are complete and up to date; and
- Changes, or needed changes, to the any ECs.



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Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3.0). The reporting requirements are outlined in the Management Reporting Plan (Section 4.0).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the Site will be conducted within 5 days of the event to verify the status of the EC/ICs implemented at the Site by a qualified environmental professional.

2.4.2 Notifications

Relative to areas of the Site covered by this SMP, National Grid will provide notifications to the NYSDEC, as needed, for the following reasons:

- Sixty-day advance notice of any proposed changes in Site use that are required under the terms of the Voluntary Cleanup Agreement (VCA), 6 NYCRR Part 375, and/or Environmental Conservation Law.
- Fifteen-day advance notice of any proposed ground-intrusive activities in contaminated areas in accordance with the Excavation Work Plan.
- Notice within 5 business days of any damage or emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of ECs inplace at the Site, including a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring
 ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall
 describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the Site or the responsibility for implementing this SMP will include the following notifications:



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nationalgrid

At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the Order of Consent and Administrative Settlement,

and all approved work plans and reports, including this SMP

Within 15 days after the transfer of all or part of the Site, the new owner's name,

contact representative, and contact information will be confirmed in writing.

2.5 Contingency Plan

Emergencies may include injury to personnel, fire or explosion, environmental release, or

serious weather conditions.

2.5.1 Emergency Telephone Numbers

In the event of any environmentally-related situation or unplanned occurrence requiring

assistance, the Owner or Owner's representative(s) should contact the appropriate party from the

contact list as provided in Table 2-1. For emergencies, appropriate emergency response

personnel should be contacted. These emergency contact lists will be maintained in an easily

accessible location at the Site.

2.5.2 Map and Directions to Nearest Health Facility

Site Location: East Garden City Former Stewart Avenue Holder Station

Nearest Hospital Name: Winthrop Hospital

Hospital Location: 107 Mineola Boulevard, Mineola, N.Y. 11501

Hospital Telephone: 516-663-9494



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Directions to the Hospital: From the Site, head west on Stewart Avenue. Turn right at Franklin Avenue (1.2 miles). Continue on Mineola Boulevard (0.9 miles). Turn left onto 1st Street (0.2 miles). The hospital is located on the right (0.2 miles).

Total Distance: 2.5 miles

Total Estimated Time: 7 minutes

A map depicting the route to the hospital is provided as Figure 2-1.

2.5.3 Response Procedures

As appropriate, the Fire Department and other emergency response group will be notified immediately by telephone of the emergency. The emergency telephone number list is provided on Table 2-2. The list will also be posted prominently at the Site and made readily available to all personnel at all times.



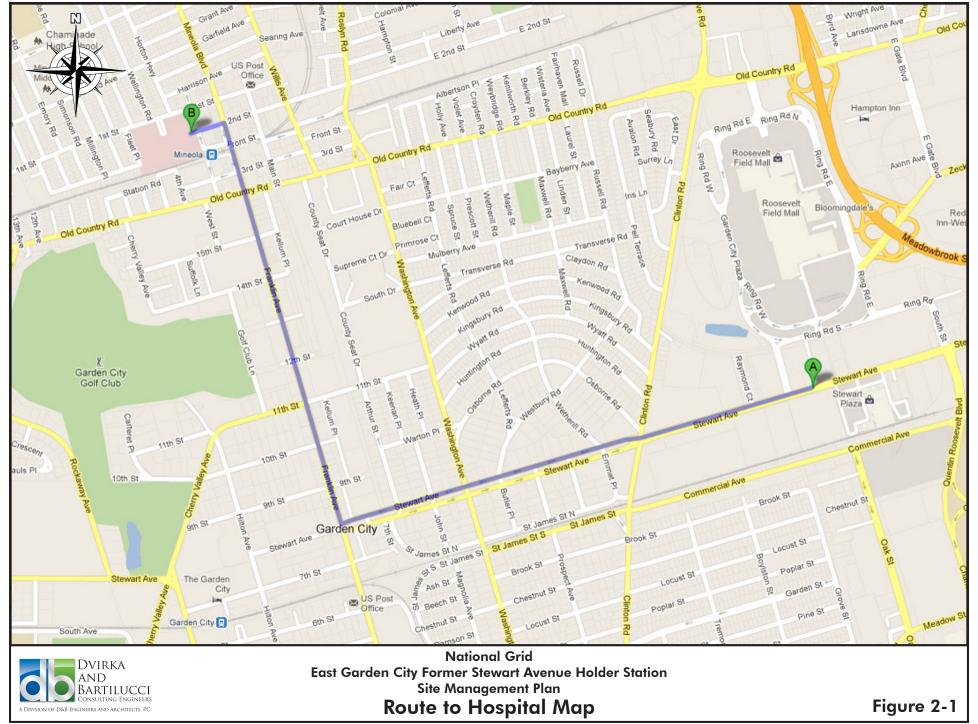


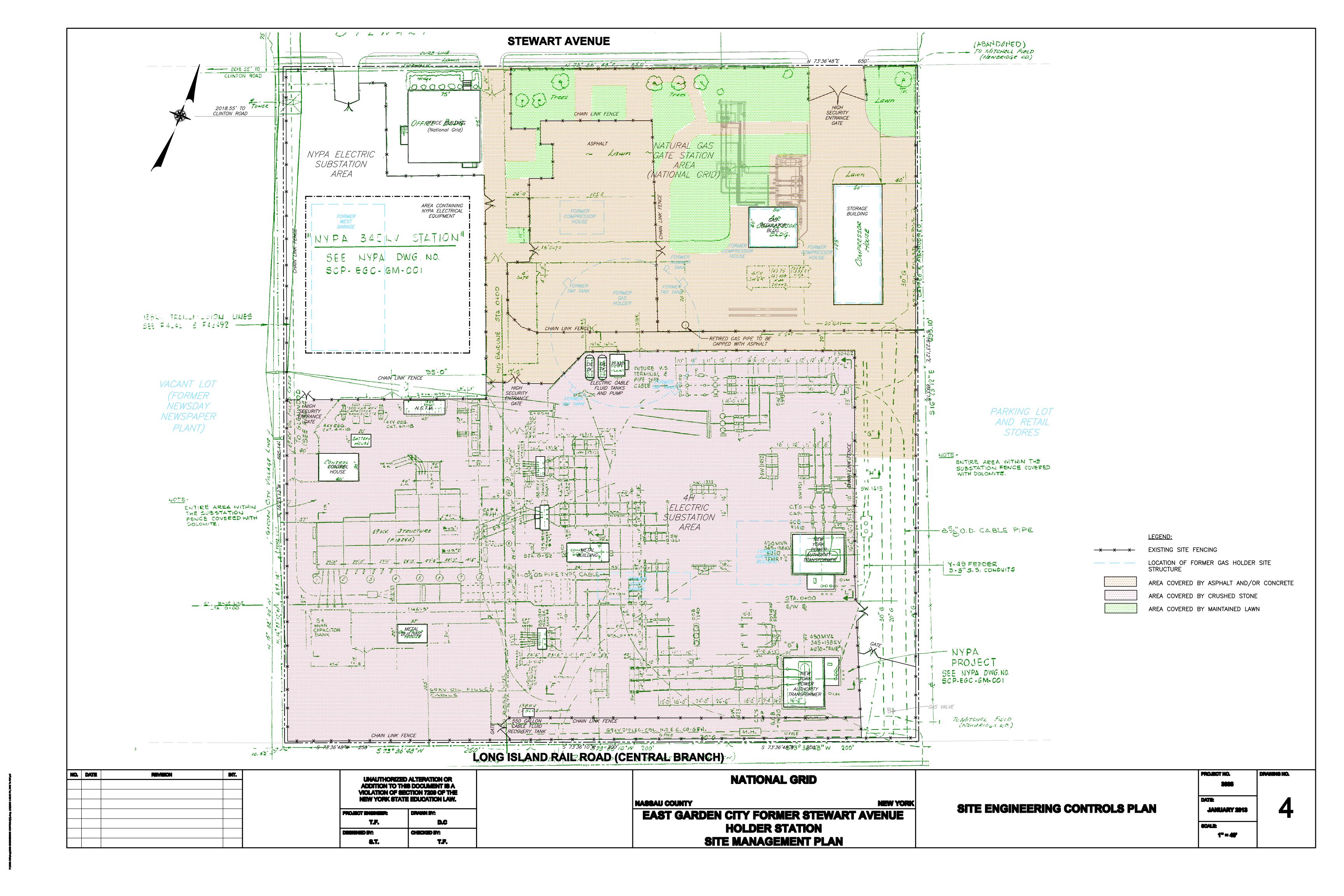


Table 2-1

EMERGENCY CONTACT NUMBERS

Agency	Phone Number		
Police Department:	911 or (516) 742-9600		
Fire Department:	911 or (516) 746-1301		
Ambulance	911 or (516) 742-9600		
Hospital	(516) 663-9494		
One Call Center:	(800) 962-7962		
Region 2 EPA Hotline	(800) 424-8802		
Poison Control Center:	(516) 542-2323		
National Response Center (NRC) for Oil/Chemical Spills	(800) 424-8802		
NYSDEC Spills Hotline	(800) 457-7362		

^{*} Note: Contact numbers subject to change and should be updated as necessary.





3.0 MONITORING PLAN

3.1 Introduction

3.1.1 General

This Monitoring Plan describes the monitoring to be performed for the Site ECs. This Monitoring Plan may only be revised with the approval of the NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Evaluating Site information periodically to confirm that the Site ECs continue to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information regarding:

- Inspection protocol and frequency;
- Reporting requirements; and
- Annual inspection and periodic certification.

Monitoring of the performance of the ECs will be conducted on an annual basis for the first 5 years following approval of this SMP. The frequency thereafter will be determined by the NYSDEC. Monitoring programs are outlined in detail in Section 3.2 below.





3.2 Engineering Control System Monitoring

Control of remaining contamination in Site soil is from the ECs described in Section 2.2.1.

3.2.1 Monitoring Schedule

As described above, the inspection frequency for the above-defined ECs will be on an annual basis for the first 5 years, unless a less frequent schedule is otherwise approved by the NYSDEC. After 5 years, the monitoring frequency will be reviewed with the NYSDEC to determine any change in frequency. Inspection will consist of a visual observation of all ECs to ensure they remain in place and have not been disturbed and/or damaged. Note that disturbance of the Site soil covering includes non-backfilled excavations and areas which appear to be eroding.

Inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections may take place when a suspected failure of any EC has been reported or an emergency occurs that is deemed likely to affect the operation of any EC.

3.2.2 Repair Schedule

If, after the completion of the inspections of the ECs, a deficiency and/or damage to an EC is noted, the deficiency and/or damaged EC shall be repaired by the Site owner in a timely manner, integrating appropriate engineering evaluation as necessary. All deficiencies and/or damaged ECs will be repaired or replaced in-kind. In addition, all repairs completed will be verified by a qualified environmental professional as part of their inspection of the engineering controls (see Section 4.0).





3.3 Groundwater Monitoring

Based on the results of groundwater sampling performed during the June 2011 Site Characterization, groundwater monitoring will be performed on a periodic basis at the Site, as detailed below.

Note that a site-wide network of monitoring wells (EGCMW-01 through EGCMW-07) was installed during the Site Characterization to establish groundwater flow directions and to monitor groundwater conditions beneath the Site. Well locations are depicted on Drawing 1, provided in a map pocket at the end of Section 1.0. The groundwater monitoring wells are generally screened ranging from 12.5 to 27 feet below grade and well construction logs are included in the Site Characterization report, provided as Appendix C.

Based on a total cyanide concentration of 972 ug/l detected in monitoring well EGCMW-06 during the Site Characterization, monitoring of total cyanide concentrations in groundwater monitoring wells EGCMW-03, EGCMW-06 and EGCMW-07 will be performed at the Site on an annual basis for an initial period of three years.

The sampling frequency may be modified with the approval NYSDEC. The frequency of future sampling events will be determined by the NYSDEC based on evaluation of the analytical data generated throughout this initial three-year period.

Sampling Protocol

All groundwater monitoring and sampling activities (e.g., water levels, groundwater quality readings, etc.) shall be recorded in a dedicated field book. Other observations (e.g., well condition, etc.) shall be noted on the Monitoring Well Field Inspection Log, provided in the Site Characterization Report, which serves as the inspection form for the groundwater monitoring well network.





All sample bottles, labels, shipping containers, trip blanks, and field blank water to be utilized throughout the sampling process shall be provided by an NYSDOH ELAP-certified analyzing laboratory.

Groundwater samples shall be collected as follows:

- The depth of water level within the well is measured in reference to the top of the PVC casing in order to calculate the liquid volume necessary for well purging. Water level measurements are obtained using a decontaminated electronic water level indicator.
- A decontaminated submersible pump and dedicated tubing is then inserted into the well, within the area of the well screen.
- The wells are purged until a minimum of three to five well volumes have been removed. Purge water generated from the wells will be contained for subsequent proper off-site disposal.
- Purge water is monitored for conductivity, dissolved oxygen, pH, temperature and turbidity. Results of the monitoring are recorded in a dedicated field book.
- Purging shall continue until the pH, temperature and conductivity have stabilized to within 10 percent for three consecutive readings, and a minimum of three well volumes have been removed from each well.
- Disposable polyethylene bailers with disposable nylon or polypropylene rope are then used to collect the groundwater samples selected for laboratory analysis. Samples are transferred directly to the laboratory-supplied sample containers.
- Sample containers to be submitted for laboratory analysis are labeled with the following information:
 - Site name;
 - Sample type (media);
 - Sample location;
 - Date and time of collection;
 - Field handling (e.g., filtration), if applicable;
 - Type of preservative added, if applicable; and
 - Initials of sampling technician.
- Quality assurance/quality control (QA/QC) samples are collected consistent with the requirements detailed below. QA/QC samples are to be identified as follows:
 - Matrix Spike and Matrix Spike Duplicate (MS/MSD); and





- Trip Blank (TB).

All samples are placed in an ice-filled cooler from the time of sample collection and are shipped within 24 hours under appropriate Chain of Custody (COC) procedures to the analytical laboratory.

Quality Assurance/Quality Control

Sample analysis, data quality requirements and assessments are conducted in accordance with the New York State Department of Environmental Conservation Analytical Services Protocol (ASP). In addition, the following QA/QC requirements are conducted as part of each sampling event:

- Sample containers are properly washed, decontaminated and appropriate preservative is added prior to their use by the analytical laboratory. The preservative used is noted on the sample container.
- Sample holding times are in accordance with the NYSDEC ASP requirements. All samples are shipped to the analytical laboratory within 24 hours of sample collection.
- Field QC samples are collected during groundwater monitoring events. This includes
 one MS/MSD sample collected at a frequency of once per every 20 groundwater
 samples In addition, one TB, as supplied by the analytical laboratory, will accompany
 all shipments to the analytical laboratory within each cooler where samples for
 aqueous-phase VOCs are to be analyzed.
- Samples are shipped in laboratory-supplied coolers with ice to ensure they are kept at a temperature of 4°F. A laboratory supplied Chain of Custody form is also included with all sample shipments.
- All field analytical equipment (PID, Horiba, etc.) is calibrated immediately prior to each use. Calibration procedures conform to manufacturer's standard instructions.
- The laboratory follows all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures are in accordance with the NYSDEC July 2005 ASP, or latest revision.





 Data validation checklists are prepared for each set of samples collected which will include a summary assessment of laboratory data packages, sample preservation and Chain of Custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability and completeness for each analytical method.

Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation impedes the performance of the monitoring wells, the wells may be rehabilitated/redeveloped by physically agitating/surging the affected well, as appropriate. Additionally, monitoring wells will be properly decommissioned and replaced in the event a monitoring well is damaged or rendered unusable.

Repairs and/or replacement of wells in the groundwater monitoring well network will be performed based on assessments of structural integrity and overall performance of the wells.

The NYSDEC will be notified prior to any decommissioning of monitoring wells, and any well decommissioning and replacement activities will be documented in Periodic Review Reports (PRRs) for each respective reporting period. Well decommissioning without replacement will not be completed without the prior approval of the NYSDEC. Monitoring wells that are decommissioned because they are unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC. In addition, well abandonment will be performed in accordance with the NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures."

3.4 Site-Wide Inspection

Site-wide inspections will be performed on a regular schedule at a minimum of once a year for the first 5 years, unless a less frequent schedule is otherwise approved by the NYSDEC. After 5 years, the monitoring frequency will be reviewed with the NYSDEC to determine any change in frequency. Site-wide inspections will also be performed after all severe weather conditions that may affect the Site ECs. During these inspections, an inspection form, as provided





in Appendix E, will be completed. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including Site usage;
- An evaluation of the condition and continued effectiveness of the Site ECs;
- General Site conditions at the time of the inspection;
- The Site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that Site records are up to date.

3.5 Monitoring Reporting Requirements

Forms and any other information generated during regular monitoring events and inspections will be kept on file at a central location. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP. Data will be reported in hard copy or digital format, as determined by the NYSDEC.





4.0 SITE MANAGEMENT REPORTING PLAN

4.1 Introduction

A Periodic Review Report (PRR) will be submitted to the NYSDEC, per the requirements outlined in Section 4.4.

In the event that the Site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the Site, as described in the Environmental Easement.

4.2 Certification of Engineering and Institutional Controls

Information on the EC/ICs can be found in the EC/IC Plan portion of the SMP. Inspection of the EC/ICs will occur at a frequency described in the Monitoring Plan. After the last inspection of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in New York State will sign and certify the document. The document will certify that:

- Site ECs/ICs are unchanged from the previous certification;
- Site use is compliant with the Environmental Easement;
- Site ECs/ICs remain in-place and are effective;
- Nothing has occurred that would impair the ability of the controls to protect the public health and environment;
- Access is available to the Site by the NYSDEC and NYSDOH to evaluate continued maintenance of such controls;
- The inspection of the Site to confirm the effectiveness of the IC/ECs was performed under the direction of the individual making this certification;
- To the best of their knowledge and belief, the work and conclusions described in the certification are in accordance with NYSDEC requirements;





- The information presented is accurate and complete; and
- The signed certification will be included in the PRR (see Section 4.4).

4.3 Site Inspections

4.3.1 <u>Inspection Frequency</u>

All inspections will be conducted at the frequency specified in the schedules provided in the Monitoring Plan section of this SMP. Inspections of remedial components will also be conducted whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

4.3.2 <u>Inspection Forms</u>

All inspections and monitoring events will be recorded on the forms which are provided in Appendix E. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records generated for the site during the reporting period will be included in the PRR.

4.3.3 Evaluation of Records and Reporting

The results of the inspection and Site monitoring data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- EC repair activities are being conducted properly; and





• The Site ECs continue to be protective of public health and the environment and are performing as designed.

4.4 Periodic Review Report

A PRR will be submitted on an annual basis, beginning eighteen months after the "No Further Action" letter is issued and within 45 days of the end of each certification period. The report will include:

- EC/IC certification;
- Results of the required annual Site inspections and severe condition inspections, if any;
- A compilation of all deliverables generated during the reporting period, such as inspection forms and other records, as specified in the EC/IC Plan and the Monitoring Plan;
- A summary of any information generated during the reporting period with comments and conclusions; and
- A Site evaluation, which includes the following:
 - The condition of all ECs, including identification of any needed repairs or modifications;
 - Any new conclusions or observations regarding Site contamination based on inspections or data generated by the Monitoring Plan;
 - Recommendations regarding any necessary changes to any EC and/or Monitoring Plan; and
 - The overall performance and effectiveness of the ECs.

The PRR will be submitted, in hard-copy format, to the NYSDEC - Region 1 Office, and in electronic format to NYSDEC Central Office and the NYSDOH Bureau of Environmental Exposure Investigation.





4.5 Corrective Measures Plan

If any EC/IC is found to be compromised, or if the periodic certification cannot be provided due to an issue with an EC/IC, a Corrective Measures Plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Plan until it is approved by the NYSDEC.



APPENDIX A

ENVIRONMENTAL EASEMENT



BARCLAY DAMON

Joan M. Lamson Paralegal

September 18, 2017

VIA OVERNIGHT MAIL

Joseph S. Giordano National Grid Legal Department 175 East Old Country Road Hicksville, NY 11801

Re: <u>Site No. 130120</u>

East Garden City Former Stewart Avenue Holder Station - Environmental

Easement

Dear Joe:

Enclosed please find the original recorded Environmental Easement pertaining to the above-referenced site. Please retain this document in National Grid's Corporate Records Center.

If you have any questions, please do not hesitate to contact our office.

Very truly yours,

Joan M. Lamon

✓oan M. Lamson

Enclosure



Nassau County Maureen OConnell **County Clerk** Mineola, NY 11501

Instrument Number: 2017-00083385

D06 - AGREEMENT

Recorded On: August 23, 2017 Parties: LONG ISLAND LIGHTING CO

TO PEOPLE OF THE STATE OF NEW YORK

Billable Pages: 4

Num Of Pages: 10

Comment:

Recorded By: ALL STATE ABSTRACT CORP

** Examined and Charged as Follows: **

D06 - AGREEMENT

Blocks - Deeds - \$300 95.00

300.00

Recording Charge:

395.00

Property Description:

Line Section

Block

Lot 20

Unit

Town Name

HEMPSTEAD

D

Tax Amount :

RE 2107

Consideration: Tax Charse:

.00

** THIS PAGE IS PART OF THE INSTRUMENT **

I hereby certify that the within and foregoing was recorded in the Clerk's Office For: Nassau County, NY

File Information:

Record and Return To:

Document Number: 2017-00083385

Receipt Number: 781745

Recorded Date/Time: August 23, 2017 10;41:41A

Book-Vol/Pg: Bk-D VI-13549 Pg-494

BARCLAY DAMON LLP

BARCLAY DAMON TOWER

125 E JEFFERSON STREET **SYRACUSE NY 13202-9801**

Cashier / Station: 0 SDS / NCCL-FLKTFQ1



aureen D'Connell

County Clerk Maureen O'Conneil

Record + Return

Borday Doctor, LLP

Sorday Doctor, LLP

OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

Sorday Doctor, OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

This indentity of Nacron State of State of Office at 333 Earle Ovington Boulevard, Uniondale New York 11553, County of Nacron State of Stat office at 333 Earle Ovington Boulevard, Uniondale, New York 11553, County of Nassau, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233.

> WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

> WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

> WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

> WHEREAS, Grantor, is the owner of real property located at the address of Stewart Avenue in the Town of Hempstead, County of Nassau and State of New York, known and designated on the tax map of the County Clerk of Nassau as tax map parcel numbers: Section 44 Block D Lots 20, 22 and 24, being the same as that property conveyed to Grantor by deeds dated February 18, 1927, June 1, 1927, December 28, 1927, December 28, 1927 and September 1, 1933 and recorded in the Nassau County Clerk's Office in Liber and Page 1193/411, 1237/275, 1318/46, 1318/48 and 1772/267, respectively. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 10.343 +/- acres, and is hereinafter more fully described in the Land Title Survey dated May 22, 2014 and last revised August 8, 2016 prepared by David Dyal Rupnarain, L.L.S. of KS Engineers, P.C., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Order on Consent Index Number: A2-0552-0606, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

- 1. <u>Purposes</u>. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.
- 2. <u>Institutional and Engineering Controls</u>. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.
 - A. (1) The Controlled Property may be used for:

Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

- (2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);
- (3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;
- (4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Nassau County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;
- (5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;
- (6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

- (8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;
- (9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;
- (10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.
- B. The Controlled Property shall not be used for Residential, Restricted Residential or Commercial purposes as defined in 6NYCRR 375-1.8(g)(i), (ii) and (iii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.
- C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

- D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.
- E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation

pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

- F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.
- G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:
- (1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).
 - (2) the institutional controls and/or engineering controls employed at such site:
 - (i) are in-place;
- (ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and
- (iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;
- (3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;
- (4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;
- (5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;
- (6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and
 - (7) the information presented is accurate and complete.
- 3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.
- 4. <u>Reserved Grantor's Rights</u>. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:
- A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;
- B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

- B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.
- C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.
- D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.
- 6. <u>Notice</u>. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: 130120

Office of General Counsel

NYSDEC 625 Broadway

Albany New York 12233-5500

With a copy to:

Site Control Section

Division of Environmental Remediation

NYSDEC 625 Broadway Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and

communicating notices and responses to requests for approval.

7. <u>Recordation</u>. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

- 8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.
- 9. <u>Extinguishment.</u> This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.
- 10. <u>Joint Obligation</u>. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Long Island Lighting Company d/b/a Long Island Power Authority:

By: Thorse Fed	Tare
Print Name: Thomas	Falcone
Title: CEO	Date: 5/17/17

Grantor's Acknowledgment

STATE OF NEW YORK)	
) ec.	
COUNTY OF NASSAY)	
On the <u>17</u> day of <u>May</u> , in personally appeared <u>May</u> person of satisfactory evidence to be the individual(s) instrument and acknowledged to me that he/capacity(ies), and that by his/her/their signature(person upon behalf of which the individual(s) acte	whose name is (are) subscribed to the within she/they executed the same in his/her/theirs) on the instrument, the individual(s), or the
Notary Public State of New York	ALEXANDRE POZDNYAKOV Notary Public, State of New York
	No. 02P06235981 Qualified in New York County Commission Expires February 22, 20 19

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting—By and Through the Department of Environmental Conservation as Designee of the Commissioner.			
Ву:			
Robert W. Schick, Director			
División of Environmental Remediation			
Grantee's Acknowledgment			
STATE OF NEW YORK)			
COUNTY OF ALBANY)			
On the day of, in the year 2017, before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument. Notary Public - State of New York			
David J. Chiusano Notary Public, State of New York No. 01CH5032146			
Qualified in Schenectady County			
Commission Expires August 22, 20 LK			

SCHEDULE "A" PROPERTY DESCRIPTION

LEGAL DESCRIPTION SECTION 44, BLOCK D LOTS 20, 22, AND 24
VILLAGE OF GARDEN CITY, TOWN OF HEMPSTEAD,
NASSAU COUNTY, NEW YORK

BEGINNING AT A GRANITE MONUMENT MARKING A POINT OF INTERSECTION WITH THE SOUTHERLY SIDELINE OF STEWART AVENUE AND THE COMMON LOT LINE OF LOTS 346B AND 20, BLOCK D, SECTION 44, HAVING A N.Y.S.P.C.S. L.I. ZONE (NAD83) COORDINATE VALUE OF N:205934.64 E:1091534.62, SAID POINT ALSO BEING N 73° 22' 36" E 2018.29' FROM THE INTERSECTION OF THE EASTERLY SIDELINE OF CLINTON STREET AND THE SOUTHERLY SIDELINE OF STEWART AVENUE, THENCE;

- 1. EASTERLY ALONG THE SOUTHERLY SIDELINE OF STEWART AVENUE N 73° 22' 36" E 650.00' TO A POINT, THENCE;
- SOUTHERLY LEAVING SAID SOUTHERLY SIDELINE, ALONG THE COMMON LINE AS DESCRIBED IN DEED BOOK 1772 PAGE 267, COURSE No. 2 AND DEED BOOK 12231 PAGE 65, PARCEL 1, COURSE No. 6, S 16° 37' 34" E 693.14' TO A POINT IN THE NORTHERLY RIGHT OF WAY LINE OF THE LONG ISLAND RAIL ROAD, THENCE;
- 3. WESTERLY ALONG SAID NORTHERLY RIGHT LINE S 73° 22' 26" W 650.00' TO A POINT, THENCE;
- 4. NORTHERLY ALONG THE COMMON LOT LINE OF LOTS 346B AND 20, BLOCK D, SECTION 44, N 16° 37' 34" W 693.14' TO THE POINT OR PLACE OF BEGINNING

CONTAINING 450,541 SQ. FT. OR 10.343 ACRES

SUBJECT TO: EASEMENTS AS DESCRIBED IN DEED BOOK 10630 PAGE 847, AREA "A"

DEED BOOK 10630 PAGE 847, AREA "B"

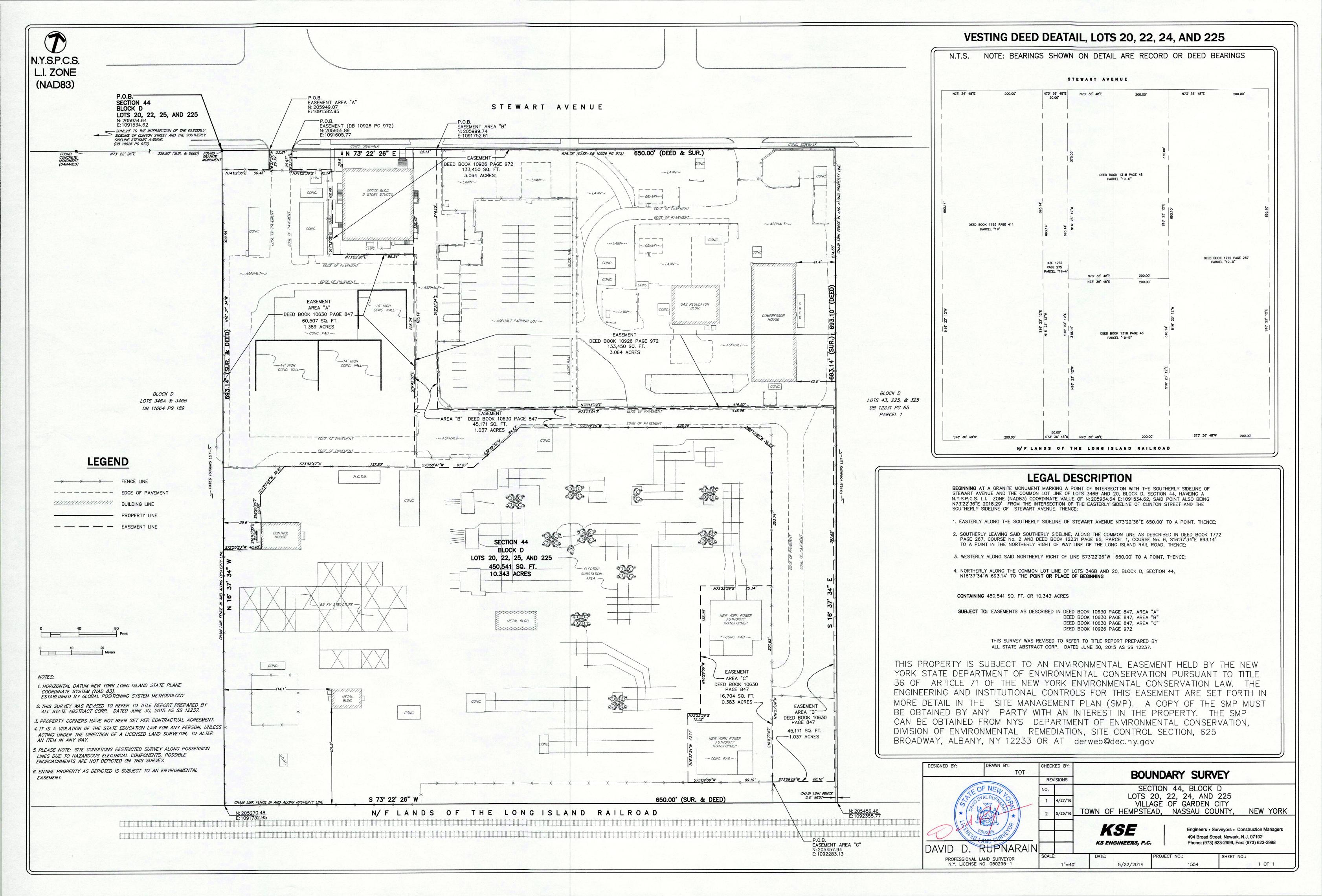
DEED BOOK 10630 PAGE 847, AREA "C"

DEED BOOK 10926 PAGE 972

APPENDIX B

LAND TITLE SURVEY





APPENDIX C

NOVEMBER 2011 EAST GARDEN CITY FORMER STEWART AVENUE HOLDER STATION
SITE CHARCTERIZATION REPORT



nationalgrid

Site Characterization Report

for the

East Garden City Former Stewart Avenue Holder Station



Prepared for:

National Grid

Hicksville, New York



nationalgrid

December 13, 2011

Mr. R. Scott Deyette Division of Environmental Remediation New York State Department of Environmental Conservation 625 Broadway Albany, NY 12233-7014

Re:

East Garden City Former Stewart Avenue Holder Station

Site Characterization Report

Dear Mr. Deyette:

Enclosed for your review, please find one hard copy and one CD copy of the *Site Characterization Report* for the East Garden City Former Stewart Avenue Holder Station.

Please contact me at (516) 545-2578 or Sarah Aldridge at (516) 545-2568 if you have any questions or comments.

Sincerely,

Patrick J. Van Rossem Project Manager

PVR/ST/jmy,lf

cc:

- S. Karpinski (NYSDOH)
- J. DeFranco (NCDH)
- G. Sparacio (LIPA)
- S. Aldridge (National Grid)
- T. Leissing (National Grid)
- F. Murphy (National Grid)
- S. Tauss (D&B Engineering)
- ♦ 3008\MISC11LTR.DOC-04(R02)

SITE CHARACTERIZATION REPORT FOR THE EAST GARDEN CITY FORMER STEWART AVENUE HOLDER STATION EAST GARDEN CITY, NEW YORK SITE NO. 130120

Prepared for:

NATIONAL GRID HICKSVILLE, NEW YORK

Prepared by:

DVIRKA AND BARTILUCCI CONSULTING ENGINEERS WOODBURY, NEW YORK

DECEMBER 2011



SITE CHARACTERIZATION REPORT FOR THE EAST GARDEN CITY FORMER STEWART AVENUE HOLDER STATION EAST GARDEN CITY, NEW YORK

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EXECUTIVE SUMMARY

National Grid contracted Dvirka and Bartilucci Consulting Engineers (D&B) to conduct a Site Characterization of the East Garden City Former Stewart Avenue Holder Station (hereinafter referred to as the Site) located in East Garden City, New York. National Grid is working under an Order of Consent and Administrative Settlement (Index No. A2-0552-0606) with the New York State Department of Environmental Conservation (NYSDEC) to investigate and, if necessary, remediate potential contamination at multiple sites on Long Island and in New York City. A three million cubic feet (ft³) tar-sealed gas storage holder formerly existed at the East Garden City Site, which was utilized to hold both manufactured gas and natural gas. Based on review of the 1966 and 1970 aerial photographs and Sanborn Maps, the storage holder was decommissioned sometime between 1966 and 1970. While the Site was not a Manufactured Gas Plant (MGP) facility, MGP-related materials, such as coal clinker, have previously been observed at some locations at the Site. The basic objectives of the Site Characterization included:

- Identifying the nature and extent of contamination associated with the former Holder Station and MGP-related materials in Site soil;
- Identifying the potential impacts of any such contamination to human health and the environment; and
- Assessing the SC results to determine if any site-related contamination warrants more investigation or remediation.

The Site Characterization field activities were completed from April 2011 through June 2011 in accordance with the NYSDEC-approved February 2011 Site Characterization Work Plan (SCWP). The scope of work included the excavation of test pits, completion of soil borings, installation of groundwater monitoring wells, collection of surface and subsurface soil samples to characterize soil conditions; and groundwater samples were collected to characterize soil and groundwater quality at the Site.



The Site, which is approximately 10 acres in area, is owned by the Long Island Power Authority (LIPA). A natural gas gate station is located in the northern portion of the Site and is operated by National Grid. An electric substation in the southern portion of the Site is operated by LIPA. The New York Power Authority (NYPA) owns electrical equipment located in the northwestern portion of the Site, and a transformer in the eastern portion of the electric substation yard.

The majority of the Site is covered with asphalt, crushed stone or a maintained lawn. A chain link fence surrounds the majority of the Site, including all operating areas for the natural gas and electric substation equipment. Entrance to operating areas is restricted by locked security gates which require a company-issued access card and/or authorization to open. Only driveways and parking lots outside of the operating areas do not have restricted access and these areas are mostly covered by asphalt. Since the Site has restricted access to the operating areas, and the private driveways and parking lots are mostly covered by asphalt, the potential for contact with Site soil is very low for the general public. In addition, any site-related excavation work can be addressed by a Site Management Plan (SMP) to address Site workers.

The following is a brief summary of the findings of the Site Characterization:

Surface and Subsurface Soil

Reworked fill deposits are present throughout the Site to a depth of approximately 8 to 12 feet below grade. MGP-related materials were visually observed in these fill deposits in limited areas of the Site, including the former gas holder foundation, the southeastern portion of the natural gas gate station and the eastern portions of the electric substation. Evidence of MGP-related materials included limited evidence of solid tar, slight to moderate staining and



odors, and/or the presence of coal clinker. Although the majority of the MGP-related materials were observed during previous investigations to a depth of approximately 4 to 6 feet below grade, the Site Characterization identified limited areas of deeper impacts, generally at 8 to 10 feet below grade. Since gas manufacturing did not occur at the Site, it is assumed that the limited MGP-related materials observed at the Site originated from another location, and may have been placed on-site along with other soil.

Semivolatile organic compounds (SVOCs), consisting primarily of polycyclic aromatic hydrocarbons (PAHs), were detected above their respective NYSDEC Industrial Use Soil Cleanup Objectives (SCOs) in several shallow soil samples primarily collected in the eastern portion of the Site. Soil samples exhibiting the higher PAH concentrations also exhibited visual evidence of MGP-related materials. However, maximum total PAH concentrations were below 100 mg/kg. In addition, benzo(a)pyrene was the only individual PAH detected above its Industrial Use SCO of 1.1 mg/kg at a concentration of 2.1 mg/kg in only one of the 13 surface soil samples, and at concentrations of 1.5 mg/kg and 6.5 mg/kg in only two of the 42 subsurface soil samples. Volatile organic compounds (VOCs), metals, cyanide and polychlorinated biphenyls (PCBs) were not detected above their respective NYSDEC Industrial Use SCOs in any of the surface or subsurface soil samples collected during the Site Characterization.

Solidified tar and sediment was observed at the surface within a retired gas pipe located on the eastern side of the former gas holder foundation within the secured natural gas gate station. A sample of the solidified tar/sediment exhibited a total PAH concentration of 4,292 mg/kg. Although the tar is visible at the surface, it was observed within a fenced and secure restricted access area. In addition, the tar is solidified and, therefore, not mobile.

ES-3



<u>Groundwater</u>

Trace concentrations of chlorinated VOCs and BTEX compounds were detected during the completed groundwater sampling, primarily in the upgradient monitoring wells. Chlorinated VOCs (CVOCs) are not typically associated with MGP-related materials and the CVOCs most likely originated from an upgradient source. Spills research noted a gasoline service station with at least one open petroleum spill located less than 1/8 of a mile upgradient of the Site, and this could be a potential source of VOCs.

One of the on-site monitoring wells located in the eastern portion of the electric substation yard exhibited elevated total and free cyanide concentrations in groundwater. However, monitoring wells located further downgradient along the southern perimeter of the Site did not exhibit elevated concentrations of cyanide, indicating that this is a localized condition.

Based on the findings of this Site Characterization including the previous investigations at the Site, additional delineation of MGP-related materials should not be necessary. In addition, based on the extensive network of above and below grade utilities present at the Site and limited potential for exposure to on-site workers or the public to site-related contaminants, remediation of soil containing MGP-related materials is not warranted at this time. The following items are detailed in Section 5.2 of the Conclusions:

- Maintain limited access to the natural gas gate station and electric substation areas of the Site;
- Maintain the crushed stone, asphalt and maintained lawn cover at the Site;
- Cover the retired gas pipe containing the exposed solidified tar/sediment in asphalt and leave the structure in place; and
- Develop a Site Management Plan (SMP) for the Site.



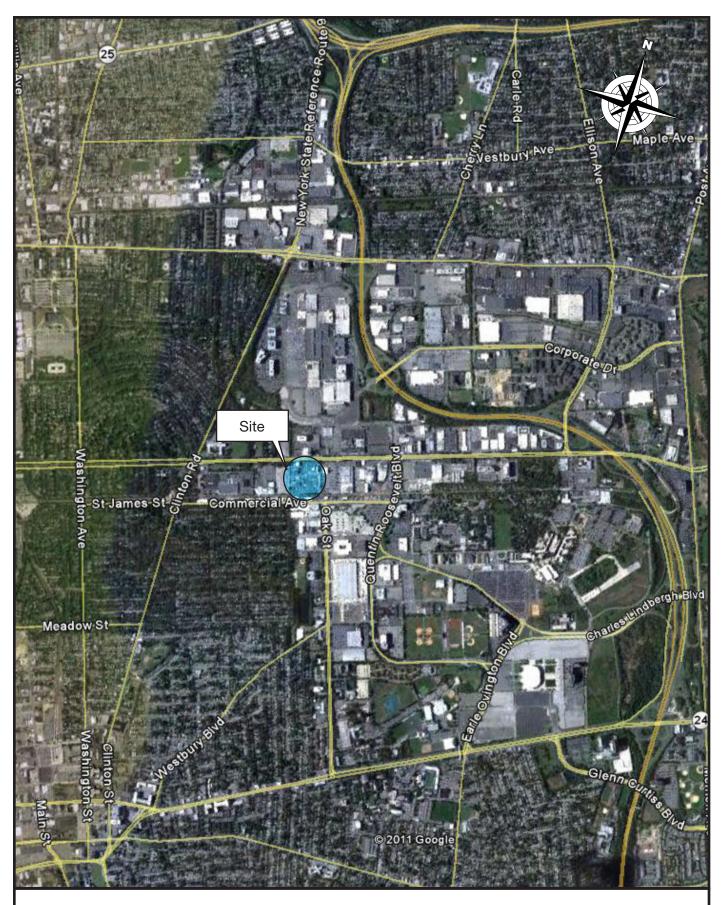
1.0 INTRODUCTION

1.1 Project Background

National Grid contracted Dvirka and Bartilucci Consulting Engineers (D&B) to conduct a Site Characterization of the East Garden City Former Stewart Avenue Holder Station located in East Garden City, New York (hereinafter referred to as the Site). National Grid (formerly KeySpan) is working under an Order of Consent and Administrative Settlement (Index No. A2-0552-0606) with the New York State Department of Environmental Conservation (NYSDEC) to investigate and, if necessary, remediate potential contamination at multiple sites on Long Island and in New York City. A site location map is provided as Figure 1-1. The Site is currently being utilized as a natural gas gate station and an electric substation. The former three million cubic feet (ff³) gas storage holder was used to hold both manufactured gas and natural gas. Based on review of the 1966 and 1970 aerial photographs and Sanborn Maps, the storage holder was decommissioned sometime between 1966 and 1970. While the Site was not a Manufactured Gas Plant (MGP) facility, MGP-related materials, such as coal clinker, have been observed at some locations on the property.

D&B completed the Site Characterization field activities from April 2011 through June 2011 in accordance with the NYSDEC-approved February 2011 Site Characterization Work Plan (SCWP). This Site Characterization Report has been completed in accordance with the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER)-10 document, dated May 2010. The report is organized as follows:







East Garden City Former Stewart Avenue Holder Station
Garden City, NY
Site Location Map

FIGURE 1-1

- <u>Section 1</u> (Introduction) includes a site overview history, and previous investigation results;
- <u>Section 2</u> (Site Characterization Scope of Work) describes the completed Site Characterization field activities and any changes from the planned scope of work;
- <u>Section 3</u> (Site Geology and Hydrogeology) describes the site-specific geology and hydrogeology based on data collected from soil borings, test pits and monitoring wells installed during the Site Characterization, as well as data collected during previous investigations;
- <u>Section 4</u> (Site Characterization Findings) presents the findings of the Site Characterization field activities, including the analytical results of all collected samples. An assessment of potential human health exposure pathways is also included; and
- <u>Section 5</u> (Conclusions and Recommendations) presents conclusions based on the Site Characterization results.

1.2 Site Description

1.2.1 <u>Current Site Description</u>

The Site is located on Stewart Avenue in East Garden City, Nassau County, New York. Primary access to the Site is from Stewart Avenue, which bounds the Site to the north. The Site, which is approximately 10 acres in area, is currently a natural gas gate station and an electric substation. The natural gas gate station is present on the northern portion of the Site, and the electric substation (4H East Garden City electric substation) is present on the southern portion of the Site. A site plan is included as Drawing 1, provided in a map pocket at the end of this section of the report. The entire Site is owned by the Long Island Power Authority (LIPA). National Grid operates the natural gas gate station, LIPA operates the 4H East Garden City electric substation and the New York Power Authority (NYPA) owns other electrical equipment located in the northwestern portion of the Site. A NYPA transformer is also located in the eastern portion of the electric substation yard.



The majority of the Site is unpaved and covered with crushed stone. Asphalt paving is present on the northern portions of the Site, primarily the private parking lots and access roads. As shown on Drawing 1, a small above and below ground natural gas piping network and associated regulator buildings are located in the northeastern portion of the Site where National Grid's natural gas gate station and piping are located. The surface of the natural gas gate station consists of both asphalted and grass covered areas. A complex network of above and below ground electric equipment and associated control buildings are located in the electric substation yard in the southern portion of the Site, which is primarily covered by crushed stone. In addition, a National Grid office building (600 Stewart Avenue) and parking area are located on the northwestern portion of the Site, adjacent to Stewart Avenue. A chain link fence surrounds the majority of the Site, including all natural gas and electric substation equipment. Security gates require an access card and/or authorization to restrict entry to the electric substation yard and natural gas gate station.

The Site was the former location of a gas storage holder, where both natural gas and manufactured gas were stored for local distribution (see Section 1.3 for a discussion of Site history). A small portion of the concrete gas holder foundation is present in the central portion of the Site within the natural gas piping area. There are also two compressor buildings that were part of the former gas holder infrastructure, which are currently located to the northeast of the holder foundation. The approximate locations of the gas holder foundation and compressor buildings are depicted on Drawing 1. The two former compressor buildings are currently utilized by National Grid, with the smaller western building being used to house gas regulator equipment and the larger eastern building being used for storage.



1.2.2 Adjoining Property Description

The areas adjoining and surrounding the Site include commercial and industrial properties and are depicted on Figure 1-2. Stewart Avenue and commercial properties border the Site to the north. The Roosevelt Field Shopping Center is located further to the north, at a distance of approximately 1/3 mile. Roosevelt Field was an aviation field prior to the construction of the shopping mall. A Long Island Rail Road (LIRR) right-of-way and rail tracks bound the Site to the south. Various commercial and industrial properties are located further south beyond the LIRR rail tracks along Commercial Avenue. A shopping center, including restaurants and retail facilities, is located immediately east of the Site. A vacant lot is located immediately west of the Site that was the location of a former tea company warehouse and a former Newsday newspaper plant that was previously removed.

1.3 Site History

The SCWP included a discussion of the history of the Site, which is presented below. The discussion was based on a review of information obtained from National Grid and a review of available Sanborn (fire insurance) maps, historical aerial photographs and historical topographic maps. Sanborn maps were reviewed from 1936 through 1970. Although historical topographic maps were available for as early as 1903, details of the Site were not provided until the 1947 map. Historical aerial photographs were reviewed from 1957 through 1994. The EDR is available for review in the SCWP and the Sanborn Maps and aerial photographs from the EDR are available for review in Appendix A of this Site Characterization Report.





1.3.1 <u>Site Ownership and Past Site Operations</u>

The 1936 Sanborn map indicates that the Site was owned by the Nassau & Suffolk Lightning Company. A single gas holder was in place by this time, with a capacity indicated as three million ft³. A compressor house is depicted immediately north of the gas holder. In addition, an office building and garage were present on the northwest portion of the Site. The approximate locations of the former structures, including the former gas holder, are depicted on Drawing 1.

A tar-sealed gas holder station operated on the Site from the 1940's or earlier, as indicated by the 1936 Sanborn map. The holder that operated at the Site was a remote gas distribution holder with no gas production facilities on-site. Gas holders were used to store manufactured or natural gas at various points in the distribution system. The gas holders constructed in the early part of the 20th century were low-pressure holders with either a water or tar seal. Tar-sealed holders were large metal structures with a stationary shell and an internal piston that rose and fell when gas entered the cylinder. An oily tar was used to provide a seal around the edge of the piston. Tar, containing hydrocarbons, had the potential to leak or be inadvertently spilled during operations or upon decommissioning and demolition. Typically, to prevent corrosion, these structures were coated with paint, possibly containing lead. Maintenance painting and scraping during operations could have potentially deposited lead in the vicinity of the holder.

By 1950, the owner of the Site was indicated as the Long Island Lighting Company (LILCO). An additional garage is present south of the gas holder on the 1950 Sanborn map. The 1955 topographic map indicates that the Site was also utilized as an electric substation by that time. Additional compressors are depicted northeast of the gas holder on the 1961 Sanborn map. In addition, a building labeled "greas'g" (which is labeled as the former Greasing Building on drawings in this report) had been constructed to the south of the gas



holder by this time. The exact use or function of this building was unable to be determined from the Sanborn map. Based on review of the 1966 and 1970 aerial photographs and Sanborn Maps, the gas holder structure was removed from the Site between 1966 and 1970. According to the historical aerial photographs, additional electric substation structures were added after the removal of the gas holder structure.

1.3.2 Former Gas Holder Layout and Key Features

As depicted on Drawing 1, the Site consisted of a large capacity gas holder (approximately three million ft³), three compressor houses, a building labeled "greas'g" (which is labeled as the former Greasing Building on drawings in this report), two garages and an office building. The gas holder consisted of a cylindrical chamber approximately 145 feet in diameter. Based on available information, the gas holder was constructed on a concrete foundation that was left in place after the gas holder was removed. A small portion of the concrete gas holder foundation remains on the central portion of the Site. According to National Grid, the office building located at 600 Stewart Avenue is the original office building constructed before 1936 that is depicted on the Sanborn maps.

1.4 Previous Investigations and Interim Remedial Measure

National Grid previously completed several phases of investigations at the Site for National Grid in support of electric substation upgrade projects in several areas of the substation yard from August 2007 to June 2008. In addition, D&B assisted National Grid with an Interim Remedial Measure (IRM), completed in the northeast corner of the electric substation yard in the first quarter of 2008. The previously completed investigations were primarily focused on shallow soil conditions in the northeast corner of the electric substation yard; however, D&B also investigated several additional areas throughout the electric substation yard and an area to the southeast of the electric substation yard. Two additional



limited soil investigations were conducted in August and January of 2007 by Miller Environmental Group (MEG) and Fenley and Nicol (F&N), respectively. All previously completed investigations and the IRM are summarized below. The previously completed soil sample locations are depicted on Drawing 2, included in a map pocket at the end of Section 2.0. Further details on the previously completed investigations and IRM are provided in the SCWP.

Based on the results of the previously completed investigations, soil exhibiting gray and black staining and varying amounts of coal clinker, including some with a blue coloration, have been identified in the southeastern portion of the natural gas gate station and the eastern portions of the electric substation yard ranging from grade to approximately 4 to 6 feet in depth. In addition, elevated photoionization detector (PID) readings were detected in several soil samples collected by MEG in the southeastern portion of the natural gas gate station, with a maximum PID reading of 29 parts per million (ppm). Based on the fill characteristics, it is possible that this material is MGP-related. Since gas manufacturing did not occur at the Site, the observed fill material may have originated from another site. Completed soil borings and trench locations exhibiting this MGP-related fill are depicted in purple on Drawing 2.

In total, 62 shallow subsurface soil samples were previously collected at the Site, focusing primarily on the MGP-related fill identified in the eastern portion of the Site, with sample depths ranging from approximately 1 to 6 feet below ground surface. Soil exhibiting concentrations of arsenic, mercury and benzo(a)pyrene above Industrial Use soil cleanup objectives (SCOs) were detected in the eastern and southeastern portions of the Site. These contaminant concentrations were found to be generally low with only 14 of the 62 collected soil samples exhibiting one or more compounds above their respective Industrial Use SCOs. Completion of the IRM in the northeastern corner of the electric substation yard in February



2008 resulted in the removal of soil containing the majority of the identified elevated contaminant concentrations.

1.5 Environmental Records Search

In order to assist in the development of the scope of work for the Site Characterization, D&B performed a review of federal, state and local records for the Site compiled in a regulatory agency database report by Environmental Data Resources Inc. (EDR). The detailed findings of this review were presented in the February 2011 SCWP and the Sanborn Maps and pertinent historical information from the EDR document are provided in Appendix A of this Site Characterization Report. The following sections present a summary of the findings from the EDR database review for the Site and surrounding properties.

1.5.1 <u>East Garden City Electric Substation</u>

As previously stated, the Site was not an MGP Site. However, becase the Site was used to store manufactured gas holder station, the Site was listed in the Manufactured Gas Plants database and the polychlorinated biphenyl (PCB) Activity Database System (PADS), which identifies generators, transporters, commercial storers and/or brokers and disposers of PCBs. However, note that the Site only stored manufactured gas and did not produce it since gas manufacturing did not occur at the Site. The Site has been identified as a Conditionally Exempt Small Quantity Generator (CESQG) of hazardous waste and as a large quantity generator in the past. Wastes which have been manifested off-site include PCB wastes, metals, corrosive wastes, ignitable wastes, halogenated solvents and tetrachloro-ethylene.

Two spills listed in the NY Spills database occurred at the Site, including NYSDEC Spill Nos. 0310194, 0305823 and 0212271. Spill No. 0310194 occurred on December 2, 2003 and involved a release of approximately 80 gallons of non-PCB dielectric fluid to soil



when seals on a sampling valve leaked. The spill was remediated by soil excavation and the NYSDEC closed the spill in 2005. The database notes that historical spills may have contributed to the observed contamination and may still be present. The second spill (NYSDEC Spill No. 0305823) occurred on September 2, 2003 and involved a release of approximately 20 gallons of dielectric fluid. It was reported that the spill was contained in a vaulted area of an aboveground transformer and was remediated. The spill was closed by the NYSDEC in 2005.

In addition, a dielectric cable fluid (DCF) spill occurred off-site on the Long Island Rail Road (LIRR) right-of-way to the south of the Site in March 2003. The DCF was released to the subsurface under the Long Island Rail Road (LIRR) right-of-way (ROW) located to the immediate south of the Site, and was assigned Spill No. 0212271 by the NYSDEC. The spill is currently listed as "open" by the NYSDEC and is being remediated by LIPA. A remediation system utilized to recover the DCF included six recovery wells and two belt-skimming devices to remove non-aqueous phase liquid (NAPL) from the groundwater surface. The recovered NAPL was then pumped to a 550-gallon recovery tank located on the Site, as depicted on Drawing 1. Automated recovery operations were supplemented by periodic vacuum-enhanced fluid recovery (VEFR) using a vacuum truck. The latest status report on the response to this spill was provided to the NYSDEC in January 2011, and the report indicated that the belt skimmers have been turned off due to low product levels. Recent recovery operations include the use of absorbent pads to recover residual product and occasional use of VEFR, as warranted by the observed conditions.

1.5.2 Adjoining and Surrounding Properties

As discussed in Section 3.3, shallow groundwater flows in a generally south/southeasterly direction within the vicinity of the Site. The review of the EDR database has identified a number of sites with contamination that, based on the south/southeasterly



direction of groundwater flow, could potentially impact soil and/or groundwater quality at the Site. These sites are discussed below. A figure depicting adjoining and surrounding properties, including these upgradient sites with contamination, is provided as Figure 1-2.

As depicted on Figure 1-2, the Old Roosevelt Field Contaminated Groundwater Area (ORCA) National Priority List (NPL) site is located approximately 1/3 mile north/northwest of the Site. The NPL, also known as Superfund, lists properties that are ranked as high priority for cleanup under the Superfund program. The ORCA site has historically exhibited a groundwater contaminant plume containing elevated concentrations of volatile organic compounds (VOCs), such as tetrachloroethene (PCE), trichloroethene (TCE) and carbon tetrachloride. The source of the contamination is cited as the previous use of Roosevelt Field as a major aviation field as well as other industrial sites in the area which have historically and may currently utilize chlorinated solvents. The ORCA site is located upgradient from the Site and has the potential to impact groundwater quality at the Site. In addition, Award Packaging, a State Hazardous Waste Site, is located east of Roosevelt Field and also potentially upgradient of the Site. Impacts to groundwater from VOCs such as PCE, TCE, toluene and xylenes have been documented at the Award Packaging site. Industrial sites located to the south and downgradient of the Site, including the Pasley Solvents NPL site, are not expected to impact groundwater quality at the Site.

The database also identified an open spill resulting from a small leak of a gasoline pump at the Exxon station at 611 Stewart Avenue, less than 1/8 mile north and upgradient of the Site. The presence of a service station immediately upgradient of the Site represents a potential to impact the groundwater quality at the Site.



1.6 Areas of Interest and Project Objectives

As detailed in the February 2011 SCWP, the Site Characterization was designed to evaluate the potential for the following environmental conditions:

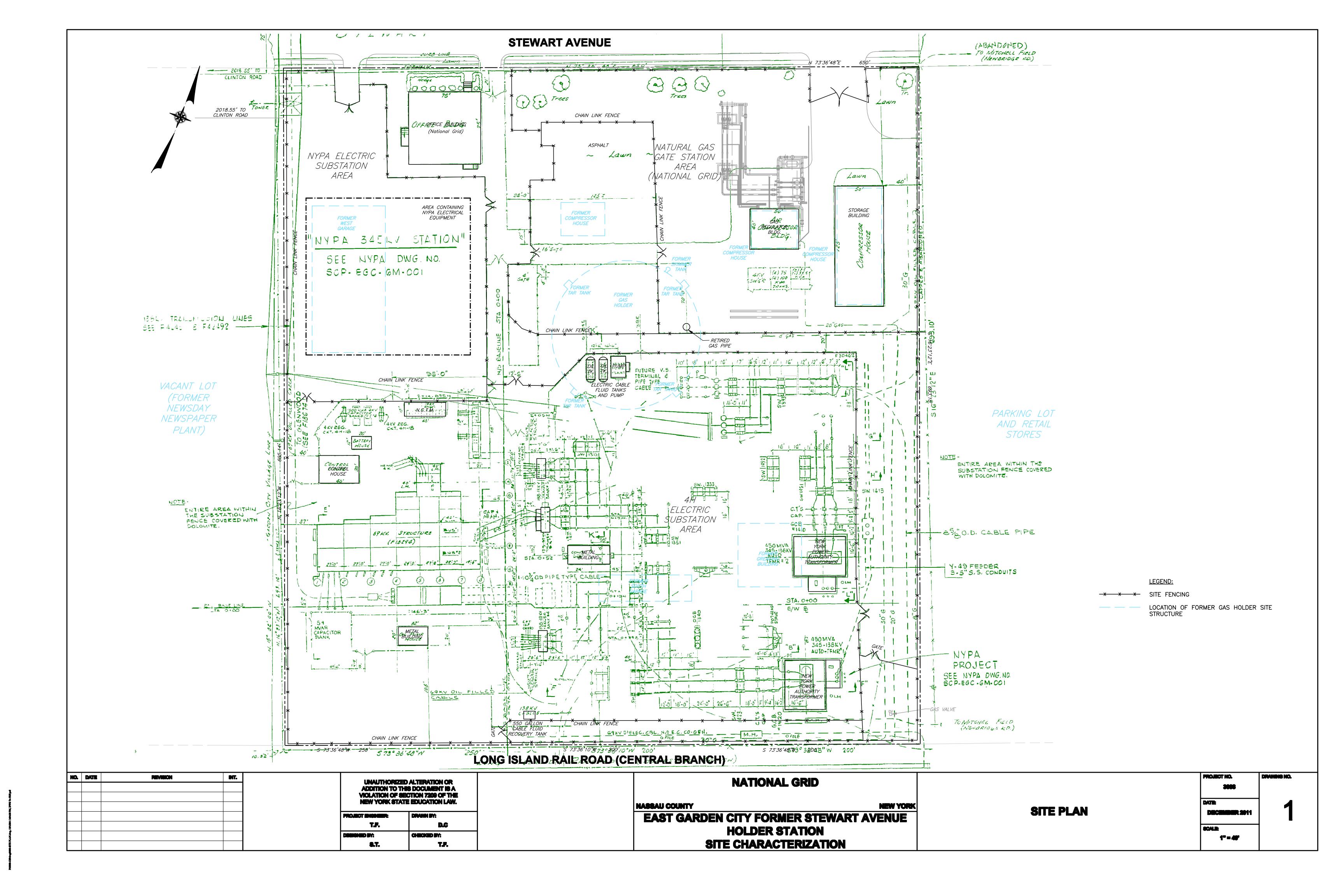
- There are a number of off-site petroleum and hazardous waste sites with known or suspected groundwater contamination that are located upgradient of the Site based on a south/southeasterly direction of groundwater flow. Therefore, there is a potential for Site groundwater and, to a lesser degree, Site soil to be impacted by these upgradient sources.
- Tar and other MGP-related materials associated with the operation, maintenance and demolition of the former gas holder and tar tanks may be present in Site soil and possibly groundwater. In addition, lead-based paint may have been used on the former holder.
- Tar and other MGP-related materials associated with the operation, maintenance and demolition of the former gas compressor buildings and equipment could potentially be present in Site soil and possibly groundwater.
- Available historical records identified the presence of several former buildings located on the Site, including two buildings labeled garage and a third building labeled "greas'g" (which is labeled as the former Greasing Building on drawings in this report). While specific information on the use of these buildings is not available, their descriptions imply that they were utilized for some type of equipment storage and/or maintenance. Therefore, it is possible that petroleum or other contaminants were previously handled in these areas. Note that, due to its former location to the west of the Site and the presence of significant below grade electrical equipment in its vicinity, the former west garage is not anticipated to be an area of concern at the Site.
- Previously completed investigations have identified a layer of fill material containing MGP-related materials, such as coal clinker, from grade to a depth of approximately 4 to 6 feet in the east and southeast portions of the Site. While contaminant concentrations detected in this fill appear to be relatively low, the great extent and thickness of the fill can be better defined



Accordingly, the primary objectives of the Site Characterization include:

- Assess the presence or absence of remnant structures of the former Holder Station, to the extent practicable;
- Evaluate soil and/or groundwater quality to determine if MGP-related materials are present in the subsurface and if these residuals have impacted groundwater;
- Determine whether the presence of MGP-related materials encountered could potentially pose a threat to public health and/or the environment;
- Evaluate potential migration pathways for any chemical constituents that may be related to the operation of the former gas holder facility, if any are encountered; and
- Characterize site-specific geology and hydrogeology.





2.0 SITE CHARACTERIZATION SCOPE OF WORK

This section provides an overview of the field activities associated with the Site Characterization of the East Garden City Former Stewart Avenue Holder Station. The Site Characterization field activities were completed from April 2011 through June 2011 in accordance with the NYSDEC-approved February 2011 Site Characterization Work Plan (SCWP). In order to meet the objectives stated in Section 1.6, the following activities were performed:

- Underground Utility Clearance;
- Air Monitoring;
- Surface Soil Sampling;
- Test Pit Excavation;
- Geoprobe Borings;
- Monitoring Well Installation;
- Groundwater Sampling and Analysis; and
- Site Survey.

A completed sample location map is provided as Drawing 2, provided in a map pocket at the end of this section of the report. Drawing 2 depicts the surveyed locations of all Site Characterization test pits, soil borings and monitoring wells. Additionally, Table 2-1 provides a summary of sample depths and analysis, sample point objectives, field observations and changes from the NYSDEC-approved scope of work. As specified in the February 2011 NYSDEC-approved SCWP, the Site Characterization focused on the areas of interest listed in Section 1.6. Accordingly, the suite of laboratory analyses utilized in the



TABLE 2-1 East Garden City Former Stewart Avenue Holder Station Site Characterization Report SITE CHARACTERIZATION SCOPE SUMMARY

Investigation Method/Technology	Sample Point ID	Sample Media	Completion Depth Below Grade (ft)	No. of Samples Selected for Analysis	Sample Depth Below Grade (ft)	Installation or Sample Date	Sample Point Objectives	Comments/Deviations From Work Plan	
	EGCSS-01 through EGCSS-03	Soil	2"	3	0-2"	4/25/2011	Define potential impacts from MGP-related materials in unpaved areas of the natural gas gate station.		
Surface Soil Samples	EGCSS-04	Soil	2"	1	0-2"	4/25/2011	Define potential impacts from MGP-related materials in the unpaved open area to the east of the electric substation yard.		
	EGCSS-05 through EGCSS-13	Soil	2"	9	0-2"	4/25/2011	Define potential impacts from MGP-related materials in the electric substation yard.		
Test Pits	EGCTP-01	Soil	6	1	1-2'	4/27/2011	Investigate the former Gas Holder and associated tar tanks. Identify the holder foundation and determine if NAPL exists above or adjacent to the holder foundation. Characterize soil conditions immediately above and adjacent to the holder foundation.	Black staining was noted from 1 to 2 feet in depth; however, no odor or NAPL was observed. Small diameter pipe was noted at 2.5 feet in depth, extending east-west throughout the test pit. A suspected tar tank foundation was identified adjacent to the holder foundation.	
	EGCTP-02	Soil	6.5	1	1-2'	5/10/2011	Investigate the former Gas Holder and associated tar tanks. Identify the holder foundation and determine if NAPL exists above or adjacent to the holder foundation. Characterize soil conditions immediately above and adjacent to the holder foundation.	Relocated approximately 60 feet east along holder foundation due to the presence of aboveground utilities in the proposed location. Solid tar observed at 1.5 feet in depth with tar-like odor. Refusal encountered at 6.5 feet in depth, at a concrete slab, likely part of the holder foundation. The test pit was not extended beyond the identified holder foundation, as per NYSDEC direction.	
	EGCSB-01	Soil	35	2	8-10' 18-20'	5/17/2011	Investigate soil characteristics associated with the former west Compressor House. Define limits of MGP-related fill. Obtain information regarding site geology.	Relocated approximately 20 feet south due to the presence of underground utilities.	
	EGCSB-02	Soil	35	2	9-11' 15.5-17.5'	5/18/2011	Investigate soil characteristics associated with the former west Compressor House. Define limits of MGP-related fill. Obtain information regarding site geology.	Relocated approximately 10 feet south due to the presence of underground utilities. Monitoring well EGCMW-04 installed in borehole.	
	EGCSB-03	Soil	35	2	14-16' 23-25'	5/12/2011	Investigate soil characteristics associated with the former east Compressor Houses. Define limits of MGP-related fill. Obtain information regarding site geology.		
Soil Probes	EGCSB-04	Soil	35	2	12-14' 14-16'	5/12/2011	Investigate soil characteristics associated with the former east Compressor Houses. Define limits of MGP-related fill. Obtain information regarding site geology.		
	EGCSB-05	Soil	35	2	12-14' 14-16'	5/13/2011	Investigate soil characteristics associated with the former east Compressor Houses. Define limits of MGP-related fill. Obtain information regarding site geology.	Slight hydrocarbon-like odor noted at 13 to 15 feet in depth. One inch thick tar/clinker layer and coal tar-like odor noted at 16 feet in depth.	
	EGCSB-06						Investigate soil characteristics associated with the former Gas Holder. Determine if MGP-related materials exist above, at and/or adjacent to the holder foundation. Obtain information regarding site geology.	Multiple refusals were encountered due to large brick and concrete fragments in the proposed area. Location was eliminated from sampling program based on direction from National Grid.	
	EGCSB-07	Soil	35	2	10-12' 14.5-16.5'	5/13/2011	Investigate soil characteristics associated with the former Gas Holder. Determine if MGP-related materials exist above, at and/or below the holder foundation. Obtain information regarding site geology.	One half-inch thick coal tar layer and slight coal tar-like odor noted at 11.5 feet in depth.	

TABLE 2-1 East Garden City Former Stewart Avenue Holder Station Site Characterization Report SITE CHARACTERIZATION SCOPE SUMMARY

Investigation Method/Technology	Sample Point ID	Sample Media	Completion Depth Below Grade (ft)	No. of Samples Selected for Analysis	Sample Depth Below Grade (ft)	Installation or Sample Date	Sample Point Objectives	Comments/Deviations From Work Plan	
	EGCSB-08	Soil	35	2	8-10' 15-17'	5/20/2011	Investigate soil characteristics associated with the former Gas Holder. Determine if MGP-related materials exist adjacent to the holder foundation. Obtain information regarding site geology.	Relocated approximately 15 feet south to electric yard due to presence of underground utilities in the proposed location.	
	EGCSB-09	Soil	8-10' Holder. Determine if MGP-related		Investigate soil characteristics associated with the former Gas Holder. Determine if MGP-related materials exist adjacent to the holder foundation. Obtain information regarding site geology.				
	EGCSB-10	Soil	35	2	8-10' 17.5-19.5'	5/17/2011	Investigate soil characteristics associated with the former Gas Holder. Determine if MGP-related materials exist adjacent to the holder foundation. Obtain information regarding site geology.		
	EGCSB-11	Soil	35	2	8-10' 14.5-16.5'	5/23/2011	Define limits of the reworked fill layer exhibiting coal clinker, staining and elevated PAH and metals concentrations. Obtain information regarding site geology.	Relocated approximately 10 feet southeast due to the presence of aboveground utilities in the proposed location.	
	EGCSB-12	Soil	8	0			Define limits of the reworked fill layer exhibiting coal clinker, staining and elevated PAH and metals concentrations. Obtain information regarding site geology.	Location completed to 8 feet using vacuum excavation. Geoprobe work could not be completed due to presence of aboveground utilities.	
	EGCSB-13	Soil	35	2	8-10' 16-18'	5/20/2011	Define limits of the reworked fill layer exhibiting coal clinker, staining and elevated PAH and metals concentrations. Obtain information regarding site geology.		
Soil Probes (continued)	EGCSB-14	Soil	35	2	8.5-10.5' 14-16'	5/25/2011	Investigate soil characteristics associated with the former south Garage. Define limits of MGP-related fill. Obtain information regarding site geology.	Relocated approximately 30 feet northeast due to presence of above ground utilities. Slight black staining noted at 10 feet in depth. Monitoring well EGCMW-06 installed in borehole.	
	EGCSB-15	Soil	35	2	8.5-10.5' 14.5-16.5'	5/24/2011	Investigate soil characteristics associated with the former Greasing Building. Define limits of MGP-related fill. Obtain information regarding site geology.	Relocated approximately 20 feet north as per direction from National Grid. Slight naphthalene-like odor noted from 8.5 to 10 feet depth.	
	EGCSB-16	Soil	35	2	8-10' 15-17'	5/24/2011	Investigate soil characteristics associated with the former Greasing Building. Define limits of MGP-related fill. Obtain information regarding site geology.	Relocated approximately 10 feet north due to presence of underground utilities in the proposed location. Black staining and a slight naphthalene-like odor noted from 8 to 10 feet in depth.	
	EGCSB-17	Soil	35	2	9-11' 14-16'	5/24/2011	Define limits of the reworked fill layer exhibiting coal clinker, staining and elevated PAH and metals concentrations. Obtain information regarding site geology.	Trace clinker and black staining noted from 9 to 10 feet in depth.	
	EGCSB-18	Soil	35	2	8-10' 16-18'	5/19/2011	Investigate soil characteristics east of the NYPA electric substation area. Define limits of MGP-related fill. Obtain information regarding site geology.		
	EGCSB-19	Soil	35	2	8-10' 16-18'	5/20/2011	Investigate soil characteristics south of the NYPA electric substation area. Define limits of MGP-related fill. Obtain information regarding site geology.	Relocated approximately 20 feet west due to the presence of above ground utilities in the proposed location.	
	EGCSB-20						Investigate soil characteristics south of the NYPA electric substation area. Define limits of MGP-related fill. Obtain information regarding site geology.	Location was eliminated from sampling program as per direction from National Grid, and based on several underground and aboveground utilities in the proposed area.	

TABLE 2-1

East Garden City Former Stewart Avenue Holder Station Site Characterization Report SITE CHARACTERIZATION SCOPE SUMMARY

Investigation Method/Technology	Sample Point ID	Sample Media	Completion Depth Below Grade (ft)	No. of Samples Selected for Analysis	Sample Depth Below Grade (ft)	Installation or Sample Date	Sample Point Objectives	Comments/Deviations From Work Plan	
	EGCMW-01	Groundwater	28	1	16 - 26	6/8/2011	Determine water quality, groundwater flow and the presence/absence of NAPL in groundwater upgradient of the site.	Relocated approximately 20 feet west due to presence of underground utilities in the proposed location.	
	EGCMW-02	Groundwater	29	1	17 - 27	6/6/2011 9/9/11	Determine water quality, groundwater flow and the presence/absence of NAPL in groundwater upgradient of the site.	Relocated approximately 20 feet east due to presence of underground utilities in the proposed location. Sample collected on 9/9/11 analyzed only for total and free cyanide.	
	EGCMW-03	Groundwater	27	1	15 - 25	6/7/2011	Determine water quality, groundwater flow and the	Soil samples collected and analyzed beyond the SCWP scope of work at NYSDEC request.	
		Soil	35	2	8.5-10.5' 15.5-17.5'	5/26/2011	presence/absence of NAPL in groundwater in the downgradient area of the site.		
Monitoring Well Installation and Sampling	EGCMW-04	Groundwater	28	1	16 - 26	6/6/2011	Determine water quality, groundwater flow and the presence/absence of NAPL in groundwater downgradient of the former west Compressor House.	Well installed in soil boring EGCSB-02.	
	EGCMW-05	Groundwater	27	1	15 - 25	6/6/2011	Determine water quality, groundwater flow and the presence/absence of NAPL in groundwater downgradient of	Soil samples collected and analyzed beyond the SCWP	
		Soil	35	2	8-10' 15-17'	5/23/2011	the former Gas Holder.	scope of work at NYSDEC request.	
	EGCMW-06	Groundwater	24.5	2	12.5 - 22.5	6/6/2011 9/9/11	Determine water quality, groundwater flow and the presence/absence of NAPL in groundwater downgradient of the former south Garage and Former Greasing Building.	Well installed in soil boring EGCSB-14. Groundwater sample collected on 9/9/11 analyzed only for total and free cyanide.	
	EGCMW-07	Groundwater	28	2	16 - 26	6/7/2011 9/9/11	Determine water quality, groundwater flow and the presence/absence of NAPL in groundwater in the	Relocated approximately 10 feet east due to presence of aboveground utilities in the proposed location. Groundwater sample collected on 9/9/11 analyzed only for total and free	
	EGCIVIVV-U7	Soil	35	2	9.5-11.5' 16-18'	5/19/2011	downgradient area of the site.	cyanide. Soil samples collected and analyzed beyond the SCWP scope of work at NYSDEC request.	
Foundation Distribution Pipe Sample	EGCHFD-01	Solid Tar/ Sediment	1	1	0-1'	4/27/2011	Characterize material found within foundation distribution pipe near perimeter of former gas holder.	Sample of solidified tar/sediment collected from holder foundation gas distribution pipe, at NYSDEC request.	

Sample Analyses:

Surface soil samples were analyzed for SVOCs, TAL Metals, Cyanide, PCBs and TPHs.

Subsurface soil samples and the gas distribution pipe sample were analyzed for VOCs, SVOCs, TAL Metals, Cyanide, PCBs and TPHs.

Groundwater samples were analyzed for VOCs, SVOCs, TAL Metals, Cyanide and PCBs.

Monitoring wells EGCMW-02, 06 and 07 were re-sampled on September 9, 2011 for total and free cyanide.

All samples were analyzed for PCBs.

Methods

Target Compound List Volatile Organic Compounds by EPA Method 8260.

Target Compound List Semi-Volatile Organic Compounds by EPA Method 8270.

Target Analyte List metals by EPA Method 6000/7000 Series.

Cyanide by EPA Method 9012.

Polychlorinated Biphenyls by EPA Method 8082.

Total Petroleum Hydrocarbons by EPA Method 8100 modified.

Total Cyanide by EPA Method 335.4.

Free Cyanide by EPA Method 9016.

Site Characterization field program was selected to identify compounds indicative in MGP-related materials, as well as potential contaminants from the identified upgradient sources.

Due to the presence of aboveground and underground utilities, modifications to the scope of work were necessary, including the relocation and elimination of some sample locations. Modifications to the scope of work were discussed with and approved by National Grid and the NYSDEC Project Manager prior to implementation. All scope of work modifications are summarized on Table 2-1, and are detailed in Section 2.12.

2.1 Underground Utility Clearance

Prior to implementing any intrusive activities, utility clearance procedures were conducted. The procedures entailed utility markouts pursuant to Code 753, obtaining and reviewing available utility drawings and completing a field reconnaissance to verify, to the maximum extent possible, the location of utilities relative to the planned locations of all intrusive work. Representatives from D&B, National Grid and LIPA completed a survey of all aboveground utilities in the investigation areas to ensure no aboveground utilities were located in close proximity to any sample locations. Given the extensive network of underground utilities present throughout the Site, a private utility markout contractor, Advanced Geological Services (AGS), performed a geophysical survey utilizing electromagnetic methods and ground penetrating radar in order to further identify underground utilities in areas where intrusive activities were performed. In addition, LIPA performed an underground utilities survey prior to the initiation of intrusive activities.

A Code 753 utility markout was completed as per the 16 New York Codes, Rules and Regulations (NYCRR) Part 753. Consistent with the One-Call (also called Dig Safe New York) criteria, a request was made at least 72 hours prior to initiating fieldwork. Per Code 753 requirements, confirmations that the utilities were marked out were documented in the project



file. All hard-copy confirmations were available in the field during all intrusive operations. If the utility markings became faint or obscure, they were refreshed as needed.

As an added precautionary measure all soil boring and monitoring well locations were "hand cleared" prior to the use of mechanical drilling equipment using vacuum excavation and intrinsically safe hand tools specifically designed for use at electric substations (i.e. insulated digging bars and long-handled and/or fiberglass-handled scoops and/or shovels, etc.). All subsurface locations were hand/vacuum cleared to a depth of 8 feet below grade in order to confirm the absence of utilities at these locations. In order to further protect workers from energized utilities, a representative from LIPA was on site during completion of all intrusive activities.

2.2 Air Monitoring

Air monitoring was conducted in accordance with the New York State Department of Health (NYSDOH) generic Community Air Monitoring Plan (CAMP) and the NYSDEC's Generic CAMP provided in Appendix 1A of DER-10. Specifically, upwind and downwind air monitoring for VOCs and particulates was conducted during completion of all excavation activities. At the start of work, air monitoring stations were established upwind of the work activities and at the downwind perimeter of the excavation work zone. No concentrations above established action levels were detected for VOCs. Very few concentrations above established action levels were detected for particulates and were attributed to vehicular traffic on-site, as no visible dust was observed emanating from the intrusive activities at any time throughout the field activities. These observed conditions were brief and not sustained, and no corrective actions were necessary.

In addition, real-time work zone (or breathing zone) air monitoring was performed in the work zone during all intrusive activities. The work zone was monitored for VOCs, mercury



vapor, hydrogen cyanide (HCN), hydrogen sulfide (H_2S), carbon monoxide (CO), lower explosive limit (LEL) and oxygen (O_2). All readings were below action levels during intrusive activities in the work zone.

2.3 Surface Soil Sampling and Analyses

In order to evaluate the extent of MGP-related contaminants present in surface soil, a total of 13 surface soil samples (EGCSS-01 through EGCSS-13) were collected from open ground areas within the Site for chemical analysis. The surface soil sampling locations are depicted on Drawing 2. Sample locations were biased in the field toward the identified AOCs listed in Section 1.6.

Consistent with NYSDEC and NYSDOH requirements, the surface soil samples were collected at a depth of 0 to 2 inches below ground surface (or below grass or crushed stone cover material, if present) using a disposable polyethylene scoop. As summarized on Table 2-1, the surface soil samples were analyzed for Target Compound List (TCL) semivolatile organic compounds (SVOCs) by United States Environmental Protection Agency (USEPA) Method 8270, Target Analyte List (TAL) metals by USEPA 6000/7000 series methods, total cyanide by USEPA Method 9012, PCBs by USEPA Method 8082 and total petroleum hydrocarbons (TPHs) by USEPA Method 8100 modified. Analytical results are summarized in Appendix E on Tables E-1 through E-4, and are discussed in Section 4.1.

A retired gas pipe was visible at the surface on the eastern side of the gas holder foundation, containing an apparent combination of hardened tar and sediment. At the request of the NYSDEC, a sample of the hardened tar and sediment (EGCHFD-01) was collected from the 0 to 1-foot depth. This sample was analyzed for TCL VOCs by USEPA Method 8260, TCL SVOCs by USEPA Method 8270, TAL metals by USEPA 6000/7000 series methods, total cyanide by USEPA Method 9012, PCBs by USEPA Method 8082 and TPHs by



USEPA Method 8100 modified. Analytical results are summarized in Appendix E on Tables E-5 through E-9, and are discussed in Section 4.1.

2.4 Test Pit Excavation, Sampling and Analyses

Two test pits (EGCTP-01 and ECGTP-02) were excavated along the former gas holder foundation to determine the configuration of the foundation and to evaluate potential impacts to soil from the former gas holder and associated tar tanks. The surveyed test pit locations, as well as the approximate locations of former gas holder facility structures, are depicted on Drawing 2. The final test pit locations and configurations were modified as needed from those specified in the SCWP in order to observe subsurface conditions associated with the gas holder and associated tar tank foundations. Due to the presence of aboveground utilities, test pit EGCTP-02 was moved approximately 60 feet to the east along the holder foundation.

Given the numerous underground utilities present at the Site, the test pits were excavated by vacuum excavation utilizing a guzzler unit. As indicated on Table 2-1, the test pits were completed to depths between 6 and 6.5 feet below grade, sufficient to observe conditions associated with the former gas holder and tar tank foundations. Excavated soil was monitored for total VOCs using a PID and mercury vapor using a Mercury Vapor Analyzer (MVA). During excavation activities, the test pit walls and floor were investigated for evidence of MGP-related materials such as odors, staining, sheens, NAPL, elevated PID readings and remnant structures. Soil from the test pits was described according to the Unified Soil Classification System (USCS) and the NYSDEC's Field Description of Samples at Former MGP Sites document. Detailed notes as to the location of any subsurface structures were documented in the project field notebook and the test pits were photographed. Photographic documentation of the completed field activities is provided in Appendix B. Test pit logs are provided in Appendix B. It should be noted that all test pit logs utilize the National Grid Color Index for Logging Impacted Soil Figure, also provided in Appendix C.



One soil sample was collected from each test pit, and the objective was to sample from areas where visually impacted soil was encountered (such as black staining), if any. As summarized on Table 2-1, the subsurface soil samples collected from the test pits were analyzed for TCL VOCs by USEPA Method 8260, TCL SVOCs by USEPA Method 8270, TAL metals by USEPA 6000/7000 series methods, total cyanide by USEPA Method 9012, PCBs by USEPA Method 8082 and TPHs by USEPA Method 8100 modified. Analytical results are summarized in Appendix E on Tables E-10 through E-14, and are discussed in Section 4.2.

Excavated soil was stored in a roll-off container on-site for subsequent off-site disposal (see Section 2.9). Clean fill was utilized to restore the excavations to grade. Test pit location EGCTP-01 was hot-patched with asphalt and EGCTP-02 was backfilled with clean fill and covered with bluestone. All test pits were staked/marked for follow-up survey. All non-dedicated sampling equipment was decontaminated between sampling locations in accordance with the SCWP.

2.5 Soil Boring, Sampling and Analyses

A total of 20 soil borings (EGCSB-01 through EGCSB-20) were planned to characterize subsurface soil, to obtain a better understanding of site stratigraphy and to collect soil samples for laboratory analysis. The surveyed soil boring locations are provided on Drawing 2. An attempt was made to complete all soil borings in their planned locations; however, final boring placement was dependent on a number of factors including: test pit findings, equipment access and utility clearances. Three soil borings (ECGSB-06, 12 and 20) could not be completed due to field conditions. Changes to the scope of work are summarized on Table 2-1, and are detailed in Section 2.12 of this report. All changes were discussed and approved by the National Grid and the NYSDEC Project Manager prior to implementation.



All soil borings were "hand cleared" to a depth of 8 feet below grade using vacuum excavation and hand tools prior to the use of direct push Geoprobe sampling techniques. After hand clearing, all soil borings were advanced using Geoprobe sampling techniques to a depth of 35 feet below grade, as specified in the SCWP. Based on field observation, this depth is more than 15 feet below the water table. Soil sampling was conducted continuously utilizing decontaminated macro core soil samplers fitted with disposable 4-foot acetate liners.

During the advancement of the soil borings, each recovered soil sample was inspected and characterized by a D&B geologist utilizing the USCS and the NYSDEC's Field Descriptions of Samples at Former MGP Sites document. Each sample was monitored for total VOCs using a PID and mercury vapor using a MVA. Boring logs are provided in Appendix D. It should be noted that all boring logs utilize National Grid's Color Index for Logging Impacted Soil Figure, also provided in Appendix D. The following is a list of observations recorded by the geologist for each recovered sample:

- the presence of NAPL (tar or petroleum);
- PID measurements for approximately every 6 inches of soil in ppm of total VOCs;
- MVA measurements for approximately every 6 inches of soil in milligrams per cubic meter (mg/m³);
- obvious staining or odors;
- color;
- the mineral and/or lithologic components of the material such as: quartz, shale, mica, granite, etc.;
- construction debris (i.e., brick, concrete, etc.);
- organic components such as roots, humus, wood fragments, peat, etc.;
- grain shape such as angular, sub-angular and rounded;
- grain size (significant for sand and gravel only) such as fine, medium and coarse;
- stratification; and



• degree of saturation such as dry, damp, moist, wet or saturated.

As summarized on Table 2-1, two soil samples were selected for chemical analysis during the advancement of each soil boring. One subsurface soil sample was collected from the 2-foot interval located immediately above the water table, and one subsurface soil sample was collected at the 2-foot interval exhibiting the highest PID and/or MVA readings or visual impacts. Separate phase NAPL was not observed in any of the recovered soil samples; therefore, no samples of NAPL were collected for analysis.

All subsurface soil samples collected from the soil borings were analyzed for TCL VOCs by USEPA Method 8260, TCL SVOCs by USEPA Method 8270, TAL metals by USEPA 6000/7000 series methods, total cyanide by USEPA Method 9012, PCBs by USEPA Method 8082 and TPHs by USEPA Method 8100 modified. Analytical results are summarized in Appendix E on Tables E-10 through E-14, and are discussed in Section 4.2.

Upon completion, all soil borings were backfilled with clean fill to grade and hotpatched with asphalt, as appropriate. The soil excavated from the soil borings was stored onsite in a roll-off container for subsequent proper off-site disposal (see Section 2.9). All soil borings were staked/marked for follow-up survey. All drilling equipment and non-dedicated sampling equipment was decontaminated between sampling locations in accordance with the SCWP.

2.6 Monitoring Well Installation and Development

A total of seven groundwater monitoring wells (EGCMW-01 through EGCMW-07) were installed in order to obtain groundwater quality and flow information, and to determine the presence/absence of NAPL in groundwater at the site. The surveyed monitoring well locations are provided on Drawing 2. As indicated on Drawing 2, monitoring well locations EGCMW-04 and EGCMW-06 were completed at soil boring locations EGCSB-02 and



EGCSB-14, respectively. An attempt was made to complete all monitoring wells in their planned locations; however, final placement was dependent on equipment access and utility clearance. Changes to the scope of work are summarized on Table 2-1, and are discussed in Section 2.12 of this report. All changes were discussed and approved by the National Grid and the NYSDEC Project Manager prior to implementation.

Prior to installation, soil samples were collected from each monitoring well location to 35 feet utilizing the direct push sampling techniques detailed in Section 2.5. Boring logs are provided in Appendix D. After the installation of monitoring wells EGCMW-01 and 02, the NYSDEC requested that soil samples be collected for analysis from the remaining monitoring well locations not already associated with soil borings (i.e. EGCMW-03, 05 and 07). Two soil samples were collected for analysis from these three locations in accordance with the procedures described in Section 2.5. Subsurface soil analytical results are summarized in Appendix F on Tables F-10 through F-14, and are discussed in Section 4.2.

All monitoring wells were installed in unconsolidated sediments (overburden) and were set so that the well screen intercepted the water table, which was observed at approximately 18 to 20 feet below grade. All shallow water table wells were installed utilizing a Geoprobe rig and hollow stem augers, rather than the planned use of pre-packed wells installed within the Geoprobe rods due to incompatibility between the well materials and the available Geoprobe rig.

Each monitoring well was completed with a 10-foot length of 1.5-inch PVC well screen and riser pipe. Each well was installed by advancing hollow stem augers to the desired depth with a Geoprobe rig. After reaching the desired depth, the well screen and PVC riser pipe was installed inside the augers. In order to ensure the viability of each groundwater monitoring well in the event that dense non-aqueous phase liquid (DNAPL) was encountered at any location, each well was fitted with a 2-foot sump. Filpro No.2 sand was placed in the



annulus of the soil boring from the bottom of the well to approximately 2 feet above the top of the well screen. A 2-foot bentonite seal was installed above the sand pack. A cement-bentonite grout was then placed above the seal and a locking flush-mounted well cover and cement well pad was installed at grade. A summary of the construction of each monitoring well is provided as Table 2-2, and monitoring well construction logs are provided in Appendix E.

The installed monitoring wells were developed until the turbidity of the groundwater achieved a reading of 50 NTUs (nephelometric turbidity units) or less. Well development was supplemented by measurements of field parameters, including temperature, pH and specific conductance. Development continued until the field parameters stabilized for a minimum of three consecutive readings of 10 percent variability or less.

The soil generated during well installation was stored on-site in a roll-off container for subsequent proper off-site disposal. Well development water was similarly containerized in clean closed-top 55-gallon DOT-approved steel drums. Management of investigation-derived waste is discussed further in Section 2.9. All drilling equipment and non-dedicated sampling equipment was decontaminated prior to and between uses at each sampling location in accordance with the SCWP.

2.7 Groundwater Sampling and Analysis

Groundwater sampling via low flow sampling procedures was performed a minimum of 7 days after the development of all monitoring wells. Prior to collecting samples, the depth to groundwater and LNAPL (if present) was measured in the wells using an electronic oil/water interface probe attached to a measuring tape accurate to 0.01 foot. The probe was



TABLE 2-2

East Garden City Former Stewart Avenue Holder Station
Site Characterization Report
MONITORING WELL CONSTRUCTION SUMMARY

Monitoring Well	Total Well Depth (ft)	Total Boring Depth (ft)	Ground Surface Elevation (ft msl)	Measuring Point Elevation (ft msl)	Casing Diameter (in)	Screen Depth (ft)
EGCMW-01	28.00	35.00	76.08	75.46	1.50	16 - 26
EGCMW-02	29.00	35.00	74.86	74.67	1.50	17 - 27
EGCMW-03	27.00	35.00	77.37	76.59	1.50	15 - 25
EGCMW-04	28.00	35.00	74.85	74.25	1.50	16 - 26
EGCMW-05	27.00	35.00	75.27	74.69	1.50	15 - 25
EGCMW-06	24.50	35.00	74.71	74.43	1.50	12.5 - 22.5
EGCMW-07	28.00	35.00	76.68	75.94	1.50	16 - 26

NOTES:

msl: Mean Sea Level

Depths are measured from ground surface

then lowered to the bottom of each well to check for the presence of DNAPL. LNAPL and DNAPL were not identified in any of the groundwater monitoring wells.

The water level data, well diameter, and well depth were used to calculate the volume of water in each well. The wells were then purged using low-flow purging techniques. Groundwater samples were collected from each well using a small diameter bladder pump equipped with clean, disposable tubing and transferred from the tubing on the outlet of the pump directly into clean laboratory-supplied sample bottles containing appropriate preserving agents.

As indicated on Table 2-1, one groundwater sample was collected from each well and analyzed for TCL VOCs by USEPA Method 8260, TCL SVOCs by USEPA Method 8270, TAL metals by USEPA 6000/7000 series methods, total cyanide by USEPA Method 9012 and PCBs by USEPA Method 8082. Analytical results are summarized in Appendix F on Tables F-15 through F-18 and are discussed in Section 4.3. It should be noted that total cyanide was detected at a concentration above its Class GA Standard in the sample collected from monitoring well EGCMW-06. An additional groundwater sample was collected from this well in September 2011 and analyzed for total cyanide and free cyanide by USEPA Method 9016. In addition, the monitoring well exhibiting the second highest total cyanide concentration (EGCMW-07) and an upgradient well (EGCMW-02) were resampled in September 2011 for comparison purposes.

Purge water was containerized in clean closed-top 55-gallon DOT-approved steel drums for subsequent proper off-site disposal. All non-dedicated sampling equipment (e.g., submersible pumps and oil/water interface probe) was decontaminated prior to and between each sampling location in accordance with the SCWP.

2-15



In addition to the initial round of water level gauging performed during groundwater sampling, one additional round of water levels was collected from all installed monitoring wells in order to confirm groundwater levels, groundwater flow directions, and the presence or absence of LNAPL or DNAPL.

2.8 Site Survey

At the completion of installation activities, the location and elevation of all test pits, soil borings and monitoring wells were surveyed by a New York State-licensed surveyor for production of a composite base map. Two elevation measurements were taken at each monitoring well location: the elevation on the rim of the flush-mounted manhole and the elevation of the top of PVC well casing. The survey elevations were measured to an accuracy of 0.01 foot above the National Geodetic Vertical Datum of 1929 (an approximation of mean sea level).

2.9 Management of Investigation-Derived Waste

Investigation-Derived Waste (IDW) included visually impacted soil, groundwater purged from monitoring wells and decontamination water. Soil waste was containerized in a roll-off container, and wastewater was containerized in clean closed-top 55-gallon DOT-approved steel drums. The containers and drums were sealed at the end of each workday and labeled with the date, the well or boring number(s), the type of waste (i.e., soil boring soil, test pit soil, development water or purge water) and the name of a point-of-contact, as appropriate. Composite and grab samples of soil waste and wastewater were collected for waste characterization and analyzed for TCLP VOCs, TCLP SVOCs, TCLP metals, PCBs, modified TPHs, ignitability, corrosivity, reactivity, and total cyanide, as per the approved disposal facility's sampling requirements. All drums were labeled "pending analysis" until laboratory data was available and the IDW was properly disposed.



2.10 Data Reduction

Data validation was performed in accordance with the USEPA Region I validation guidelines for organic and inorganic data review. These validation guidelines are regional modifications to the National Functional Guidelines for organic and inorganic data review (USEPA 1994). NYSDEC Analytical Services Protocol (ASP) Category B deliverable data packages were specified for all sample analyses, in accordance with NYSDEC ASP (6/2005). Specific data reduction, validation and reporting procedures that were followed are described in the SCWP. Validation included the following:

- Verification of 100% of all QC sample results (both qualitative and quantitative);
- Verification of the identification of 100% of all sample results (both positive hits and nondetects);
- Recalculation of 10% of all investigative sample results; and
- Preparation of a Data Usability Summary Report (DUSR), provided in Section 2.11.

2.11 Data Usability Summary Report

A total of 13 surface soil samples, 42 subsurface soil samples, 10 groundwater samples and one solid tar/sediment sample were collected as part of the Site Characterization of the former Holder Station. As per the NYSDEC-approved Site Characterization Work Plan, all samples were analyzed for VOCs (with the exception of surface soil samples), SVOCs, TAL metals, total cyanide, PCBs and TPHs, with the following exceptions:

• The 7 groundwater samples collected in June 2011 from monitoring wells EGCMW-01 through 07 were not analyzed for TPHs; and



 Based on observed concentrations of total cyanide detected in groundwater samples collected in June 2011, the three groundwater samples collected in September 2011 from monitoring wells EGCMW-02, 06 and 07 were analyzed for total and free cyanide only.

The laboratory analyses were performed by Chemtech, located in Mountainside, New Jersey, except for the three groundwater samples analyzed for total and free cyanide which were analyzed by META Environmental, Inc. located in Watertown, MA. All analyses were performed in accordance with the USEPA SW-846 and NYSDEC 6/05 Analytical Services Protocol (ASP) methodologies.

Sixteen data packages (C1993, C2019, C2201, C2222, C2241, C2263, C2293, C2317, C2341, C2361, C2375, C2430, C2522, C2567, C2585 and DB110913) have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/Quality Control (QA/QC) requirements. Data Validation Checklists are presented in Appendix G. The findings of the validation process are presented below.

- Dimethylphthalate in data packages C1993, C2201 and C2241; cyanide in data packages C1993, C2241, C2263, C2293, C2317, C2341, C2361 and C2375; methylene chloride in data packages C2019, C2263 and C2317; lead, selenium, and calcium in data package C2375; and copper, sodium, thallium and zinc in data package C2522 were qualified as non-detect (U) due to blank results.
- Benzaldehyde exhibited percent recoveries (%Rs) that were outside QC criteria in the matrix spike and/or matrix spike duplicate in data packages C1993, C2019, C2201, C2222, C2241, C2263, C2293, C2317, C2341, C2361, C2375, C2430, C2522 and C2567 and was qualified as estimated (UJ) in the corresponding samples.
- 1,2,4,5-Tetrachlorobenzene and 2,3,4,6-tetrachlorophenol exhibited %Rs and relative percent differences (RPDs) that were outside QC criteria in the matrix spike and/or matrix spike duplicate in data packages C2522 and C2567 and were qualified as estimated (UJ) in the corresponding samples.



- Acetone and 1,4-dioxane in data package C2567, and 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol in data package C2585 exhibited %Rs that were below the QC limit in the laboratory control sample. As a result, they were qualified as estimated (UJ) in the corresponding samples.
- Methylene chloride exhibited %Rs and RPDs that were outside QC criteria in the matrix spike and/or matrix spike duplicate in data package C2263. As a result, it was qualified as estimated (J) in the corresponding samples.
- The RPD was above QC limits for fluoranthene and pyrene in data package C2201 and was qualified as estimated (J) in the corresponding samples.
- The surrogates were below QC limits in surface soil sample EGCSS-12 for SVOCs and within QC limits in the re-analysis. The re-analysis for SVOCs was reported for surface soil sample EGCSS-12.
- Aroclor-1260 was laboratory qualified with a "P" due to the duel column conformation percent difference (%D) in surface soil sample EGCSS-12 and was qualified as estimated (J).
- The surrogates were above QC limits in subsurface soil sample EGCSB-07 (14.5 to 16.5 feet) for PCBs, as well as in the reanalysis for this sample. PCBs were not detected in either analysis; therefore, the original analysis concentration was reported.
- The surrogates were below QC limits and numerous SVOCs and PCBs were qualified as estimated (J/UJ) in samples specific to data packages C1993, C2019 and C2361.
- Bromochloromethane in data package C2019 exhibited a %D above the QC limit in the continuing calibration and was qualified as estimated (UJ) in the corresponding samples.
- Phenanthrene in gas distribution pipe sample EGCHFD-01 (0 to 1 foot); pyrene in subsurface soil sample EGCTP-02 (1 to 2 feet); fluoranthene in subsurface soil sample EGCSB-07 (10 to 12 feet); and phenanthrene, fluoranthene and pyrene in subsurface soil sample EGCSB-16 (8 to 10 feet) exhibited initial analyses exceeding calibration ranges and were qualified as "E". The re-analyses which were done at a secondary dilution were reported with a "D" qualifier.
- TPH %Rs were outside the QC limit in the MS/MSD and/or the RPDs were above QC limits in data packages C2241, C2263, C2293, C2341 and C2361. As a result, TPHs were qualified as estimated (J) in the corresponding samples.



- Thallium in data package C2263; copper in data package C2293; magnesium and zinc in data package C2522; and sodium in data packages C2567 and C2585 exhibited %Rs outside the QC limits in their associated spike samples. These metals were qualified as estimated (J/UJ) in the corresponding samples.
- Numerous metals in data packages C2201, C2222, C2241, C2317, C2341 and C2567 exhibited %Rs outside QC limits in the contract required detection limit (CRDL) standard and were qualified as estimated (J) in the corresponding samples.
- Metals and/or mercury in data packages C1993, C2201, C2222, C2241, C2293, C2317, C2341, C2361, C2430 and DB110913 exhibited RPDs above the QC limit of 20% for the laboratory duplicate and were qualified as estimated (J/UJ) in the corresponding samples.
- Numerous metals exhibited %Ds that were above the QC limit of 10% for the serial dilution check samples and were qualified as estimated (J/UJ) in the samples associated with data packages C1993, C2241, C2263, C2293 and C2522.
- Field duplicate results for TPH was outside QC limits for surface soil sample EGCSS-03 and were qualified as estimated (J).

Based on the findings of the data validation process, the results are deemed valid and usable for environmental assessment purposes as qualified above.

2.12 Scope of Work Modifications

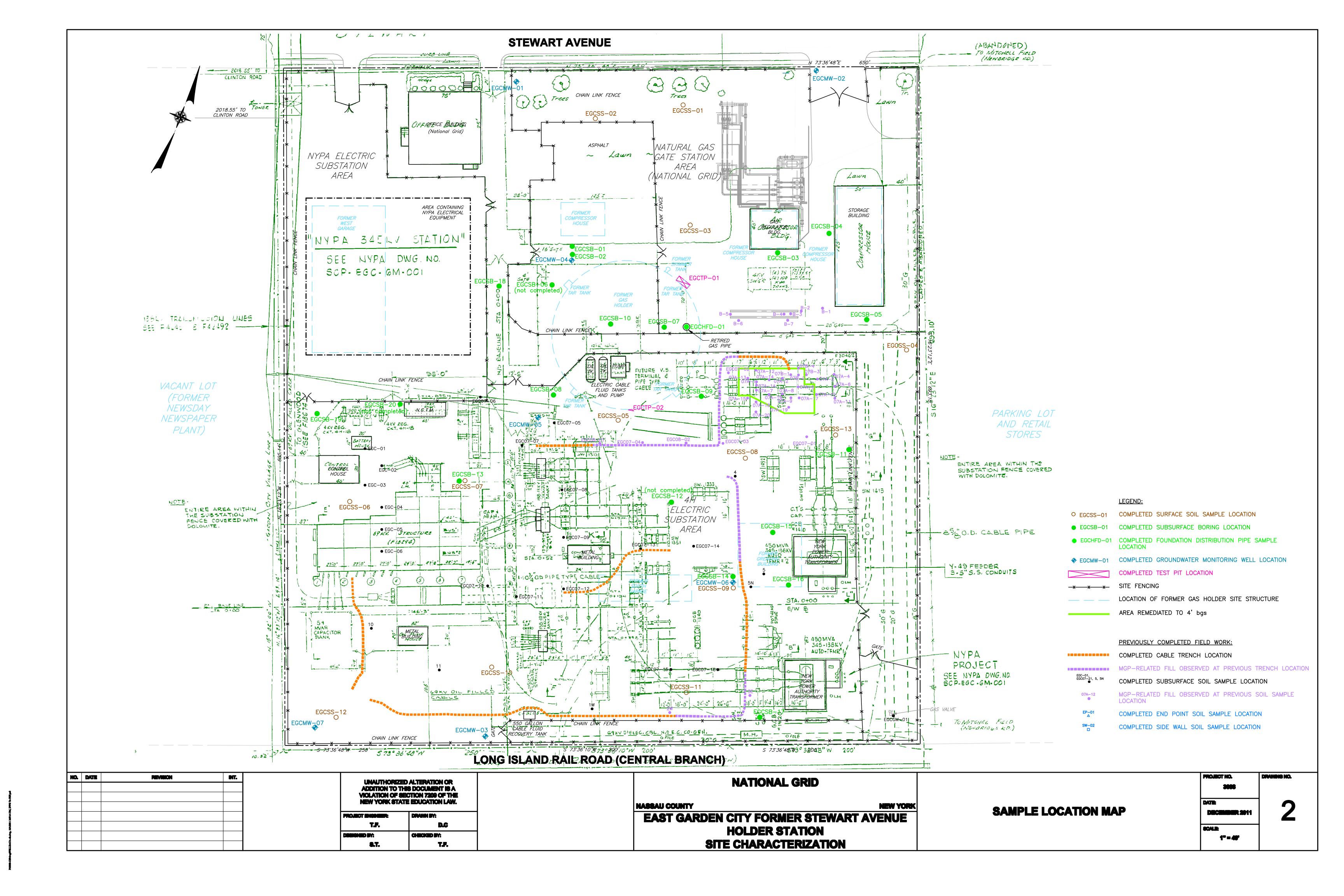
All modifications to the Site Characterization scope of work were discussed with and approved by National Grid and the NYSDEC Project Manager prior to implementation. All scope of work modifications are summarized on Table 2-1, and are detailed below:

 Several sample locations were relocated due to the presence of aboveground and underground utilities, including test pit EGCTP-02, soil borings EGCSB-01, 02, 08, 11, 14, 15, 16 and 19, and monitoring wells EGCMW-01, 02 and 07. The completed sample locations were selected to meet the original objectives of each location.



- Three soil borings (EGCSB-06, 12 and 20) could not be completed due to refusals (EGCSB-06) and the presence of aboveground and underground utilities (EGCSB-12 and 20).
- Based on an incompatibility between the planned pre-packed wells and the available Geoprobe rig, monitoring wells were installed using a Geoprobe rig and hollow stem augers.
- At NYSDEC request, soil samples were collected for analysis from monitoring well locations EGCMW-03, 05 and 07.
- The analysis of PCBs was added to all samples, rather than only samples collected in the electric substation yard.
- An additional groundwater sample was collected from monitoring wells EGCMW-02, 06 and 07 for analysis of total and free cyanide in order to confirm and further investigate the observed cyanide concentration detected in EGCMW-06.
- A sample of solidified tar/sediment (EGCHFD-01) was collected from a retired gas pipe observed near the perimeter of the former gas holder foundation.





3.0 SITE GEOLOGY AND HYDROGEOLOGY

The following section presents the findings, as well as a discussion and interpretation of geologic and hydrogeologic data collected during the Site Characterization. Information utilized in support of this evaluation includes the following:

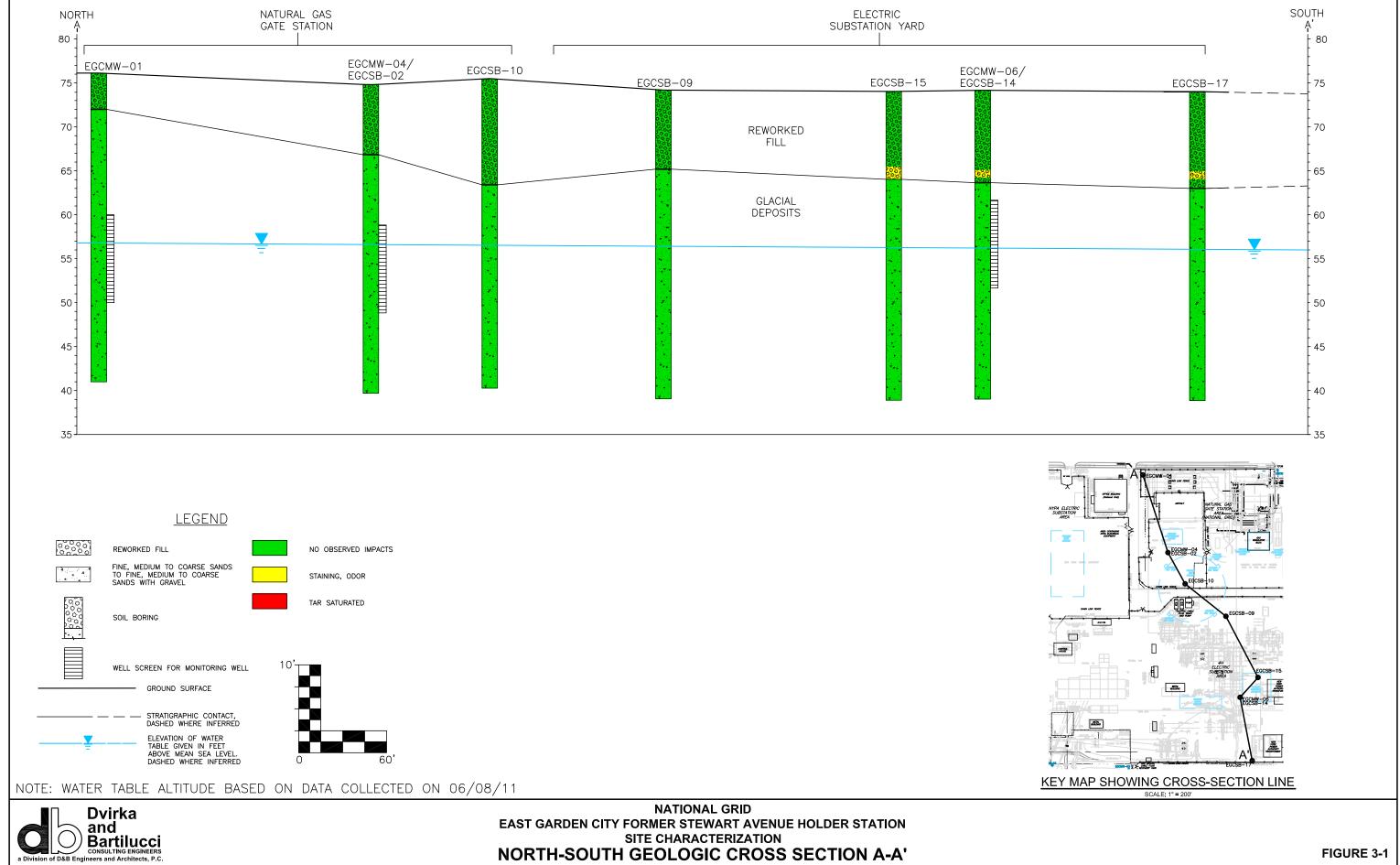
- Logs from completed test pits, soil borings and groundwater monitoring wells;
- Hydraulic head measurements from groundwater monitoring wells; and
- Geologic data obtained from previously completed investigations and the IRM.

The locations of test pits, soil borings and monitoring wells referenced in this section are depicted on Drawing 2. Test pit and boring logs for the Site Characterization are provided in Appendix C and D, respectively. Based on the information described above, two geologic cross sections of the Site were generated, and are provided as Figures 3-1 and 3-2. Figure 3-1 presents north-south geologic cross section A-A' which traverses the Site from the north near Stewart Avenue through the former Gas Holder foundation and electric substation to the southern end of the Site near the LIRR right-of-way. Figure 3-2 presents east-west geologic cross section B-B' which traverses the Site from the west near the lot of the former Newsday plant through the former Gas Holder foundation and the natural gas gate station to the eastern end of the Site. Note that the cross-sections depict visual contamination utilizing the National Grid Color Index for Logging Impacted Soil.

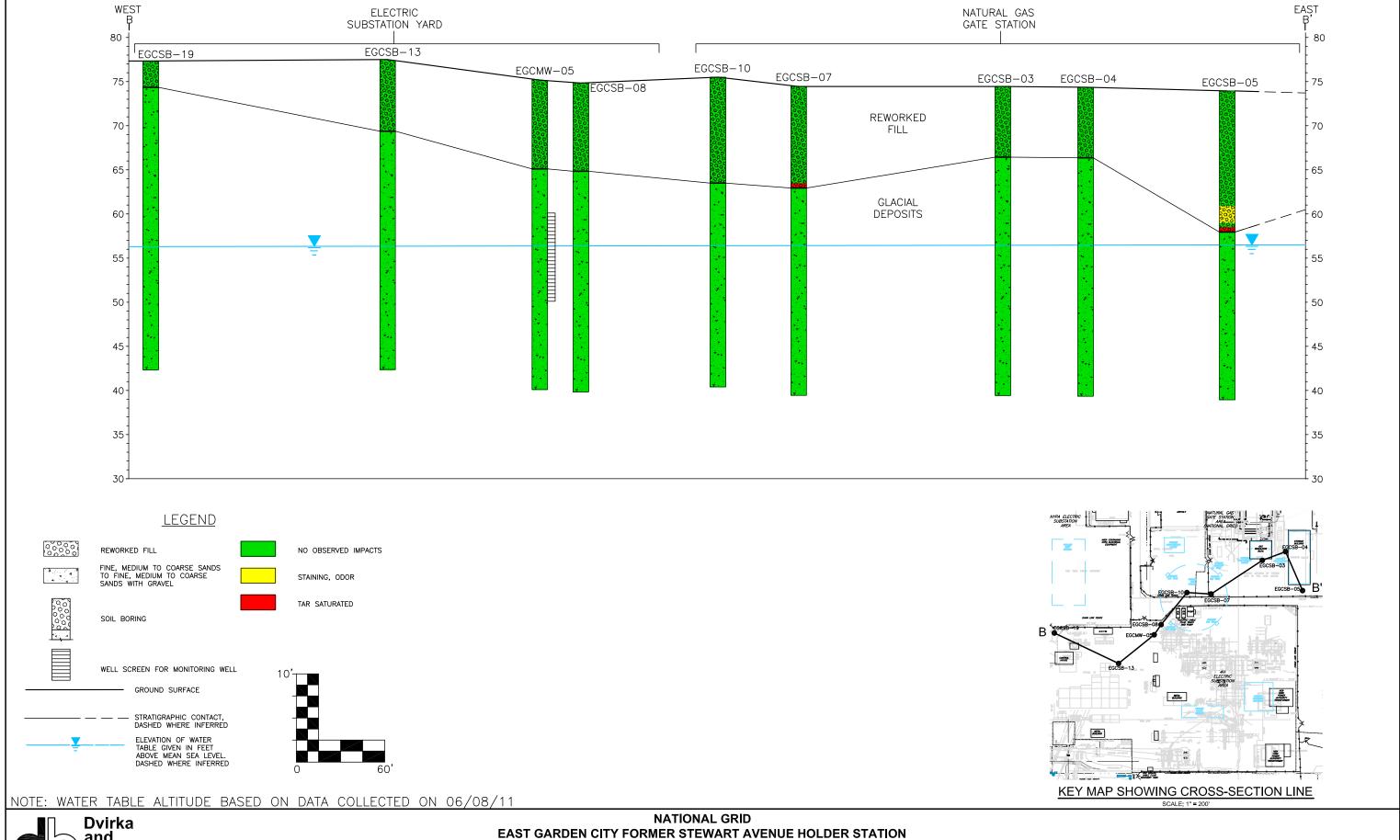
3.1 Topography

As described in the SCWP, the topography of the Site is relatively flat, with a general topographic gradient sloping to the south. Ground surface elevation ranges from approximately 75 to 77 feet above mean sea level (msl). There are no surface water bodies located on or in the vicinity of the Site.





SITE CHARACTERIZATION NORTH-SOUTH GEOLOGIC CROSS SECTION A-A'



NATIONAL GRID
AST GARDEN CITY FORMER STEWART AVENUE HOLDER STATION
SITE CHARACTERIZATION
EAST-WEST GEOLOGIC CROSS SECTION B-B'

3.2 Geology

A general description of the geology of the area has been previously derived from Smolensky, et al., 1989, and summarized in the SCWP. The Site is estimated to be underlain by approximately 1,000 feet of Cretaceous and Pleistocene-aged unconsolidated deposits overlying southeastward sloping bedrock. The unconsolidated deposits immediately overlying bedrock were deposited during the Cretaceous age and form, in ascending order, the Raritan and Magothy formations.

The Raritan Formation consists of the Lloyd Sand and the Raritan Clay. The Lloyd Sand (also known as the Lloyd aquifer) is approximately 300 feet thick beneath the Site and consists of sand and gravel with some clay lenses. The Raritan confining unit consists of silty and solid clay, and lenses and layers of sand, with a thickness of approximately 100 feet. Because of low permeability, the Raritan Clay serves as a confining unit for the underlying Lloyd Sand. The Magothy Formation (also known as the Magothy aquifer) is a deltaic deposit consisting of alternating layers of fine sand, silt and clay. The Magothy Formation, which is approximately 500 feet thick beneath the Site, is unconformably overlain by the glacial deposits of Pleistocene age (the Upper Glacial aquifer).

The Upper Glacial aquifer consists primarily of glacial outwash deposits, and may be as much as 100 feet thick at the Site. Boring logs from the Site Characterization provide direct observations of the Upper Glacial aquifer. These glacial deposits are generally characterized as a light brown to tan/orange, well sorted sand, which can range from fine to coarse. The sand is often mixed with fine to medium gravel, and little to no silt or clay. The water table is located in the glacial deposits of the unconfined Upper Glacial aquifer.

Throughout the Site, recent (Holocene age) fill deposits overly the Upper Glacial aquifer immediately below the ground surface. All test pits and soil borings were completed in



the fill deposits and the underlying Upper Glacial aquifer. However, all evidence of MGP-related materials was observed in the fill deposits. The following presents additional discussion and detail concerning the fill deposits:

3.2.1 Fill Deposits

Recent (Holocene-aged) fill deposits are present across the Site, overlying the glacial deposits and the water table. Previous investigations have found that these deposits are comprised of a reworked fill consisting of fine to medium sand, some fine to medium gravel and varying amounts of anthropogenic material, such as concrete, brick and metal fragments, and coal clinker. The logs for the Site Characterization test pits and soil borings generally corroborate this description. The fill deposits are generally described as a brown to dark brown sand, which is often mixed with significant amounts of gravel. This soil is generally well graded and contains little or no silt and clay.

Based on limited soil data deeper than 6 feet, the previous investigations determined that the fill thickness was variable but was a minimum of 4 to 6 feet thick. However, the Site Characterization determined that the fill deposits are generally 8 to 12 feet in areas characterized at the Site. Anthropogenic materials, such as brick, asphalt and coal clinker were observed at these depths in nearly one third of all completed soil borings. The fill deposits are deepest at soil boring EGCSB-05, located in the southeastern portion of the natural gas gate station, where a one-inch thick lens of solid tar and coal clinker were observed at a depth of 16 feet below grade (see Figure 3-2). The transition from the fill deposits to the glacial deposits of the underlying Upper Glacial aquifer has been estimated based on the Site Characterization soil boring findings, and is depicted on Figures 3-1 and 3-2. This transition was determined by the lack of anthropogenic materials, as well as the distinctive lighter color and slightly coarser texture of the glacial deposits.



As discussed in Section 1.4, previous soil boring and trenching locations completed in the southeastern portion of the natural gas gate station and the eastern portions of the electric substation had exhibited visually impacted soil which may have been MGP-related. These locations are depicted in purple on Drawing 2. The visual MGP-related impacts observed during the previous investigations were observed at a depth of approximately 4 to 6 feet below grade, and included gray and black staining and varying amounts of coal clinker, including some coal clinker that exhibited a blue coloration. Five soil borings completed during the Site Characterization in these areas (EGCSB-05, 14, 15, 16 and 17) exhibited evidence of MGP-related fill, including some black staining, slight naphthalene-like odors, coal clinker and PID readings of up to 10 ppm. These impacts are generally confined to narrow zones within each soil boring at depths between 8 to 10 feet below grade, with the exception of the solid tar lens and coal clinker observed at a depth of 16 feet below grade at EGCSB-05. It should be noted that although coal clinker was observed in several soil borings, blue colored clinker was not observed in the soil borings or test pits completed during the Site Characterization.

Some visual contamination was observed in soil around (associated with) the former gas holder foundation, portions of which remain exposed on-site. The observed contamination included black staining observed at a depth of 1 to 2 feet below grade at test pit EGCTP-01 and a solid tar lens 3 to 4 inches thick at a depth of 1.5 feet below grade at test pit EGCTP-02. Both test pits were completed along the edge of the foundation of the former gas holder. In addition, test pit EGCTP-01 was completed within the footprint of a former tar tank in the northeast portion of the gas holder foundation. The former tar tank foundation was identified during the test pitting activities. Soil boring EGCSB-07 was completed within the footprint of the former gas holder and exhibited a half-inch thick lens of solid tar with a slight coal tar-like odor at a depth of 11.5 feet below grade.





3.3 Hydrogeology

Based on a review of Smolensky, et al., 1989, the Upper Glacial aquifer is the uppermost water-bearing unit at the Site. According to the NYSDEC, groundwater at the Site would be classified as GA (New York State Codes, Rules and Regulations, Title 6, Chapter X, Parts 700-705, effective March 1998). The best usage of GA water is as a source of potable water supply.

A round of water level measurements was collected on June 8, 2011 from all monitoring wells installed during the Site Characterization, including EGCMW-01 through EGCMW-07. The June 8, 2011 water level measurements, with calculated water elevations, are summarized on Table 3-1. A water table contour map generated using these water level measurements is provided as Figure 3-3.

Based on a review of Table 3-1, depth to groundwater at the Site is approximately 18 to 20 feet below grade. During the June 8, 2011 measurement round, the groundwater elevation ranged from 56.83 feet above msl at monitoring well EGCMW-02, located at the northeast corner of the Site near Stewart Avenue, to a minimum of 55.89 feet above msl at monitoring well EGCMW-07, located at the southwest corner of the Site. Figure 3-3 indicates that shallow groundwater flows in a south/southeasterly direction. As stated in Section 3.1, there are no surface water bodies located on or in the vicinity of the Site.



TABLE 3-1

East Garden City Former Stewart Avenue Holder Station

Site Characterization Report

WATER LEVEL MEASUREMENTS AND GROUNDWATER ELEVATIONS

Monitoring Well	Measuring Point Elevation (ft msl)	Total Installed Well Depth (ft bgs)	Depth to Water ¹ (ft)	Calculated Water Elevation (ft msl)
EGCMW-01	75.46	28.00	18.65	56.81
EGCMW-02	74.67	29.00	17.84	56.83
EGCMW-03	76.59	27.00	20.61	55.98
EGCMW-04	74.25	28.00	17.76	56.49
EGCMW-05	74.69	27.00	18.43	56.26
EGCMW-06	74.43	24.50	18.32	56.11
EGCMW-07	75.94	28.00	20.05	55.89

NOTES:

Data collected on June 8, 2011.

¹Measurements collected in feet below top of casing (measuring point)

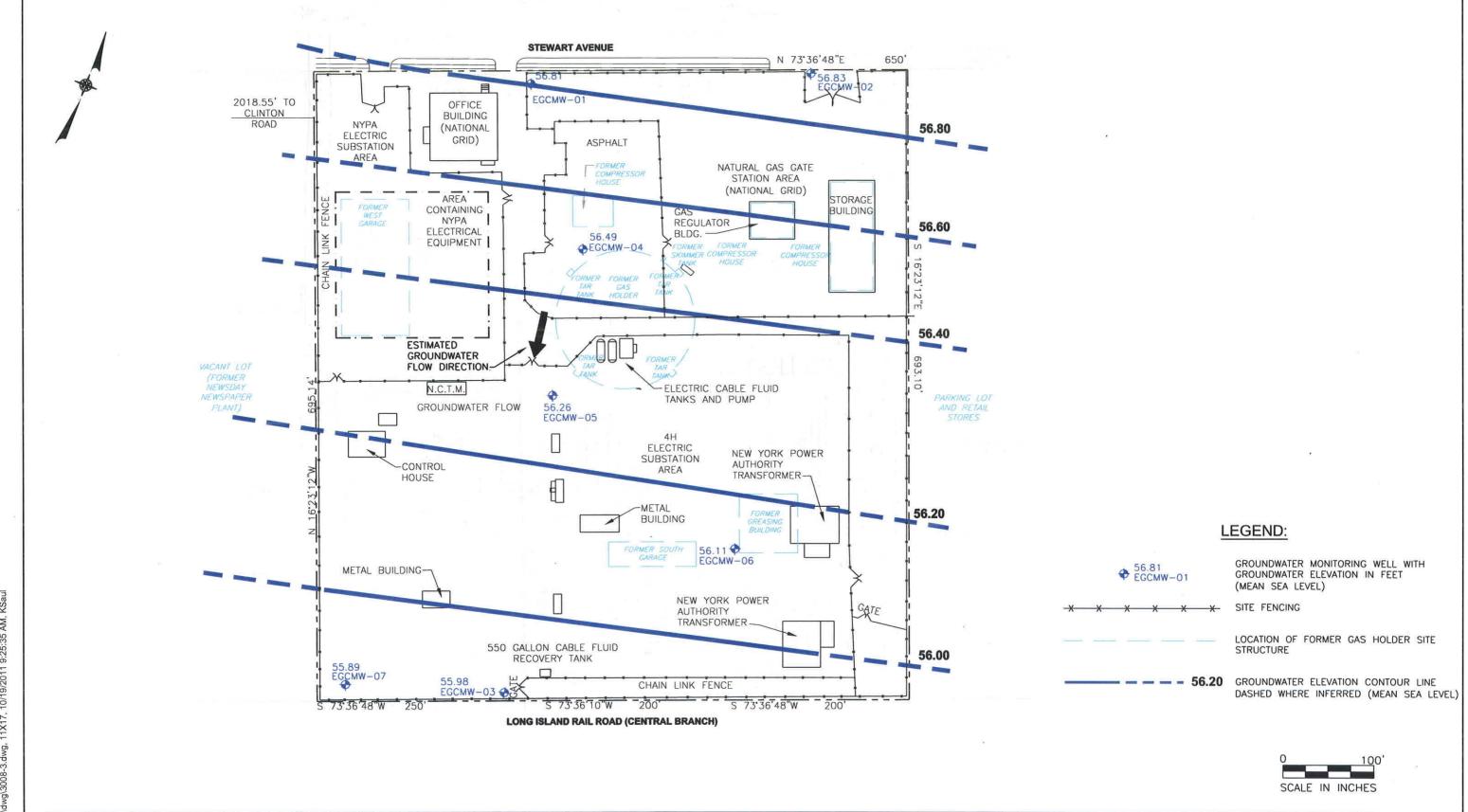
msl: Mean Sea Level

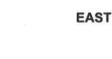
bgs: Below Ground Surface

Dvirka

Bartilucci CONSULTING ENGINEERS Engineers and Architects, P.C.

and





NATIONAL GRID
EAST GARDEN CITY FORMER STEWART AVENUE HOLDER STATION
EAST GARDEN CITY, NEW YORK
WATER TABLE CONTOUR MAP

SCALE:1"=100'

FIGURE 3-3

4.0 SITE CHARACTERIZATION FINDINGS

This section presents a detailed discussion of the results of the Site Characterization, specific to the presence or absence of MGP-related contaminants in soil and groundwater. In order to present a logical discussion of the data generated as part of this Site Characterization, the discussion has been organized into the following subsections:

- Surface Soil
- Subsurface Soil
- Groundwater
- Exposure Assessment

Drawing 2, provided in a map pocket at the end of Section 2.0, graphically presents the locations of all samples collected as part of the Site Characterization. Tables F-1 through F-18, provided in Appendix F, summarize the chemical data for all samples collected during the Site Characterization. The analytical results of the investigation were compared to standards, criteria and guidelines (SCGs) to protect human health and the environment based on current and future land use of the Site. Given the Site is currently utilized as an electric substation and a natural gas gate station, the most appropriate SCGs for the site for surface and subsurface soil are the Soil Cleanup Objectives (SCOs) for Industrial Use as defined in NYSDEC 6 NYCRR Part 375 (hereinafter referred to as Industrial Use SCOs). For groundwater, the Class GA Groundwater Standards and Guidance Values (hereinafter referred to as Class GA Standards) provided in the NYSDEC Technical and Operation Guidance Series (TOGS) (1.1.1) were utilized as SCGs. Concentrations above the SCGs are highlighted on the data tables.

Drawing 3, provided in a map pocket at the end of this section, summarizes all total benzene, toluene, ethylbenzene and xylene (BTEX) and total polycyclic aromatic hydrocarbon



(PAH) concentrations for surface soil and subsurface soil samples, as well as the hardened tar/sediment sample (EGCHFD-01) collected from a retired gas pipe observed at the surface of the gas holder foundation. In addition, any concentrations detected above the Industrial Use SCOs are noted on Drawing 3 in bold font.

4.1 Surface Soil

As summarized on Table 2-1, a total of 13 surface soil samples were collected for chemical analysis as part of the Site Characterization. As shown on Drawing 2, the sample locations were evenly distributed throughout the Site and were collected from unpaved areas below grass or crushed stone cover material, if present. All samples were analyzed for SVOCs (Table F-1), TAL metals and total cyanide (Table F-2), PCBs (Table F-3) and TPHs (Table F-4).

As discussed in Section 2.3, a retired gas pipe was observed at the surface on the eastern side of the gas holder foundation, containing an apparent combination of hardened tar and sediment. A sample of the hardened tar and sediment (EGCHFD-01) was collected from the retired gas pipe from 0 to 1 foot in depth. This sample was analyzed for VOCs (Table F-5), SVOCs (Table F-6), TAL metals and total cyanide (Table F-7), PCBs (Table F-8) and TPHs (Table F-9). To be conservative, the analytical results for the hardened tar/sediment sample were compared to Industrial Use SCOs, even though this material is in a hardened condition. For organizational purposes, the discussion of the analytical results of this sample is provided below following the surface soil sample results.

SVOCs and PAHs

PAHs are the most commonly encountered SVOC compounds at former MGP sites. As depicted on Drawing 3, total PAH concentrations in all surface soil samples were found to be relatively low, ranging from a minimum of 0.1 mg/kg in EGCSS-12 to a maximum of 22 mg/kg in EGCSS-02, located in the north-central portion of the Site inside the natural gas



gate station. The only SVOC detected above its Industrial Use SCO was benzo(a)pyrene, detected at a concentration of 2.1 mg/kg in EGCSS-02, above the SCO of 1.1 mg/kg.

TAL Metals and Total Cyanide

All TAL metals were detected at concentrations well below their respective Industrial Use SCOs in all 13 surface soil samples. Total cyanide was not detected in 8 of the 13 surface soil samples. The remaining five samples exhibited very low total cyanide concentrations of less than 2 mg/kg, well below its Industrial Use SCO of 10,000 mg/kg.

PCBs

Ten of the 13 surface soil samples were found to be free of detectable concentrations of any PCB compounds. Three samples exhibited detectable concentrations of Aroclor 1260 at less than 0.5 mg/kg, well below its Industrial Use SCO of 25 mg/kg.

TPHs

TPH concentrations ranged from a minimum of 9 mg/kg in EGCSS-12 to a maximum of 4,617 mg/kg in EGCSS-09 (collected from 0 to 2 inches below grade), located in the eastern portion of the electric substation yard in the vicinity of the former south garage and former Greasing Building, as well as the current NYPA transformer. However, the majority of the samples (11 of 13) exhibited TPH concentrations well below 100 mg/kg. There is no Industrial Use SCO established by the NYSDEC for TPHs; however, the NYSDEC Region 2 office has previously used 10,000 mg/kg as an informal reference value or "benchmark" to determine if there exists significant petroleum contamination, which may warrant further investigation or remediation. In addition, note that the PAH concentrations in surface soil were relatively low and not detected at concentrations above 22 mg/kg.



Sample from Retired Gas Pipe

Drawing 3 shows the location of the hardened tar observed in the retired gas pipe. Seven PAHs were detected above their respective Industrial Use SCOs in EGCHFD-01, with a total PAH concentration of 4,292 mg/kg. The 2,000 mg/kg concentration of phenanthrene is above the Industrial Use SCO of 1,000 mg/kg. In addition, the TPH concentration was 4,042 mg/kg, which is below the NYSDEC Region 2 office 10,000 mg/kg reference value discussed above. VOCs, metals, total cyanide and PCBs were either not detected or detected well below their respective Industrial Use SCOs.

4.2 Subsurface Soil

As summarized on Table 2-1, a total of 42 subsurface soil samples were collected for chemical analysis from the 17 completed soil borings, three of the seven groundwater monitoring well boring locations and test pit locations EGCTP-01 and EGCTP-02. All samples were analyzed for VOCs (Table F-10), SVOCs (Table F-11), TAL metals and total cyanide (Table F-12), PCBs (Table F-13) and TPHs (Table F-14). A discussion of the visual evidence of MGP-related impacts that was observed in the test pits and soil borings was provided in Section 3.2.1, and is referenced below where appropriate.

VOCs and BTEX

With the exception of methylene chloride, VOCs were generally not detected in the 42 subsurface soil samples. Methylene chloride, a common laboratory contaminant, was detected in the majority of the samples but at concentrations well below its Industrial Use SCO of 1,000 mg/kg. In addition, a trace concentration of PCE of 0.009 mg/kg was



detected in subsurface soil sample EGCSB-05 (14 to 16 feet), well below its Industrial Use SCO of 300 mg/kg.

Test pit subsurface soil sample EGCTP-02 (1 to 2 feet) exhibited concentrations of benzene, xylene, styrene and toluene, at trace concentrations of less than 0.01 mg/kg, and well below their respective NYSDEC Industrial Use SCOs. Test pit EGCTP-02 was completed along the former gas holder foundation. As discussed in Section 3.2.1, a solid tar lens 3 to 4 inches thick was observed at a depth of 1.5 feet below grade at test pit EGCTP-02.

SVOCs and PAHs

Only 8 of the 42 subsurface soil samples exhibited detectable concentrations of PAHs, with total PAH concentrations ranging from 0.13 mg/kg in EGCSB-11 (8 to 10 feet) to a maximum of 100 mg/kg detected in test pit subsurface soil sample EGCTP-02 (1 to 2 feet). The second highest total PAH concentration of 25 mg/kg was detected in EGCSB-16 (8 to 10 feet), located in the eastern portion of the electric substation yard in the vicinity of the former Greasing Building and current NYPA transformer. However, most of the subsurface soil samples that exhibited detectable total PAH concentrations were less than 5 mg/kg.

As depicted on Drawing 3, benzo(a)pyrene was the only PAH detected above the Industrial Use SCO of 1.1 mg/kg in two samples:

- EGCTP-02 (1 to 2 feet) at a concentration of 6.5 mg/kg; and
- EGCSB-16 (8 to 10 feet) at a concentration of 1.5 mg/kg.

The samples exhibiting the highest PAH concentrations exhibited the most evidence of visual impacts characteristic of MGP-related fill, such as the solid tar lens observed in the sample collected from test pit EGCTP-02 along the former gas holder foundation.



Furthermore, soil boring EGCSB-16 exhibited black staining and a slight naphthalene-like odor at a depth of 8 to 10 feet below grade.

In addition to PAHs, several other SVOCs were detected in the subsurface soil samples at relatively low concentrations including bis(2-ethylhexyl)phthalate and carbazole. However, both compounds were found at concentrations of less than 1.0 mg/kg and do not have a specific NYSDEC Industrial Use SCO. While carbazole can be associated with MGP tars, bis(2-ethylhexyl)phthalate is a common laboratory contaminant, which may be the source of this compound.

TAL Metals and Total Cyanide

All TAL metals were detected at concentrations well below their respective Industrial Use SCOs in all 42 subsurface soil samples. Total cyanide was found to be non-detectable in 34 of the 42 subsurface soil samples. Eight of the samples exhibited very low total cyanide concentrations of less than 10 mg/kg, well below its Industrial Use SCO of 10,000 mg/kg.

<u>PCBs</u>

Forty-one out of 42 subsurface soil samples were non-detect for PCB compounds. Only EGCSB-09 (15 to 17 feet) exhibited a detectable concentration of Aroclor 1254 at 0.05 mg/kg, well below its Industrial Use SCO of 25 mg/kg.

TPHs

TPH concentrations ranged from a minimum of 2 mg/kg detected in four samples to a maximum of 1,501 mg/kg, detected in test pit subsurface soil sample EGCTP-02 (1 to 2 feet). The second highest TPH concentration of 230 mg/kg was detected in EGCSB-15 (8.5



to 10.5 feet), located in the eastern portion of the electric substation yard in the vicinity of the former Greasing Building and current NYPA transformer. A slight naphthalene-like odor was also observed at this depth in soil boring EGCSB-15. However, the majority of the samples (40 out of 42) exhibited TPH concentrations of less than 50 mg/kg. There is no Industrial Use SCO established by the NYSDEC for TPH; however, the NYSDEC Region 2 office has previously used 10,000 mg/kg as an informal "reference" or "benchmark" to determine if there exists significant petroleum contamination, which may warrant further investigation or remediation.

4.3 Groundwater

As summarized on Table 2-1, a total of 7 monitoring wells (EGCMW-01 through EGCMW-07) were installed and sampled as part of the field investigation. Based on a south/southeasterly direction of groundwater flow, as detailed in Section 3.3, monitoring wells EGCMW-01 and EGCMW-02 are considered upgradient of the Site, with the remaining wells being downgradient of any potential on-site contamination sources. All samples were analyzed for VOCs (Table F-15), SVOCs (Table F-16), TAL metals and total/free cyanide (Table F-17) and PCBs (Table F-18). Note that LNAPL and DNAPL was not observed in any of the monitoring wells.

VOCs and BTEX

Groundwater samples collected from upgradient monitoring wells EGCMW-01 and EGCMW-02 contained a number of VOCs, including BTEX compounds in EGCMW-02, PCE in both upgradient wells, and TCE in EGCMW-01. PCE was detected at a concentration of 6.1 ug/l in EGCMW-01, above its Class GA Standard of 5 ug/l. In addition, trace concentrations of PCE and TCE below Class GA Standards were detected in downgradient monitoring wells EGCMW-03, 04 and 05. Trichlorofluoromethane was also detected at a



trace concentration of 1.2 ug/l in downgradient well EGCMW-06, below its Class GA Standard of 5 ug/l. PCE, TCE and trichlorofluoromethane are not contaminants associated with former MGP operations. As discussed in Section 1.5.2, there are a number of upgradient sources in the vicinity of the Site that have documented PCE and TCE contamination including the ORCA NPL site and Award Packaging, a State Hazardous Waste Site. In addition, there is at least one open petroleum spill associated with a service station located less than 1/8 of a mile upgradient of the Site, which may have impacted site groundwater with BTEX compounds.

With the exception of the PCE, TCE and trichlorofluoromethane, no other VOCs were detected in the downgradient monitoring wells, including BTEX compounds or other VOCs typically associated with former MGP operations.

SVOCs and PAHs

All SVOCs and PAH compounds were found to be non-detectable in all upgradient and downgradient monitoring wells.

TAL Metals and Cyanide

The groundwater samples collected from the 7 monitoring wells did not contain TAL metal concentrations above their Class GA Standards with the exception of iron, manganese and sodium. However, all three metals are common groundwater constituents and are not considered contaminants related to former MGP sites. All heavy metals including lead, chromium, arsenic, cadmium, and mercury were found to be either below detection limits or at concentrations well below Class GA Standards.



All seven groundwater samples were analyzed for the presence of total cyanide. Total cyanide was detected in 5 of 7 groundwater samples, ranging from 6 ug/l in EGCMW-04 to a maximum concentration of 972 ug/l in EGCMW-06, located in the eastern portion of the electric substation yard in the vicinity of the former south garage and former Greasing Building, as well as the current NYPA transformer. This concentration was above the Class GA Standard for total cyanide of 200 ug/l. The second highest total cyanide concentration of 17 ug/l was detected in EGCMW-07, well below its Class GA Standard. Monitoring well EGCMW-07 is located in the southwest corner of the Site.

A second groundwater sample was collected on September 9, 2011 from EGCMW-06 to confirm and further investigate the total cyanide result. For comparison purposes, this sampling round included the monitoring well exhibiting the second highest total cyanide concentration (EGCMW-07) and an upgradient well (EGCMW-02). The three groundwater samples were analyzed for total cyanide and free cyanide. The results of the September 2011 sampling confirmed the presence of cyanide above the Class GA Standard in EGCMW-06 at a concentration of 1,590 ug/l. The free cyanide concentration in EGCMW-06 was detected at 46.4 ug/l. Note that there is no Class GA Standard for free cyanide. In addition, well EGCMW-02 was non-detect for total cyanide and well EGCMW-07 exhibited a cyanide concentration of 27 ug/l, similar to the results from the first round of sampling. Free cyanide was detected at 5.68 ug/l in EGCMW-02 and 5.94 ug/l in EGCMW-07.

PCBs

All PCB compounds were found to be non-detectable in all upgradient and downgradient monitoring wells.

4.4 Exposure Assessment

This subsection addresses the potential qualitative risks to human receptors from contaminants of potential concern (COPCs). A COPC is any chemical detected at concentrations above the NYSDEC cleanup guidelines in a medium which could produce adverse health effects under the right conditions of dose and exposure.

The mediums of exposure at the Site include surface soil, subsurface soil and groundwater and the established NYSDEC cleanup guidelines for the Site are the Industrial SCOs for soil and Class GA Groundwater Standards and Guidance Values for groundwater. Site analytical data, including contaminant concentrations above the Industrial SCOs and Class GA Groundwater Standards and Guidance Values, are summarized in Appendix F.

Exposure Pathways

As detailed in NYSDEC DER-10, dated May 2010, an exposure pathway describes the means by which a potential receptor may be exposed to site-specific COPCs. A person who could come into contact with a COPC at an exposure point is called a "receptor." The ways in which the COPC can enter the body of a receptor are called "routes of exposure." Ingestion (by mouth), dermal (contact with skin) and inhalation (breathing into the lungs) are the routes of exposure considered in this and other human health risk assessments. This assessment considers both current and potential future exposures.

An exposure pathway is completed only when all five of the below elements occur or are present:

- Contaminant source;
- Contaminant release and transport mechanisms;



- Point of exposure;
- Route of exposure; and
- Receptor population.

An exposure pathway may be eliminated from further evaluation when any one of the five above elements has not occurred and/or is not present in the past, present and/or future.

Surface Soil

The chemical analysis of the 13 surface soil samples did not identify any contaminants above the Industrial Use SCOs, with the exception of benzo(a)pyrene in one sample. The majority of the Site is either covered by asphalt, concrete, or crushed stone, which limits direct exposure to surface soil. Therefore, contaminants in surface soil are not a potential exposure pathway.

A hardened tar/sediment sample was collected from a depth of 0 to 1 feet below grade from a retired gas pipe observed at the surface on the eastern side of the former gas holder foundation. This sample exhibited a total PAH concentration of 4,292 mg/kg, with seven individual PAHs exhibiting concentrations above their respective Industrial Use SCOs. This sample was collected from the natural gas gate station, which is a secure, fenced area with limited access. The only potential receptor of this hardened contamination would be National Grid workers or their contactors who periodically enter the natural gas gate station to perform maintenance activities. This potential exposure pathway is significantly minimized through the use of standard health and safety protocols for National Grid workers and their contractors. This area can also be covered with asphalt to further minimize this potential exposure pathway.



Subsurface Soil

Benzo(a)pyrene was the only COPC found at concentrations above its Industrial Use SCO in subsurface soil at the Site. Furthermore, benzo(a)pyrene was only detected above its Industrial Use SCO in two out of 42 samples. The isolated areas containing this contaminant above the SCO are secured by fencing and are not accessible to the public. Therefore, the only potentially complete exposure pathway for benzo(a)pyrene in the subsurface soil medium via ingestion, dermal contact and inhalation is for Site workers who may perform excavation activities in these isolated areas. Excavation of subsurface soil documented to contain benzo(a)pyrene can be easily managed by the implementation of a Site Management Plan (SMP), as detailed in the Section 5.0. In addition, these areas are secured by fencing and locked security gates and can only be accessed by authorized Site workers, further mitigating the potential to complete this exposure pathway.

<u>Groundwater</u>

The completed groundwater sampling identified total cyanide at a concentration above its Class GA standard in only one of the seven on-site monitoring wells, located in the eastern portion of the electric substation yard. Monitoring wells further downgradient along the southern perimeter of the Site did not exhibit elevated concentrations of cyanide. Trace concentrations of chlorinated VOCs and BTEX compounds were also detected during the groundwater sampling, primarily in the upgradient monitoring wells. Chlorinated VOCs, including PCE, TCE and trichlorofluoromethane, are not contaminants associated with former MGP operations. Based on available information, there are no known private or public groundwater supply wells within the immediate vicinity of the Site. Depth to groundwater is at least 18 feet below grade and therefore direct contact with groundwater during possible future excavation activities is not expected. Therefore, a complete exposure pathway does not exist for the groundwater contaminants identified on-site.



Exposure Assessment Analysis

Based on the above site-specific exposure assessment, potentially complete exposure pathways exist for chemical constituents above the Industrial Use SCOs for surface soil and subsurface soil via ingestion, dermal contact and inhalation. However, this potential is limited by the following:

- Relatively low contaminant concentrations As detailed above, contaminant concentrations in Site surface and subsurface soil were not detected above their respective Industrial Use SCOs, with the exception of benzo(a)pyrene, detected primarily in the northern and central portions of the Site, which are covered by a maintained lawn or crushed stone. In addition, several PAHs were detected above their respective Industrial Use SCOs in the hardened tar/sediment sample collected from the retired gas pipe located in the holder foundation, which is located in a fenced and locked portion of the site. As detailed below, it is recommended to cover the retired gas pipe with asphalt.
- Site Security A chain-link fence surrounds the majority of the Site, including all natural gas and electric substation equipment. The electric substation yard and natural gas gate station are not accessible to the public and access is only possible through security gates, which require a company-issued access card and/or authorization to open. In addition, LIPA, National Grid and NYPA workers and contractors are not permanently stationed at the Site; and
- Site Covering The majority of the Site is covered by asphalt pavement and a maintained lawn in the northern portion of the Site (natural gas gate station), and crushed stone in the central and southern portions of the Site (electric substation yard).

Given these site conditions, the general public has very limited potential to come into contact with on-site contamination. Although the private access road is accessible to the public, the majority of the road is paved with asphalt, preventing exposure to Site soil. Surface soil without crushed stone or asphalt cover exists in the southeastern portion of the Site, associated with an equipment staging area. However, a surface soil sample collected during the Site Characterization (EGCSS-04) and a soil boring completed during a previous



investigation (EGCGM-01) did not indicate the presence of MGP-related contamination in these areas.

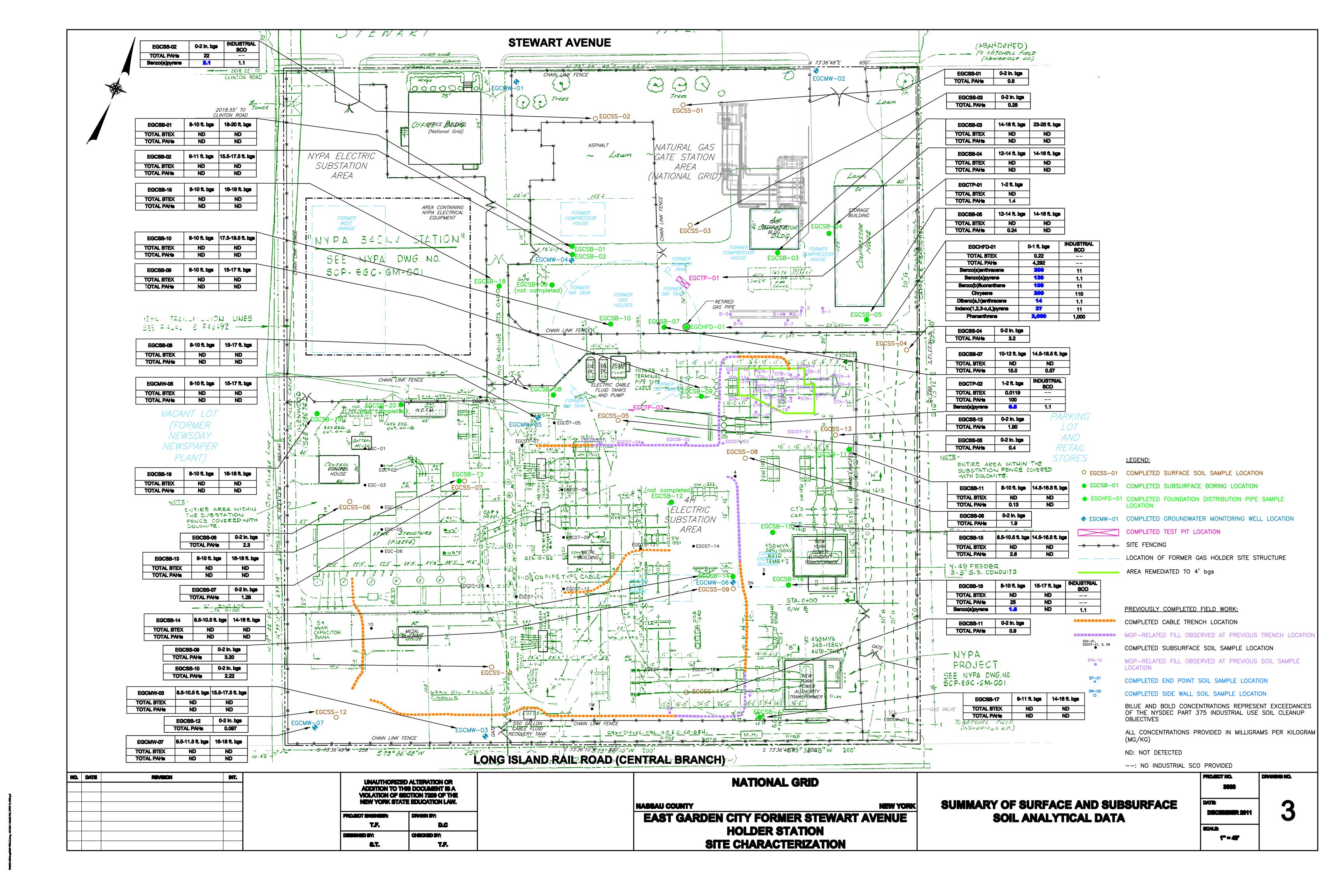
The most likely potential receptors of on-site contamination would be LIPA and National Grid workers or their contactors who periodically enter the Site to perform maintenance activities. However, the potential for exposure is significantly minimized by the site security, site covering and the relatively low contaminant concentrations outlined above. Furthermore, potential exposure to these contaminants is further managed through the implementation of existing health and safety protocols by LIPA and National Grid workers and contractors. Finally, future excavation activities can be managed by implementation of a SMP, as indicated in Section 5.0.

Future Use and Potential Exposure Routes

Currently, LIPA, National Grid and NYPA do not have any plans to change the use of the Site. As a result, the Site will remain as an active electric substation and natural gas gate station for the foreseeable future and these areas of the Site will remain secure with no public access. In addition, the main private access road that traverses the Site will remain paved with asphalt and, as recommended in Section 5.0, the retired gas pipe can be covered with asphalt. This and the SMP can help reduce the potential for on-site receptors to come into contact with contamination.

In addition, once in-place, the SMP can provide an additional framework to ensure that any engineering controls, such as the Site fencing and crushed stone cover, and institutional controls, such as any deed or groundwater use restrictions, remain in-place and effective and future Site activities such as excavations are properly managed.





5.0 CONCLUSIONS

This section of the report presents a summary of the Site Characterization findings and the conclusions regarding the nature and extent of observed contamination. The conclusions are based on the comparison of chemical constituents detected in soil and groundwater during the Site Characterization to the SCGs defined in Section 4.0, as well as visual observations of MGP-related materials. Note that the conclusions have been developed in the anticipation that the Site will continue to be utilized as a natural gas gate station and electric substation.

<u>Summary of Findings</u>

Surface Soil

In general, low concentrations of several PAHs, TAL metals, total cyanide and PCBs were detected in the collected surface soil samples. No analyte was detected above its respective Industrial Use SCOs, except for benzo(a)pyrene, which was detected at a concentration of 2.1 mg/kg (above its Industrial Use SCO of 1.1 mg/kg) in surface soil sample EGCSS-02, collected in the northern portion of the Site. Based on these findings, the presence of MGP-related materials has generally not impacted surface soil conditions.

In addition, a hardened tar and sediment sample collected from the retired gas pipe located on the eastern side of the former gas holder foundation exhibited a total PAH concentration of 4,292 mg/kg, with seven individual PAHs including benzo(a)pyrene, benzo(a)anthracene, benzo(b)flouranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene and phenanthrene exhibiting concentrations above their respective Industrial Use SCOs.

Subsurface Soil

Laboratory analysis of the subsurface soil samples collected during the Site Characterization only identified relatively low concentrations of several PAHs, TAL metals, total cyanide and PCBs. Benzo(a)pyrene was the only contaminant found to exceed its Industrial Use SCO of 1.1 mg/kg in two of the 42 samples, and ranged in concentration from 1.5 mg/kg to 6.5 mg/kg. The highest benzo(a)pyrene concentration was associated with black-stained soil collected from test pit EGCTP-02, located along the foundation of the former gas holder.

Based on the findings of previous investigations and the Site Characterization presented herein, the presence and extent of MGP-related material in the subsurface has been adequately characterized. As part of the Site Characterization, subsurface soil was characterized and 42 samples were selected for chemical analysis throughout the Site. Although reworked fill deposits were observed throughout the Site, MGP-related material was only visually identified in subsurface soil in limited areas of the Site, including the former gas holder foundation, the southeastern portion of the natural gas gate station and the eastern portions of the electric substation. Evidence of these MGP-related materials in subsurface soil included slight to moderate staining and odors, and/or the presence of coal clinker. The majority of the MGP-related materials was observed during previous investigations to a depth of approximately 4 to 6 feet below grade, although the Site Characterization identified limited areas of deeper impacts, generally at 8 to 10 feet below grade. However, all MGP-related material was observed in the reworked fill deposits.

Hardened tar was only observed in the subsurface at two isolated areas, including along the foundation of the former gas holder at a depth of 1.5 feet and 11.5 feet below grade and in the southeast portion of the natural gas gate station, at a depth of 16 feet below grade. The former gas holder foundation, which is visible at grade, and an associated



tar tank foundation, which was observed during completion of test pit EGCTP-01, were the only former structures identified during the Site Characterization. Based on these findings, it is assumed that the tar tanks were aboveground structures, and were removed along with the gas holder.

Groundwater

Trace concentrations of chlorinated VOCs and BTEX compounds were detected during the completed groundwater sampling, primarily in the upgradient monitoring wells. PCE, at a concentration of 6.1 ug/l, was detected above its Class GA Groundwater Standard of 5 ug/l in upgradient monitoring well EGCMW-01. Chlorinated VOCs, including PCE, TCE and trichlorofluoromethane, are not contaminants associated with former MGP operations. It is likely that these VOCs originated from upgradient sources identified in the vicinity of the Site, including the ORCA NPL site and Award Packaging, a State Hazardous Waste Site, as well as a service station with at least one open petroleum spill located less than 1/8 of a mile upgradient of the Site.

Total cyanide was detected above its Class GA Standard of 200 ug/l in only one of the seven on-site monitoring wells (EGCMW-06), located in the eastern portion of the electric substation yard. Concentrations of total cyanide in EGCMW-06 were detected at 972 ug/l and 1,590 ug/l, with a free cyanide concentration of 46.4 ug/l. However, monitoring wells located further downgradient along the southern perimeter of the Site did not exhibit elevated concentrations of cyanide.

Exposure Assessment

There are potentially complete exposure pathways via ingestion, dermal contact and inhalation for excavating in subsurface soil for on-site LIPA, National Grid and NYPA workers



or their contactors who periodically enter the Site to perform maintenance activities via ingestion, dermal contact and inhalation. However, the potential for exposure is significantly minimized by the Site security fencing, Site covering and the relatively low contaminant concentrations. In addition, the public does not have access to areas of the Site where contamination has been identified. While contaminant concentrations are relatively low, there is a potentially open exposure pathway for on-site workers for dermal contact or inhalation of dust during excavation activities in areas where Site contaminants were detected above the Industrial Use SCOs. However, this potentially open exposure pathway can be significantly minimized through the use of proper health and safety protocols during on-site work by LIPA, National Grid, NYPA workers and their contractors and by implementation of a Site Management Plan (SMP), as indicated below.

Although some solid tar within a retired gas pipe is visible at the surface, it is hardened and, therefore, immobile. In addition, the retired gas pipe is located within the natural gas gate station, which is a secure, fenced area with limited access. Since the public does not have access to this area, the only potential receptor to the hardened tar would be National Grid workers or their contactors who periodically enter the natural gas gate station to perform maintenance activities.

Recommendations

Based on the findings of this Site Characterization and previous investigations at the Site, additional Site Characterization should not be necessary. Considering the extensive network of above and below grade utilities present at the Site and the limited potential for on-site workers or the public to come into contact with site-related contaminants, remediation of soil containing MGP-related materials is not warranted at this time. In addition, the following recommendations are provided:



- Maintain limited access to the natural gas gate station and electric substation areas of the Site;
- Maintain the crushed stone, asphalt and maintained lawn cover at the Site in order to minimize the potential for contact with Site soil in these areas;
- In order to further reduce the potential for Site worker contact with the exposed hardened tar/sediment observed within the retired gas pipe, this material can be covered with asphalt and left in place. Note that the retired gas pipe is located within the natural gas gate station, which is a secure, fenced location and requires an access card and/or authorization to enter; and
- While remediation of subsurface soil is not warranted based on the results of the Site Characterization, a SMP can be developed for the Site to help manage Site activities and reduce the potential for Site worker contact with Site soil.



APPENDIX A

SANBORN MAPS AND PERTINENT HISTORICAL INFORMATION FROM EDR DOCUMENT



East Garden City Substation

600 Stewart Avenue Garden City, NY 11530

Inquiry Number: 2333687.3s

October 06, 2008

Certified Sanborn® Map Report



Certified Sanborn® Map Report

10/06/08

Site Name: Client Name:

East Garden City Substation 600 Stewart Avenue Garden City, NY 11530 Dvirka & Bartilucci Cons. Eng. 330 Crossways Park Drive Woodbury, NY 11797

EDR Inquiry # 2333687.3s Contact: Steve Tauss



The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Dvirka & Bartilucci Cons. Eng. were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: East Garden City Substation

Address: 600 Stewart Avenue **City, State, Zip:** Garden City, NY 11530

Cross Street:

P.O. # NA Project: NA

Certification # B611-4480-9526

Maps Identified - Number of maps indicated within "()"

1970 (1)

1963 (1)

1961 (1)

1950 (1)

1936 (1)

Total Maps: 5



Sanborn® Library search results Certification # B611-4480-9526

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✓ Library of Congress

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▼ EDR Private Collection

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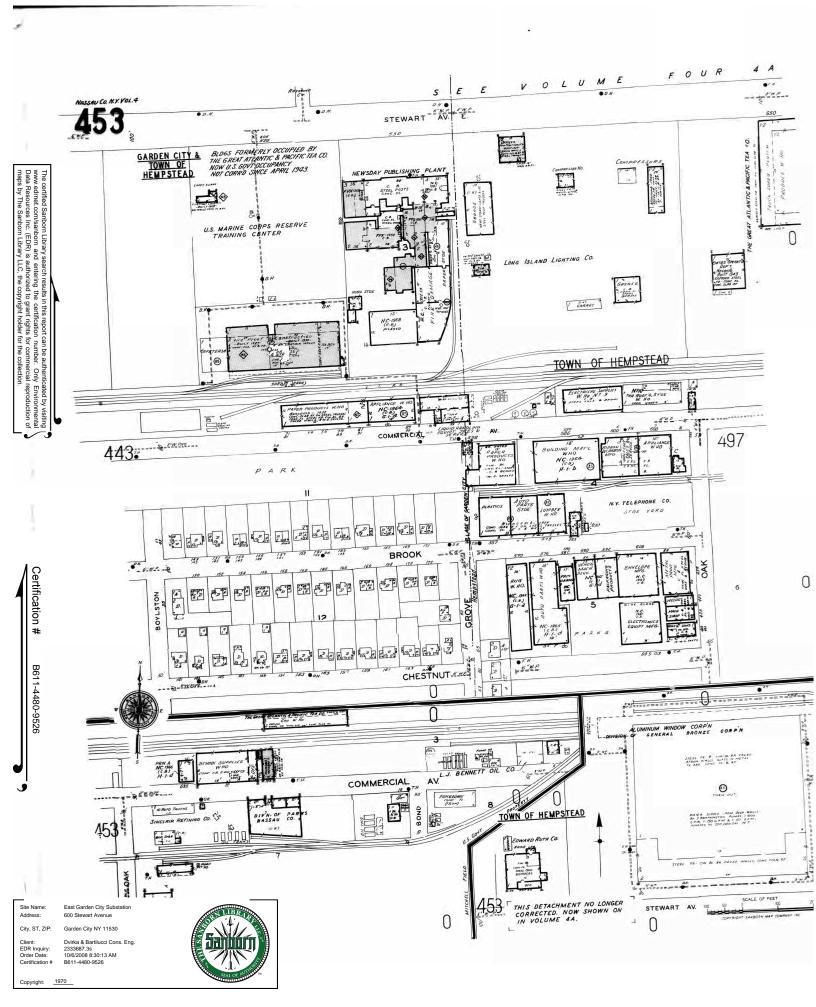
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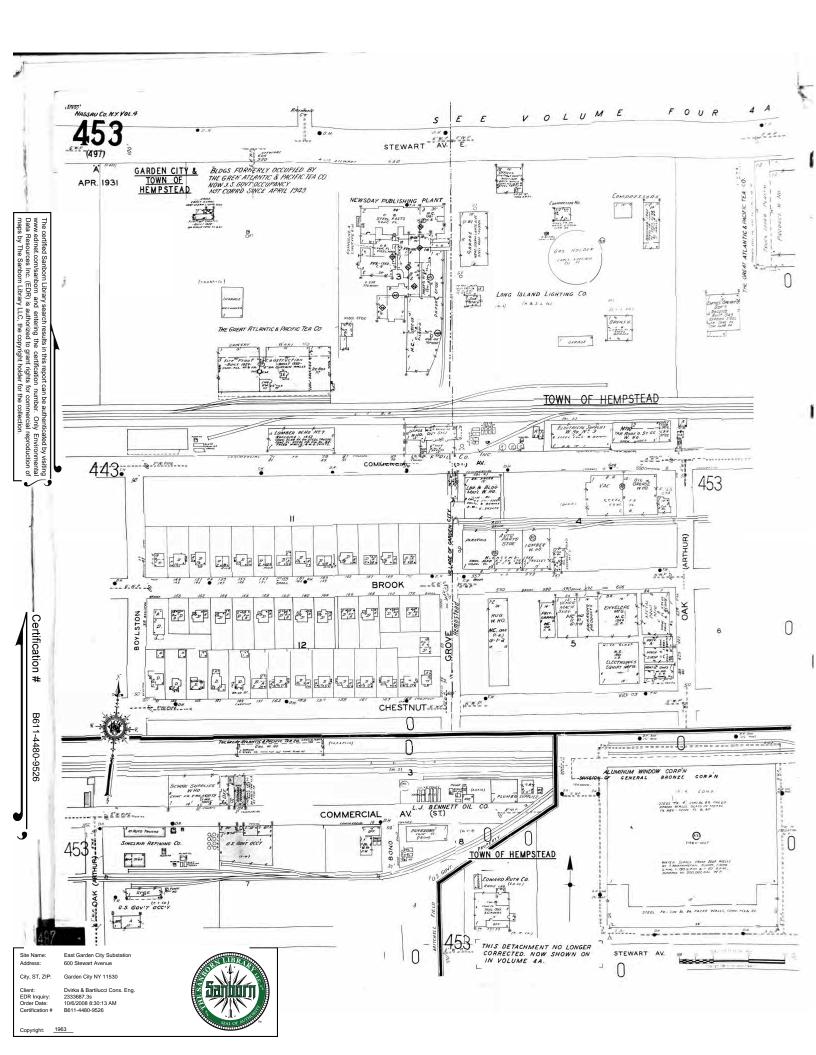
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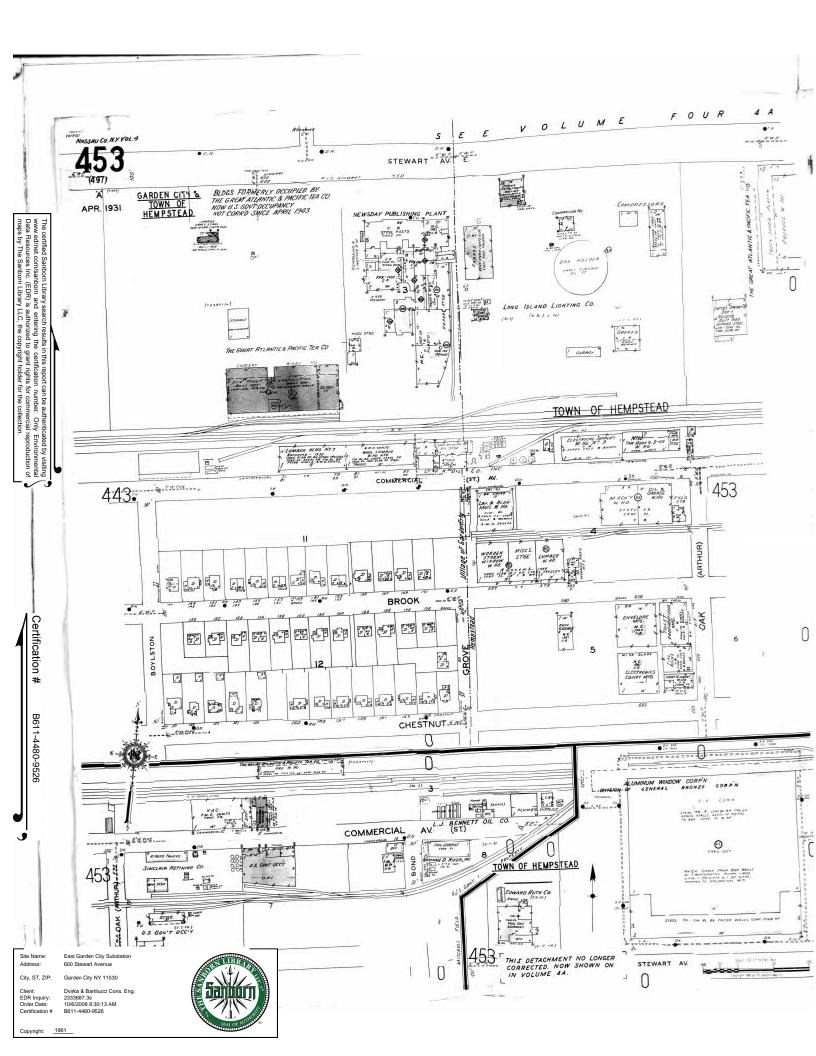
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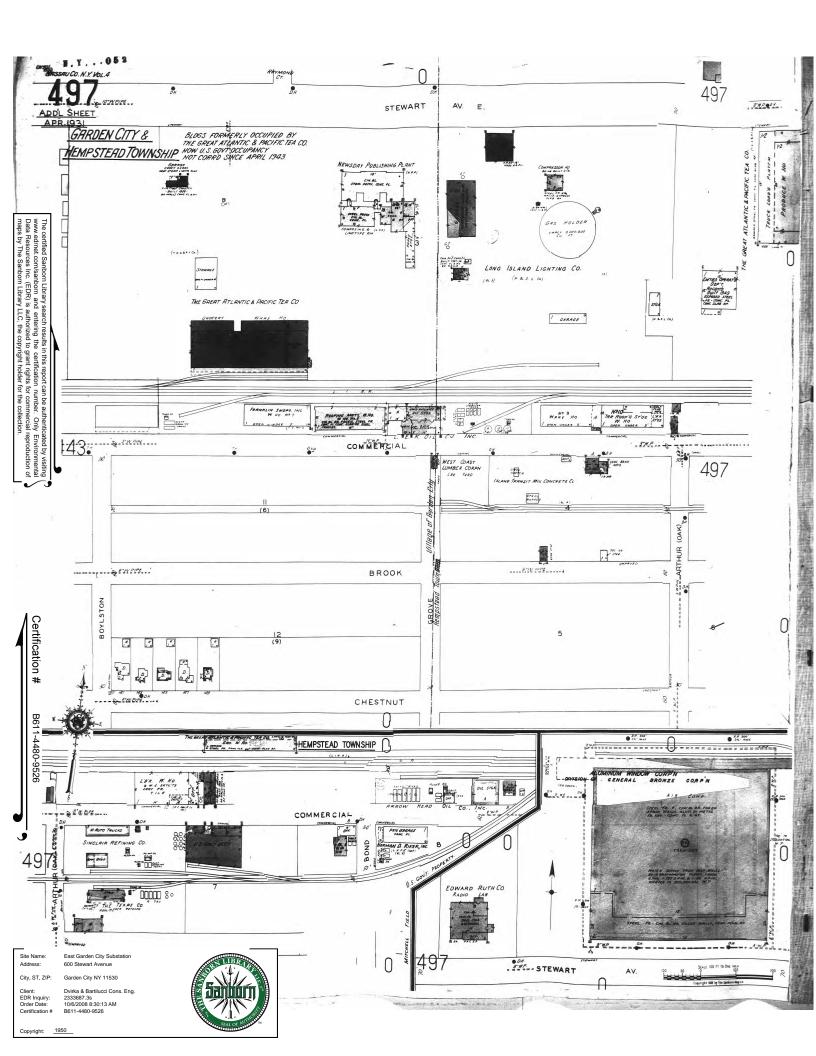
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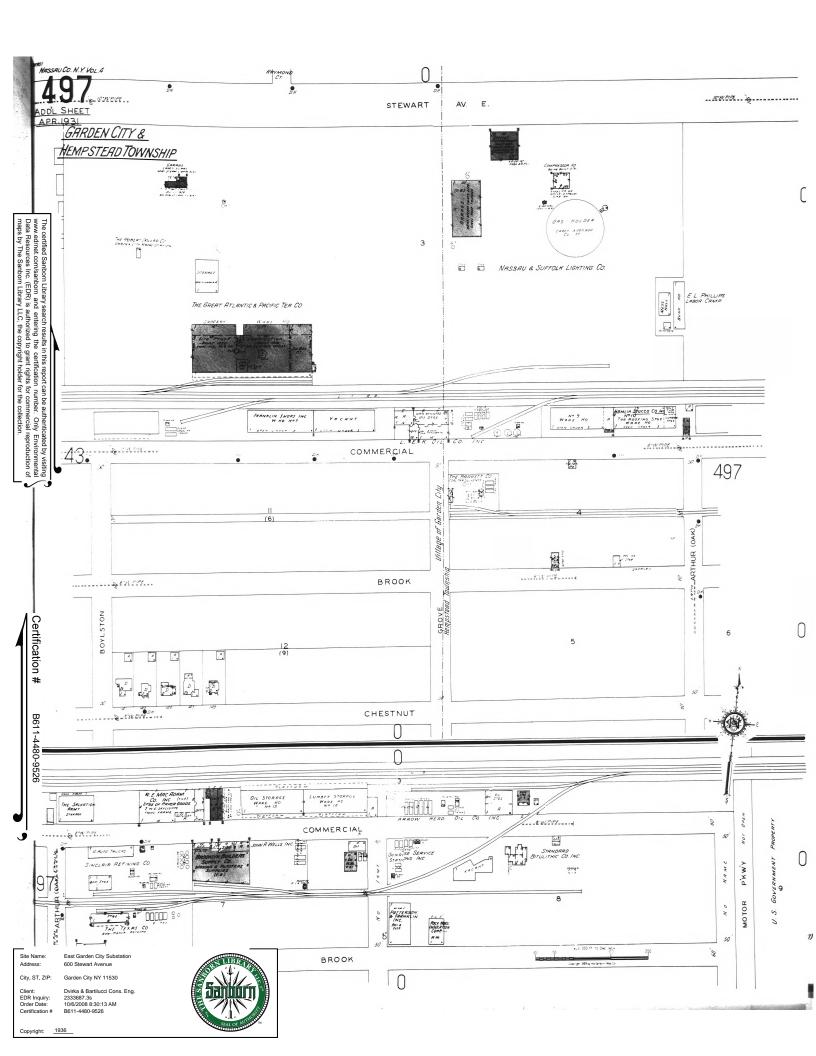
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East Garden City Substation

600 Stewart Avenue Garden City, NY 11530

Inquiry Number: 2333687.5

October 06, 2008

The EDR Aerial Photo Decade Package



EDR Aerial Photo Decade Package

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Date EDR Searched Historical Sources:

Aerial Photography October 06, 2008

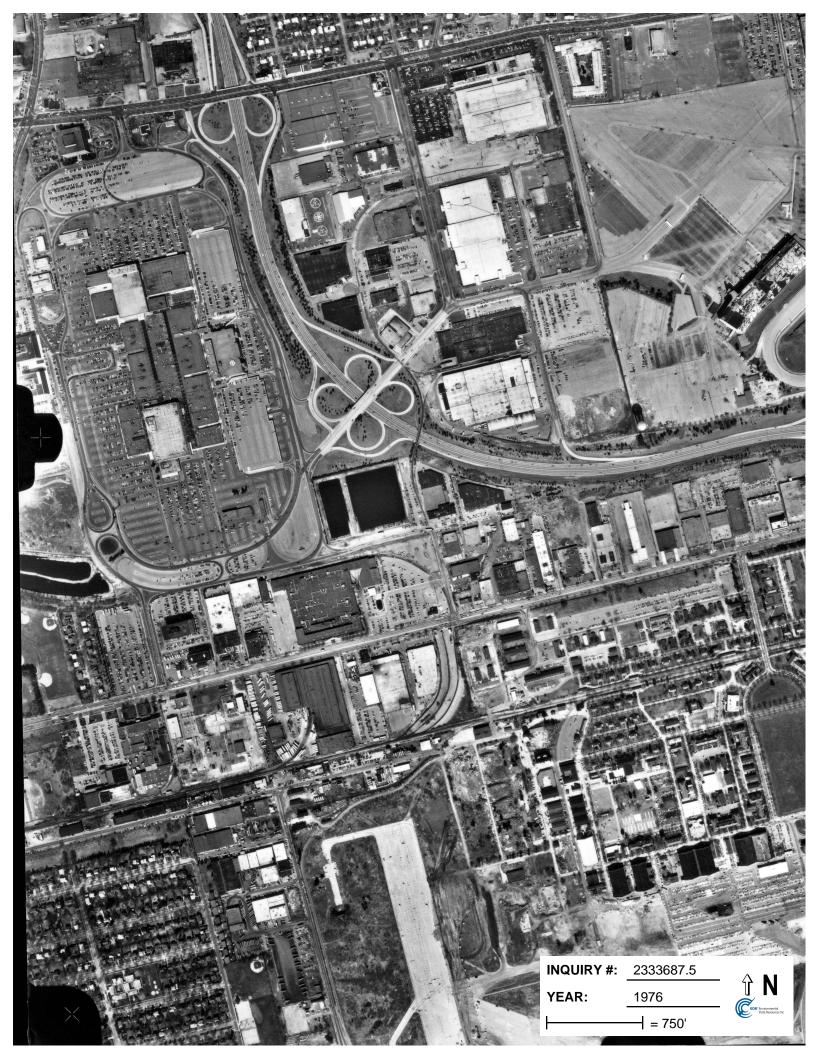
Target Property:

600 Stewart Avenue Garden City, NY 11530

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
1957	Aerial Photograph. Scale: 1"=750'	Panel #: 2440073-F5/Flight Date: March 24, 1957	EDR
1966	Aerial Photograph. Scale: 1"=500'	Panel #: 2440073-F5/Flight Date: March 08, 1966	EDR
1976	Aerial Photograph. Scale: 1"=750'	Panel #: 2440073-F5/Flight Date: March 29, 1976	EDR
1980	Aerial Photograph. Scale: 1"=750'	Panel #: 2440073-F5/Flight Date: April 06, 1980	EDR
1994	Aerial Photograph. Scale: 1"=750'	Panel #: 2440073-F5/Flight Date: April 04, 1994	EDR











APPENDIX B

PHOTOGRAPHIC DOCUMENTATION





Photo 1: Gas station located upgradient of the Site



Photo 2: Downwind air monitoring station and vacuum extraction piping



Photo 3: Exposed area of gas holder foundation in the vicinity of test pit EGCTP-01



Photo 4: Test pit EGCTP-01 excavation showing black stained soil



Photo 5: Vacuum excavation of soil boring in the northern portion of the Site



Photo 6: Bricks and concrete fragments in canceled soil boring location EGCSB-06



Photo 7:Geoprobe soil sampling at soil boring/monitoring well location EGCMW-07



Photo 8: Geoprobe soil core showing non-impacted soil



Photo 9: Solidified tar and sediment in the gas holder foundation suspected gas distribution pipe.



Photo 10: Installation of groundwater monitoring well EGCMW-05 utilizing a hollow stem auger rig



Photo 11: Completed groundwater monitoring well EGCMW-02

APPENDIX C

TEST PIT LOGS









Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Test Pit No.: EGCTP-01 **Sheet** <u>1</u> **of** <u>1</u>

By: Christopher Kiernan

Contractor: WRS
Operator: Leo Torres
Equipment: Vacuum Truck

Geologist: Paul Barusich Test Pit Method: Vacuum Date Started: 4/27/11 Date Completed: 4/27/11 Test Pit Completion Depth: 6' Ground Surface Elevation: ---Test Pit Dimensions: 15' x 5'

ſ		Mercury	Photo- ionization		Nat. Grid
	Depth	Vapor	Detector	Description of Materials	Color
	(ft.)	(mg/m³)	(ppm)	5000 Iption of materials	Index
	0' – 1'	0.0	0.0	0" – 3" Asphalt and rebar. 3" – 1' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; 40% gravel, fine to medium, subangular; dark brown, medium dense, moist, black staining at 1' bgs.	
	1' – 2'	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; 40% gravel, fine to medium, subangular; dark brown, medium dense, moist, black staining.	
	2' – 3'	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; 15% gravel, fine to coarse, subangular; 5% silt; brown, loose, moist.	
	3' – 4'	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; 35% gravel, fine to coarse, subangular; 5% silt; dark brown, loose, moist.	
	4' – 5'	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): 60% sand, fine to medium, subangular; 35% gravel, fine to medium, subangular; 5% silt; dark brown, loose, moist.	
		0.0	0.0	WELL GRADED GRAVELLY SAND (SW): 60% sand, fine to medium, subangular; 35% gravel, fine to medium, subangular; 5% silt; dark brown, loose, moist.	

NOTES:

Small diameter pipe observed at a depth of 2.5 feet running east-west. Suspected foundation of tar tank was identified.

Sample for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs was collected from 1' - 2' bgs.

After discussion with NYSDEC, test pit ended at a depth of 6 feet.



Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Test Pit No.: EGCTP-02

Sheet <u>1</u> of <u>1</u>

By: Christopher Kiernan

Contractor: WRS
Operator: Leo Torres
Equipment: Vacuum Truck

Geologist: Paul Barusich Test Pit Method: Vacuum Date Started: 5/10/11 Date Completed: 5/10/11 Test Pit Completion Depth: 6.5' Ground Surface Elevation: ---Test Pit Dimensions: 4' x 4'

Depth (ft.)	Mercury Vapor (mg/m³)	Photo- ionization Detector (ppm)	Description of Materials	Nat. Grid Color Index
0' - 1'		0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; 40% gravel, fine to medium, subangular; dark brown, medium dense, moist.	
1' – 2'	0.0	0.1	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; 40% gravel, fine to medium, subangular; dark brown, medium dense, moist, solid tar layer (3-4" thick) at 1.5 feet, tar-like odor.	
2' – 3'	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; 40% gravel, fine to medium, subangular; brown – dark brown, loose, moist.	
3' – 4'	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; 40% gravel, fine to medium, subangular; brown – dark brown, loose, moist.	
4' – 5'	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; 40% gravel, fine to medium, subangular; brown – dark brown, loose, moist.	
5' - 6'	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; 40% gravel, fine to coarse, subangular; brown, loose, moist.	
6' - 6.5	, 0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; 40% gravel, fine to coarse, subangular; brown, loose, moist.	

NOTES:

Refusal encountered at a depth of 6.5 feet at a concrete slab. Concrete wall on north edge of borehole, likely part of the gas holder foundation.

Sample for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs was collected from 1' – 2' bgs.

After discussion with NYSDEC, test pit ended at a depth of 6 feet.

APPENDIX D

BORING LOGS









Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 4/28/11

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a

Boring No.: EGCSB-01

Sheet <u>1</u> of <u>2</u>

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Date Star	ted: 4	4/28/11			Date Comp	oleted: 5/17/11	
		Soil Sa	mple		Photo-		Nat.
				Mercury	ionization		Gric
Depth			Rec.	Vapor	Detector	Sample Description	Colo
(ft.)	No.	Туре	(inches)	(mg/m ³)	(ppm)		Inde
0' – 1'	1	HA	12	0.0	0.0	0' – 0.25' Asphalt. 0.25' – 1' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~35% gravel, fine to medium, subangular; ~5% silt; brown, loose, moist.	
1' – 2'	2	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subangular; brown, medium dense, moist.	
2' – 3'	3	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~35% gravel, fine, subangular; ~5% silt; dark brown, medium dense, moist.	
3' – 4'	4	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine, subangular; ~5% silt; brown, loose, moist.	
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine, subangular; ~5% silt; brown, loose, moist.	
5' – 6'	6	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine, subangular; ~5% silt; brown, loose, moist.	
6' – 7'	7	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subangular; light brown – tan, loose, dry.	
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subangular; light brown – tan, loose, dry.	
8' – 10'	9	GP	24	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~5% brick fragments; tan – brown, loose, moist.	
10' – 15'	10	GP	48	0.0	0.0	10' – 13' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; tan – brown, loose, moist. 13' – 14' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% fine to medium, subangular; orange	
Sample T SS = Split HA = Han GP = Geo	Spoo	on ger	oler			NOTES: Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total CPCBs, and TPHs were collected from 8' – 10' bgs and 18' bgs.	



Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 4/28/11

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA Date Completed: 5/17/11

Boring No.: EGCSB-01

Sheet 2 of 2

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Date Started: 4/28/11					Date Completed: 5/1//11		
		Soil Sa	ample		Photo-		Nat
				Mercury	ionization		Grid
Depth			Rec.	Vapor	Detector	Sample Description	Color
(ft.)	No.	Туре	(inches)		(ppm)	·	Index
15' – 20'	11	GP	48	0.0	0.0	15' - 17' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to medium, subangular; ~20% gravel, medium to	
						coarse, subrounded; tan – orange, loose, moist.	
				0.0	0.0	17' - 19' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to medium, subangular; ~20% gravel, fine to medium,	
						subrounded; brown, loose, moist.	
20' – 25'	12	GP	60	0.0	4.2	20' – 21' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to medium, subangular; ~20% gravel, fine to medium,	
				0.0	0.0	subrounded; brown, loose, wet at 20' bgs.	
				0.0	0.0	21' – 25' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine to medium, subrounded;	
25' – 30'	13	GP	48	0.0	0.0	tan – orange, loose, wet. WELL GRADED SAND (SW): ~95% sand, fine to medium,	
25 - 30	13	GF	40	0.0	0.0	subangular; ~5% gravel, fine to medium, subangular; tan –	
						orange, loose, wet.	
30' – 35'	14	GP	36	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to	
00 00		<u> </u>		0.0	0.0	coarse, subangular; ~40% gravel, fine to medium, subrounded;	
						tan – orange, loose, wet.	
Sample T	vpes	 ::	•	•	1	NOTES:	•
SS = Split						Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total C	Cvanide
HA = Han						PCBs, and TPHs were collected from 8' – 10' bgs and 18'	
man		9 O	Lan			has	_5

bgs.

GP = Geoprobe Sampler



Project No.: 3008

Project Name: National Grid

East Garden City
Former Stewart Avenue Holder Station

Boring No.: EGCSB-02 Sheet <u>1</u> of <u>2</u>

By: Christopher Kiernan

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 4/28/11

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a **Date Completed:** 5/18/11

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 9' – 11' bgs and 15.5' –

17.5' bgs. Monitoring well EGCMW-04 was installed within the

		Soil Sa	mple	Photo-		Nat.	
			<u> </u>	Mercury	ry ionization		Grid
Depth			Rec.	Vapor	Detector	Sample Description	Colo
(ft.)	No.	Туре	(inches)	(mg/m ³)	(ppm)		Index
0' – 1'	1	НА	12	0.0	0.0	0' – 0.25' Asphalt. 0.25' – 1' WELL GRADED SAND WITH GRAVEL (SW): ~70% sand, fine to medium, subangular; ~25% gravel, fine to course,	
1' – 2'	2	HA	12	0.0	0.0	subangular; ~5% silt; dark brown, medium dense, moist. WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subangular; brown, medium dense, moist.	
2' – 3'	3	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subangular; brown, medium dense, moist.	
3' – 4'	4	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~35% gravel, fine, subangular; ~5% silt; dark brown, medium dense, moist.	
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine, subangular; ~5% silt; brown, medium dense, moist.	
5' – 6'	6	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine, subangular; light brown, loose, moist.	
6' – 7'	7	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to medium, subangular; light brown, loose, moist.	
7' – 8'	8	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to medium, subangular; light brown, loose, moist.	
8' – 10'	9	GP	24	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to coarse, subrounded; brown – orange, loose, moist.	
10' – 15'	10	GP	48	0.0	2.3	10' – 11' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; brown – gray, loose, moist.	
				0.0	0.0	11' – 13' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; brown – tan, loose, moist.	
				0.0	0.0	13' – 14' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subangular; brown – tan, loose, moist.	
Sample T	vpes					NOTES:	

borehole to 28' bgs.

SS = Split Spoon

HA = Hand Auger **GP** = Geoprobe Sampler



Driller: Mike Smith

Drill Rig: Geoprobe

Date Started: 4/28/11

Project No.: 3008 Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA Date Completed: 5/18/11

Boring No.: EGCSB-02

By: Christopher Kiernan

Sheet 2 of 2

Boring Completion Depth: 35'

Ground Surface Elevation: ---Boring Diameter: 2"

						Dieted: 5/18/11	1
	Soil Sample				Photo-		Nat
				Mercury			Grid
Depth			Rec.	Vapor	Detector	Sample Description	Color
(ft.)	No.	Type	(inches)	(mg/m ³)	(ppm)		Index
15' – 20'	11	GP	48	0.0	0.0	15' - 17' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine to medium, subrounded;	
						orange – tan, loose, moist.	
				0.0	0.0	17' - 19' POORLY GRADED SAND (SP): ~100% sand, fine to	
						medium, subangular; orange – tan, loose, wet at 17.5' bgs.	
20' – 25'	12	GP	60	0.0	0.0	20' –23' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to medium, subangular, ~20% gravel, fine,	
				0.0	0.0	subrounded; tan – orange, loose, wet.	
				0.0	0.0	23' – 24' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium,	
						subrounded; tan – orange, loose, wet.	
				0.0	0.0	24' – 25' WELL GRADED SAND (SW): ~95% sand, fine to	
				3.0	5.5	medium, subangular; ~5% gravel, fine to medium, subrounded;	
						tan – orange, loose, wet.	
25' - 30'	13	GP	48	0.0	0.0	25' - 27' POORLY GRADED SAND (SP): ~100% sand, fine to	
						medium, subangular; tan, loose, wet.	
				0.0	0.0	27' – 28' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
						fine to medium, subangular; ~40% gravel, fine to medium,	
				0.0	0.0	subrounded; tan, loose, wet.	
				0.0	0.0	28' – 29' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5: gravel, fine to medium, subangular; tan, loose, wet.	
30' – 35'	14	GP	60	0.0	0.0	30' – 34' WELL GRADED SAND (SW): ~95% sand, fine to	
	' '	<u> </u>		0.0	0.0	medium, subangular; ~5% gravel, fine to medium, subrounded;	
						tan, loose, wet.	
				0.0	0.0	34' - 35' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to coarse, subangular; ~20% gravel, fine to medium,	
						subrounded; tan, loose, wet.	
						NOTES	

Sample Types:

SS = Split Spoon

HA = Hand Auger **GP** = Geoprobe Sampler

VC = Vacuum

NOTES:

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 9' - 11' bgs and 15.5' -17.5' bgs. Monitoring well EGCMW-04 was installed within the borehole to 28' bgs.



Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 4/27/11

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a

Boring No.: EGCSB-03

Sheet <u>1</u> of <u>2</u>

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Date Star	ted:	4/27/11			Date Comp	npleted: 5/12/11		
		Soil Sa	ımple		Photo-		Nat	
Danth		I		Mercury			Grid	
Depth			Rec.	Vapor	Detector	Sample Description	Cold	
(ft.)	No.	Туре	(inches)	`	(ppm)	WELL ODADED ODAVELLY CAND (OV)	Inde	
0' – 1'	1	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand; fine to medium, subangular; ~35% gravel, fine to medium, subangular; ~5% silt and organic matter; soil overlaid by two inches of bluestone; brown, loose, moist.		
1' – 2'	2	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~70% sand, fine to medium, subangular; ~25% gravel, fine, subangular; ~5% silt; brown, loose, moist.		
2' – 3'	3	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~70% sand, fine to medium, subangular; ~25% gravel, fine, subangular; ~5% silt; brown, loose, moist.		
3' – 4'	4	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine, subangular; ~5% silt; dark brown, loose, moist.		
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine, subangular; ~5% silt; dark brown, loose, moist.		
5' – 6'	6	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine, subangular; ~5% silt; dark brown, loose, moist.		
6' – 7'	7	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; brown, loose, moist.		
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; brown, loose, moist.		
8' – 10'	9	GP	24	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; light brown, loose, moist.		
10' – 15'	10	GP	48	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; tan - orange, loose, moist.		
Sample T SS = Split HA = Han	Spoo	on				NOTES: Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total CPCBs, and TPHs were collected from 14' – 16' bgs and 23		

bgs.

GP = Geoprobe Sampler



Project No.: 3008
Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

By: Christopher Kiernan

Boring No.: EGCSB-03 Sheet 2 of 2

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 4/27/11

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA **Date Completed:** 5/12/11

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

		Soil Sa	mple	Mercury	Photo- ionization		Nat Grid
Depth (ft.)	No.	Туре	Rec. (inches)	Vapor (mg/m ³)	Detector (ppm)	Sample Description	Color
15' – 20'	11	GP	36	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subangular; tan, loose, wet at 16' bgs.	
20' – 25'	12	GP	48	0.0	4.2	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subangular; tan – orange, loose, wet, slight hydrocarbon-like odor.	
25' – 30'	13	GP	60	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to coarse, subrounded; tan, loose, wet.	
30' – 35'	14	GP	48	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; tan – brown, loose, wet.	

Sample Types:

SS = Split Spoon **HA** = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

NOTES:

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 14' – 16' bgs and 23' – 25' bgs.



Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 4/26/11

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a
Date Completed: 5/12/11

Boring No.: EGCSB-04

Sheet <u>1</u> of <u>2</u>

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Date Star						pleted: 5/12/11	
				Mercury ionization			Nat Grid
Depth	NI.	T	Rec.	Vapor	Detector	Sample Description	Cold
(ft.)	No.		(inches)	(mg/m³)	(ppm)	WELL GRADED SAND (SW): ~75% sand, fine to medium,	mae
0' – 1'	1	НА	12	0.0	0.0	subangular; ~20% bluestone; ~5% silt; brown, loose, moist.	
1' – 2'	2	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% silt; brown, loose, moist.	
2' – 3'	3	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~75% sand, fine to medium, subangular; ~20% gravel, fine, subangular; ~5% silt; brown, loose, moist.	
3' – 4'	4	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine, rounded; ~5% silt; brown, loose, moist.	
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine, rounded; ~5% silt; brown, loose, moist.	
5' - 6'	6	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine, rounded; ~5% silt; brown, loose, moist.	
6' – 7'	7	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine, subangular; light brown – brown, loose, moist.	
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine, subangular; light brown – brown, loose, moist.	
8' – 10'	9	GP	24	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; light brown – orange, loose, moist.	
10' – 15'	10	GP	48	0.0	3.3	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; tan – orange, loose, moist.	
15' – 20'	11	GP	48	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, medium to coarse, subrounded; tan with bands of tan – orange, loose, wet at 16' bgs.	
Sample T SS = Split HA = Har	t Spo	on				NOTES: Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total CPCBs, and TPHs were collected from 12' – 14' bgs and 14'	

bgs.

GP = Geoprobe Sampler



Project Name: National Grid

East Garden City

Project No.: 3008

Former Stewart Avenue Holder Station

Boring No.: EGCSB-04

By: Christopher Kiernan

Sheet 2 of 2

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith Drill Rig: Geoprobe Date Started: 4/26/11 Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA Date Completed: 5/12/11

Boring Completion Depth: 35' Ground Surface Elevation: ---

Boring Diameter: 2"

	;	Soil Sa	mple		Photo-		Nat
_		ı		Mercury	ionization		Grid
Depth		_	Rec.	Vapor	Detector	Sample Description	Color
(ft.)	No.	Туре	(inches)	(mg/m³)	(ppm)		Index
20' – 25'	12	GP	48	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium,	
						subrounded; tan – orange, loose, wet.	
25' – 30'	13	GP	48	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine	
						to medium, subangular; ~20% gravel, coarse, subrounded; tan, loose, wet.	
						100se, wet.	
30' – 35'	14	GP	60	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to	
						medium, subangular; ~40% gravel, fine to coarse, subrounded;	
						tan, loose, wet.	
Camarda T						NOTES.	

Sample Types:

SS = Split Spoon **HA** = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 12' – 14' bgs and 14' – 16' bgs.



Drill Rig: Geoprobe

Date Started: 4/26/11

Drilling Contractor: Fenley Nicol/WRS

East Garden City

Former Stewart Avenue Holder Station

By: Christopher Kiernan

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide,

PCBs, and TPHs were collected from 12' - 14' bgs and 14' - 16'

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a Date Completed: 5/13/11

Project Name: National Grid

Project No.: 3008

Boring Completion Depth: 35' Ground Surface Elevation: ---

Boring Diameter: 2"

Boring No.: EGCSB-05

Sheet <u>1</u> of <u>2</u>

	,	Soil Sa	ımple		Photo-	·	Nat.
Depth			Rec.	Mercury Vapor	ionization Detector	Sample Description	Grid Colo
(ft.)	No.	Type		(mg/m ³)	(ppm)		Inde
0' – 1'	1	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~15% gravel, fine, subangular; ~5% silt; brown, loose, moist.	
1' – 2'	2	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine, subangular; ~5% silt; brown – light brown, loose, moist.	
2' – 3'	3	HA	12	0.0	0.0	WELL GRADED SILTY SAND WITH GRAVEL (SW): ~60% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~20% silt; dark brown, loose, moist.	
3' – 4'	4	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~35% gravel, fine, subangular; ~5% silt; light brown – orange, loose, moist.	
4' – 5'	5	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~35% gravel, fine, subangular; ~5% silt; light brown – orange, loose, moist.	
5' – 6'	6	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, medium to coarse, subangular; orange – light brown, loose, moist.	
6' – 7'	7	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subangular; orange – light brown, loose, moist.	
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subangular; orange – light brown, loose, moist.	
8' – 10'	9	GP	24	0.0	0.0	8' – 9' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~35% gravel, medium to coarse, subangular; ~5% gravel, fine, subangular; brown, loose, moist.	
				0.0	0.0	9' – 10' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subangular; light brown – orange, loose, moist.	
10' – 15'	10	GP	60	0.0	0.0	10' – 13' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subangular; light brown – orange, loose, moist.	
				0.0	0.0	13' – 15' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, medium to coarse, subrounded; tan – brown, loose, moist, slight hydrocarbon-like odor.	
Sample T	ypes	:	<u> </u>	<u> </u>	<u> </u>	NOTES:	

bgs.

SS = Split Spoon

HA = Hand Auger **GP** = Geoprobe Sampler



East Garden City

Former Stewart Avenue Holder Station

By: Christopher Kiernan

Boring No.: EGCSB-05 Sheet 2 of 2

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith **Drill Rig:** Geoprobe **Date Started:** 4/26/11

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA **Date Completed:** 5/13/11

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

PCBs, and TPHs were collected from 12' – 14' bgs and 14' – 16'

		Soil Sa	ımple	Mercury	Photo- ionization		Nat Grid
Depth (ft.)	No.	Туре	Rec. (inches)	Vapor (mg/m ³)	Detector (ppm)	Sample Description	Colo
15' – 20'	11	GP	60	0.0	10.0	15' – 16' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; 1" thick band of solid tar/clinker at 16' bgs; gray – tan, loose, wet at 16' bgs, coal-tar odor at 1" thick band. 16' – 20' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; tan, loose, wet.	
20' – 25'	12	GP	60	0.0	0.0	20' – 24' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; tan, loose, wet. 24' – 25' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; tan – brown, loose, wet.	
25' – 30'	13	GP	60	0.0	0.0	25' – 26' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; tan – brown, loose, wet. 26' – 30' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subrounded; tan, loose, wet.	
30' – 35'	14	GP	60	0.0	0.0	30' – 34' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; tan, orange bands at 31' bgs, loose, wet. 34' – 35' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; brown – tan, loose, wet.	
Sample T SS = Split						NOTES: Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total C	 Cyanid

bgs.

HA = Hand Auger **GP** = Geoprobe Sampler



East Garden City

Former Stewart Avenue Holder Station

Boring No.: EGCSB-07 Sheet <u>1</u> of <u>2</u>

By: Christopher Kiernan

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 4/27/11

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a **Date Completed:** 5/13/11

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide,

PCBs, and TPHs were collected from 10' - 12' bgs and 14.5' -

		Soil Sa	mple	Mercury	Photo- ionization		Nat. Grid
Depth	No	Tyma	Rec.	Vapor (mg/m³)	Detector	Sample Description	Colo
(ft.) 0' – 1'	No.		(inches)		(ppm)	WELL CDARED CDAVELLY CAND (CM), COO/ good fine to	mue
0 – 1	1	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subangular; brown, medium dense, moist.	
1' – 2'	2	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~35% gravel, fine to coarse, subangular; ~5% silt; brown – light brown, medium dense, moist.	
2' – 3'	3	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~5% silt; brown – dark brown, medium dense, moist.	
3' – 4'	4	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~5% silt; brown – dark brown, medium dense, moist.	
4' – 5'	5	НА	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; brown – orange, loose, moist.	
5' – 6'	6	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; brown – orange, loose, moist.	
6' – 7'	7	НА	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subangular; brown – orange, loose, moist.	
7' – 8'	8	НА	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subangular; brown – orange, loose, moist.	
8' – 10'	9	GP	24	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~15% gravel, fine to medium, subangular: ~5% gravel, coarse, subrounded; brown – orange, loose, moist.	
10' – 15'	10	GP	48	0.0	11.5	10' – 11.5' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subangular; 0.5" layer of solid tar at 11.5' bgs; dark brown, loose, moist, slight coal tar-like odor at 11.5' bgs.	
				0.0	0.0	11.5' – 14' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; tan – orange, loose, moist.	
Sample T	ypes	 				NOTES:	

16.5' bgs.

SS = Split Spoon **HA** = Hand Auger

VC = Vacuum

GP = Geoprobe Sampler



East Garden City

Former Stewart Avenue Holder Station

By: Christopher Kiernan

Boring No.: EGCSB-07 Sheet 2 of 2

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith

Drill Rig: Geoprobe

Date Started: 4/27/11

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA Date Completed: 5/13/11

Boring Completion Depth: 35' Ground Surface Elevation: ---

Boring Diameter: 2"

		Soil Sa	mple		Photo-	·	Nat
Depth		1	Rec.	Mercury Vapor	ionization Detector	Sample Description	Grid Color
(ft.)	No.	Туре	(inches)	(mg/m ³)	(ppm)	Gampie Besonption	Index
15' – 20'	11	GP	60	0.0	0.0	15' - 17' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine to medium, subrounded; tan – orange, loose, wet at 16.5' bgs.	
				0.0	0.0	17' – 18' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
						fine to medium, subangular; ~40% gravel, medium to coarse,	
				0.0	0.0	subrounded; dark brown, loose, wet. 18' – 20 WELL GRADED SAND WITH GRAVEL (SW): ~80%	
				0.0	0.0	sand, fine to medium, subangular; ~20% gravel, medium to	
						coarse, subrounded; brown – orange, loose, wet.	
20' – 25'	12	GP	36	0.0	0.0	20' – 22' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
						fine to coarse, subangular; ~40% gravel, fine to medium, subangular; tan – orange, loose, wet.	
				0.0	0.0	22' - 23' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine, subangular; tan – brown,	
25' – 30'	13	GP	60	0.0	0.0	loose, wet. 25' – 27' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine, subangular; tan – brown,	
				0.0	0.0	loose, wet. 27' – 30' WELL GRADED SAND (SW): ~95% sand, fine to	
				0.0	0.0	medium, subangular; ~5% gravel, fine to medium, subrounded;	
						tan – brown, loose, wet.	
30' – 35'	14	GP	60	0.0	0.0	30' - 31' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine, subrounded; tan – brown, loose, wet.	
				0.0	0.0	31' – 33' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
						fine to medium, subangular; ~40% gravel, medium to coarse,	
				0.0	0.0	subrounded; tan – gray, loose, wet. 33' – 35' POORLY GRADED SAND (SP): ~100% sand, fine to	
				0.0	0.0	medium, subangular; tan – gray, loose, wet.	
Sample T	VDOC					NOTES:	_

Sample Types:

SS = Split Spoon **HA** = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 10' - 12' bgs and 14.5' -16.5' bgs.



Project Name: National Grid

East Garden City

Project No.: 3008

Former Stewart Avenue Holder Station

By: Christopher Kiernan

Boring No.: EGCSB-08

Sheet <u>1</u> of <u>2</u>

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith Drill Rig: Geoprobe Date Started: 5/11/11 Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a Date Completed: 5/20/11

Boring Completion Depth: 35' Ground Surface Elevation: ---

Boring Diameter: 2"

		Soil Sa	mple		Photo-	·	Nat.
Dandla		1	Dan	Mercury	ionization	Commis Decemention	Grid
Depth	No.	Typo	Rec. (inches)	Vapor (mg/m³)	Detector	Sample Description	Color Index
(ft.) 0' – 1'	1	Type HA	12	0.0	(ppm) 0.0	0" – 3" Bluestone	IIIuex
0 – 1	'	ПА	12	0.0	0.0	3" – 1' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to medium, subangular, ~20% gravel, fine to medium,	
						subangular; brown, medium dense, dry.	
1' – 2'	2	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium,	
						subangular; brown, medium dense, dry.	
2' - 3'	3	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine	
						to medium, subangular; ~20% gravel, fine to medium,	
						subangular; ~5% silt, brown, medium dense, moist.	
3' – 4'	4	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium,	
						subangular; ~5% gravel, fine to medium, subangular; ~5% silt; brown, loose, moist.	
4' – 5'	5	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium,	
						subangular; ~5% gravel, fine to medium, subangular; light	
<i>F</i> ; <i>C</i> ;		114	40	0.0	0.0	brown – orange, loose, moist.	_
5' - 6'	6	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to medium, subangular;	
						light brown – orange, loose, moist.	
6' - 7'	7	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to	
						coarse, subangular; ~40% gravel, fine to medium, subangular;	
7' – 8'	8	HA	12	0.0	0.0	light brown – orange, loose, moist. WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to	
				0.0	0.0	medium, subangular; ~40% gravel, fine to coarse, subangular;	
						light brown – orange, loose, moist.	
8' – 10'	9	GP	24	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to coarse, subangular; ~5% gravel, fine, subangular; ~5% brick fragments;	
						brown, loose, moist.	
10' – 15'	10	GP	48	0.0	0.0	10' - 12' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to medium, subangular, ~20% gravel, fine,	
				0.0	0.0	subrounded; orange – tan, loose, moist. 12' – 14' WELL GRADED SAND (SW): ~95% sand, fine to	
				0.0	0.0	medium, subangular; ~5% gravel, fine to medium, subrounded;	
						orange – tan, loose, moist.	
		•	•	•		1	

Sample Types:

SS = Split Spoon HA = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 8' – 10' bgs and 15' – 17' bgs.



Driller: Mike Smith Drill Rig: Geoprobe Date Started: 5/11/11 Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA Date Completed: 5/20/11

Boring No.: EGCSB-08

Sheet 2 of 2

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation: ---**

Boring Diameter: 2"

Date Star	Coil Comple				Date Completed. 3/20/11				
	;	Soil Sa	mple		Photo-		Nat		
				Mercury	ionization		Grid		
Depth			Rec.	Vapor	Detector	Sample Description	Color		
(ft.)	No.	Туре	(inches)	(mg/m³)	(ppm)	···	Index		
15' – 20'	11	GP	48	0.0	0.0	15' - 16' WELL GRADED GRAVELLY SAND (SW): ~60% sand,			
10 20	• •	•		0.0	0.0	fine to medium, subangular; ~40% gravel, fine to medium,			
						subrounded; orange – tan, loose, moist.			
				0.0	0.0	16' – 17' WELL GRADED SAND (SW): ~95% sand, fine to			
						medium, subangular; ~5% gravel, fine to medium, subrounded;			
						orange – light brown, loose, wet at 17' bgs.			
				0.0	0.0	17' – 19' WELL GRADED SAND (SW): ~95% sand, fine to			
						medium, subangular; ~5% gravel, fine to medium, subrounded;			
						tan – orange, loose, wet.			
20' – 25'	12	GP	48	0.0	0.0	20' - 21' WELL GRADED GRAVELLY SAND (SW): ~60% sand,			
						fine to coarse, subangular; ~40% gravel, fine to medium,			
						subrounded; tan, loose, wet.			
				0.0	0.0	21' - 23' WELL GRADED SAND WITH GRAVEL (SW): ~80%			
						sand, fine to coarse, subangular; ~20% gravel, fine to medium,			
						subrounded; tan, loose, wet.			
				0.0	0.0	23' – 24' WELL GRADED SAND (SW): ~95% sand, fine to			
						coarse, subangular; ~5% gravel, fine to medium, subangular;			
						tan, loose, wet.			
25' - 30'	13	GP	60	0.0	0.0	25' - 28' POORLY GRADED SAND (SP): ~100% sand, fine to			
						medium, subangular; tan, loose, wet.			
				0.0	0.0	28' - 29' WELL GRADED GRAVELLY SAND (SW): ~60% sand,			
						fine to medium, subangular; ~40% gravel, fine to medium,			
				0.0	0.0	subrounded; tan, loose, wet.			
				0.0	0.0	29' – 30' POORLY GRADED SAND (SP): ~100% sand, fine to			
00' 05'	4.4	0.0	00	0.0	0.0	medium, subangular; tan, loose, wet.			
30' – 35'	14	GP	60	0.0	0.0	30' – 31' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.			
				0.0	0.0	31' – 32' WELL GRADED GRAVELLY SAND (SW): ~60% sand,			
				0.0	0.0	fine to medium, subangular; ~40% gravel, fine to coarse,			
						subrounded; tan, loose, wet.			
				0.0	0.0	32' – 33' WELL GRADED SAND WITH GRAVEL (SW): ~80%			
				0.0	0.0	sand, fine to medium, subangular; ~20% gravel, fine to medium,			
						subrounded; tan, loose, wet.			
ĺ				0.0	0.0	33' – 35' WELL GRADED SAND (SW): ~95% sand, fine to			
						medium, subangular; ~5% gravel, fine to medium, subrounded;			
						tan, loose, wet.			

Sample Types:

SS = Split Spoon

HA = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

NOTES:

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 8' – 10' bgs and 15' – 17' bgs.



Drill Rig: Geoprobe

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a Date Completed: 5/20/11

Boring No.: EGCSB-09

Sheet <u>1</u> of <u>2</u>

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation: ---**

Boring Diameter: 2"

Date Star						Date Completed: 5/20/11				
Date Star	_				Photo-	Jietea: 5/20/11	Not			
		Soil Sa	impie	Mercury			Nat Grid			
Depth			Rec.	Vapor	Detector	Sample Description	Cold			
(ft.)	No.	Type	(inches)		(ppm)	Sample Description	Inde			
0' – 1'	1	HA	12	0.0	0.0	0" – 3" Bluestone	mac			
0 – 1	'	ПА	12	0.0	0.0	3" – 1' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~30% gravel, fine to medium, subangular; ~5% silt; ~5% bluestone; brown, medium dense, moist.				
1' – 2'	2	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine to medium, subangular; ~20% gravel, fine to coarse, subangular; ~5% silt; brown, loose, moist.				
2' – 3'	3	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; brown, loose, moist.				
3' – 4'	4	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium; light brown, loose, moist.				
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; brown – tan, loose, moist.				
5' – 6'	6	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; brown – tan, loose, moist.				
6' – 7'	7	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to coarse, subrounded; light brown, loose, moist.				
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to coarse, subrounded; light brown, loose, moist.				
8' – 10'	9	GP	24	0.0	0.0	8' – 9' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; brown, loose, moist.				
				0.0	0.0	9' – 10' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; orange – tan, loose, moist.				
10' – 15'	10	GP	48	0.0	0.0	10' – 11' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; orange – brown, loose, moist.				
				0.0	0.0	11' – 14' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; tan – orange, loose, moist.				
Sample 7 SS = Spli						NOTES: Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total C	 Cyanid			
HA = Har GP = Geo VC = Vac	nd Aug oprobe	ger	oler			PCBs, and TPHs were collected from 8' – 10' bgs and 15' bgs.				



Project Name: National Grid

Former Stewart Avenue Holder Station

Sheet 2 of 2 By: Christopher Kiernan

Boring No.: EGCSB-09

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith Drill Rig: Geoprobe Date Started: 5/10/11 Geologist: Paul Barusich

East Garden City

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA Date Completed: 5/20/11

Boring Completion Depth: 35' Ground Surface Elevation: ---

Boring Diameter: 2"

PCBs, and TPHs were collected from 8' - 10' bgs and 15' - 17'

		Soil Sample		Moroury	Photo- ionization		Nat Grid
Depth			Rec.	Mercury Vapor	Detector	Sample Description	Color
(ft.)	No.	Туре	(inches)	(mg/m³)		Sample Description	Index
15' – 20'	11	GP	60	0.0	(ppm) 0.0	15' – 17' WELL GRADED SAND (SW): ~95% sand, fine to	indez
15 – 20	''	GF	00	0.0	0.0	medium, subangular; ~5% gravel, fine to medium, subrounded;	
						tan – brown, loose, moist, wet at 17' bgs.	
				0.0	0.0	17' –19' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine to medium, subrounded;	
						tan, loose, wet.	
				0.0	0.0	19' – 20' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to medium subangular; ~20% gravel, fine to medium,	
20' – 25'	12	GP	60	0.0	0.0	subrounded; tan, loose, wet. 20' –22' POORLY GRADED SAND (SP): ~100% sand, fine to	-
20 – 25	12	Gi	00	0.0	0.0	medium, subangular; tan, loose, wet.	
				0.0	0.0	22' – 23' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to medium, subangular; ~20% gravel, fine,	
						subrounded; tan – orange, loose, wet.	
				0.0	0.0	23' – 25' POORLY GRADED SAND (SP): ~100% sand, fine to	
051 001	4.0	0.5	40			medium, subangular; tan, loose, wet.	
25' – 30'	13	GP	48	0.0	0.0	25' – 26' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
						fine to coarse, subrounded; ~40% gravel, fine to medium, subrounded; tan, loose, wet.	
				0.0	0.0	26' – 28' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
				0.0	0.0	sand, fine to coarse, subangular; ~20% gravel, fine to coarse,	
						subrounded; tan, loose, wet.	
				0.0	0.0	28' – 29' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine, subrounded; tan, loose,	
001 051	4.4	0.0	40	0.0	0.0	wet.	
30' – 35'	14	GP	48	0.0	0.0	30' – 31' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; tan, loose,	
						wet.	
				0.0	0.0	31' – 33' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to coarse, subrounded; ~20% gravel, fine,	
						subrounded; tan, loose, wet.	
				0.0	0.0	33' - 34' POORLY GRADED SAND (SP): ~100% sand, fine to	
						medium, subangular; tan, loose, wet.	
0	<u> </u>	<u> </u>				NOTES	
Sample T						NOTES:	S
SS = Split	Spo	on				Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total C	,yanıde

bgs.

VC = Vacuum

HA = Hand Auger **GP** = Geoprobe Sampler



Project Name: National Grid

East Garden City

Project No.: 3008

Former Stewart Avenue Holder Station

Sheet 1 of 2

Boring No.: EGCSB-10

By: Christopher Kiernan

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 4/28/11

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a **Date Completed:** 5/17/11

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

		Soil Sa	mple	Mercury	Photo- ionization		Nat. Grid
Depth (ft.)	No.	Туре	Rec. (inches)	Vapor (mg/m³)	Detector (ppm)	Sample Description	Color
0' - 2'	1	HA	24	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0" – 7" Asphalt. 7" – 16" WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~15% gravel, fine to medium, subangular; ~5% silt; tan, medium dense, moist. 16" – 21" Asphalt. 21" – 24" Concrete.	
2' – 3'	2	НА	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~5% silt; brown, medium dense, moist.	
3' – 4'	3	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~5% silt; brown, medium dense, moist.	
4' – 5'	4	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~35% gravel, fine, subangular; ~5% silt; brown, loose, moist.	
5' - 6'	5	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~35% gravel, fine to coarse, subangular; ~5% silt; brown, loose, moist.	
6' – 7'	6	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~35% gravel, fine to coarse, subangular; ~5% silt; brown, loose, moist.	
7' – 8'	7	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~30% gravel, fine to coarse, sub angular; ~5% gravel, coarse, subrounded; ~5% silt; brown, loose, moist.	
8' – 10'	8	GP	24	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~15% gravel, fine to medium, subangular; ~5% brick and concrete fragments; orange – brown, loose, moist.	
10' – 15'	9	GP	60	0.0	0.0	10' – 12' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~15% gravel, fine to medium, subangular; ~5% brick and concrete fragments; orange – brown, loose, moist. 12' – 15' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; tan, loose, moist.	
Sample 1 SS = Spli HA = Har GP = Geo VC = Vac	t Spoond and Aug oprobe	on ger	ler			NOTES: Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total CPCBs, and TPHs were collected from 8' – 10' bgs and 17.9 19.5' bgs.	



Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 4/28/11

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA Date Completed: 5/17/11

Boring No.: EGCSB-10

Sheet 2 of 2

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Date Star				1		Jeteu. 5/17/11	
Donath		Soil Sa		Mercury	Photo- ionization	Compute Description	Nat Grid
Depth (ft.)	No.	Туре	Rec. (inches)	Vapor (mg/m³)	Detector (ppm)	Sample Description	Cold
15' – 20'	10	GP	48	0.0	0.0	15' – 16' WELL GRADED SAND WITH GRAVEL (SW): 75% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; brown, loose, moist.	
				0.0	0.0	16' – 19' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; tan – orange, loose, wet at 19.5' bgs.	
20' – 25'	11	GP	48	0.0	0.0	20' – 23' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; orange – tan, loose, wet.	
				0.0	0.0	23' – 24' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; brown – orange, loose, wet.	
25' – 30'	12	GP	48	0.0	0.0	25' – 26' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; tan, loose, wet.	
				0.0	0.0	26' – 29' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, coarse, subangular; tan, loose, wet.	
30' – 35'	13	GP	48	0.0	0.0	30' – 31' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine, subangular; tan, loose, wet.	
				0.0	0.0	medium, subangular; tan, loose, wet.	
SS = Split	Spo	on	I	I	<u> </u>	NOTES: Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total C	
30' – 35' Sample T SS = Split HA = Han	ypes	on	48			26' – 29' WELL GRADED SAND (SW): ~95% sand, fir medium, subangular; ~5% gravel, coarse, subangular; loose, wet. 30' – 31' WELL GRADED GRAVELLY SAND (SW): ~6 fine to medium, subangular; ~40% gravel, fine, subanguloose, wet. 31' – 34' POORLY GRADED SAND (SP): ~100% sand medium, subangular; tan, loose, wet.	tan, 60% sand, gular; tan, d, fine to

19.5' bgs.

GP = Geoprobe Sampler



East Garden City

Former Stewart Avenue Holder Station

By: Christopher Kiernan

Boring No.: EGCSB-11

Sheet <u>1</u> of <u>2</u>

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 5/11/11

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a **Date Completed:** 5/23/11

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 8' – 10' bgs and 14.5' –

		Soil Sa	ımple	Mercury	Photo- ionization	·	Nat. Grid
Depth (ft.)	No.	Туре	Rec. (inches)	Vapor (mg/m ³)	Detector (ppm)	Sample Description	Color
0' – 1'	1	HA	12	0.0 0.0	0.0 0.0	0" – 3" Bluestone. 3" – 1' WELL GRADED SAND WITH GRAVEL (SW): ~60% sand, fine to medium, subangular; ~15% gravel, fine to medium, subangular; ~15% bluestone; tan, loose, dry.	
1' – 2'	2	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subangular; brown – red, loose, moist.	
2' – 3'	3	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subangular; brown, loose, moist.	
3' – 4'	4	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subangular; brown, loose, moist.	
4' – 5'	5	НА	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to coarse, subangular; ~20% gravel, fine to course, subrounded; brown – orange, loose, moist.	
5' - 6'	6	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; orange – brown, loose, moist.	
6' – 7'	7	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; orange – brown, loose, moist.	
7' – 8'	8	НА	12	0.0	0.0	POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; orange – brown, loose, moist.	
8' – 10'	9	GP	24	0.0	0.0	8' – 9' WELL GRADED SAND WITH GRAVEL (SW): ~70% sand, fine to medium, subangular; ~25% gravel, fine to medium, subangular; ~5% brick fragments and clinker; brown – dark brown, loose, moist.	
10' – 15'	10	GP	48	0.0	0.0	10' – 11' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; tan – brown, loose, moist.	
				0.0	0.0	11' – 13' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; tan –	
				0.0	0.0	orange, loose, moist. 13' – 14' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to coarse, subangular; ~20% gravel, fine, subrounded; orange – tan, loose, moist.	
Sample T	ypes	:				NOTES:	

16.5' bgs.

J:_HazWaste\3008 (National Grid)\East Garden City\Boring Logs\EGCSB-11.doc

SS = Split Spoon

HA = Hand Auger **GP** = Geoprobe Sampler



Drill Rig: Geoprobe

Project No.: 3008
Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA
Date Completed: 5/23/11

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Boring No.: EGCSB-11

By: Christopher Kiernan

Sheet <u>2</u> of <u>2</u>

_	illi Kig. Geoplobe					Differ Hammer Weight. NA Doming Diameter. 2		
Date Star	ted:	5/11/11			Date Comp	oleted: 5/23/11		
		Soil Sa	ımple		Photo-			Nat
			-	Mercury	ionization			Grid
Depth			Rec.	Vapor	Detector	Sample Des	scription	Colo
(ft.)	No.	Туре	(inches)	(mg/m ³)	(ppm)	-	•	Index
15' – 20'	11	GP	48	0.0	0.0	15' - 16.5' WELL GRADED SAND	WITH GRAVEL (SW): ~80%	
						sand, fine to medium, subangular;		
						subrounded; tan, loose, wet at 16.		
				0.0	0.0	16.5' – 17' WELL GRADED SAND		
						sand, fine to coarse, subrounded; subrounded; orange – tan, lose, w		
				0.0	0.0	17' – 19' WELL GRADED SAND (
				0.0	0.0	medium, subangular; ~5% gravel,		
						wet.	, , , , , , , , , , , , , , , , , , , ,	
20' – 25'	12	GP	48	0.0	0.0	20' - 22' WELL GRADED SAND \		
						sand, fine to medium, subangular;	~20% gravel, fine to medium,	
				0.0	0.0	subrounded; tan, loose, wet.	CM). OF 0/ and fine to	
				0.0	0.0	22' – 24' WELL GRADED SAND (medium, subangular; ~5% gravel,		
						tan, loose, wet.	mile to medium, subrodinaed,	
25' – 30'	13	GP	48	0.0	0.0	25' – 27.5' WELL GRADED SAND) (SW): ~95% sand, fine to	
20 00	'	0'	40	0.0		medium subangular; ~5% gravel,		
						wet.		
				0.0	0.0	27.5' – 28.5' WELL GRADED GRA		
						sand, fine to medium, subangular;	~40% gravel, fine to medium,	
				0.0	0.0	subrounded; tan, loose, wet. 28.5' – 29' WELL GRADED SAND) (SW): ~95% sand fine to	
				0.0	0.0	medium, subangular; ~5% gravel,		
						tan, loose, wet.	,	
30' – 35'	14	GP	0			No recovery.		
								1
Sample T	VDOO	<u> </u>		1		NOTES:		<u> </u>
Sample I SS = Split						Samples for TCL VOCs, TCL S	SVOCs TAL Matals Total C	`vanide
33 = 3piii HA = Han						PCBs, and TPHs were collected		
GP = Geo			lor			16.5' bgs.	a nom o – To bys and 14.5	<i>5</i> –
VC = Vac		e Janip	n e i			10.0 bgs.		
vo = vac	uuiii							



Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 5/11/11

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a **Date Completed:** 5/20/11

Boring No.: EGCSB-12

Sheet <u>1</u> of <u>1</u>

By: Christopher Kiernan

Boring Completion Depth: 8'
Ground Surface Elevation: ---

Boring Diameter: 2"

Date Started: 5/11/11 Soil Sample				1		oleted: 5/20/11	
		Soil Sa	imple	Mercury	Photo- ionization		Na Gri
Depth			Rec.	Vapor	Detector	Sample Description	Col
(ft.)	No.	Туре			(ppm)	Sample Description	Inde
0' – 1'	1	HA	12	0.0	0.0	0" – 2" Bluestone	ma
0 – 1	'	11/	12	0.0	0.0	2" – 1' WELL GRADED SAND (SW): ~60% sand, fine to	
						medium, subangular; ~35% bluestone; ~5% silt; brown – dark	
						brown, medium dense, moist.	
1' – 2'	2	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium,	
						subangular; ~5% gravel, fine, subangular; light brown – tan,	
						loose, moist.	
2' - 3'	3	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium,	
						subangular; ~5% gravel, fine, subangular; light brown – tan,	
						loose, moist.	
3' – 4'	4	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine	
						to medium, subangular; ~20% gravel, fine to medium,	
						subangular; light brown – orange, loose, moist.	
4' - 5'	5	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine	
						to medium, subangular; ~20% gravel, fine to medium,	
						subangular; light brown – orange, loose, moist.	
5' - 6'	6	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine	
						to medium, subangular; ~20% gravel, fine to medium,	
						subangular; light brown – orange, loose, moist.	
6' - 7'	7	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium,	
0 ,	'	11/1	12	0.0	0.0	subangular; ~5% gravel, fine to medium, subangular; brown –	
						orange, loose, moist.	
7' – 8'	8	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium,	
7 - 0	0	IIA	12	0.0	0.0	subangular; ~5% gravel, fine, subangular; brown, loose, moist.	
						Subangular, ~570 graver, fille, Subangular, brown, 1003e, filost.	
Sample 1	vpes	;:		1		NOTES:	
SS = Spli						Due to presence of overhead utilities, boring could not be	
HA = Har						completed. No sample were collected for laboratory analy	sis.
i iui	/ ١٠٠١	ac.				The sample were delicated for laboratory arrangements	5.5.

GP = Geoprobe Sampler



Drill Rig: Geoprobe **Date Started:** 5/10/11

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a **Date Completed:** 5/20/11

Boring No.: EGCSB-13

Sheet <u>1</u> of <u>2</u>

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Dale Star	Soil Sample					Dietea: 5/20/11	NI-1
	1	Soil Sa	ımpie	Manarima	Photo-		Nat. Grid
Danth		1	Doo	Mercury	ionization	Comple Description	Colo
Depth (ft.)	No.	Туре	Rec. (inches)	Vapor (mg/m³)	Detector (ppm)	Sample Description	Inde
0' – 1'	1	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~75% sand, fine to medium,	mac
0 – 1	'	11/4	12	0.0	0.0	subangular; ~15% bluestone; ~5% gravel, fine to medium, subangular; ~5: silt; dark brown, medium dense, dry.	
1' – 2'	2	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; ~5% silt; dark brown, medium dense, dry.	
2' – 3'	3	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; ~5% silt; dark brown, medium dense, dry.	
3' – 4'	4	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; light brown, loose, moist.	
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine, subangular; light brown, loose, moist.	
5' – 6'	6	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine, subangular; light brown, loose, moist.	
6' – 7'	7	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine, subangular; light brown, loose, moist.	
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to coarse, subangular; ~20% gravel, fine to medium, subangular; light brown, loose, moist.	
8' – 10'	9	GP	24	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; brown – tan, loose, moist.	
10' – 15'	10	GP	48	0.0	0.0	10' – 10.5' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; brown – tan, loose, moist.	
				0.0	0.0	10.5' – 12' WELL GRADED SAND (SW): ~95% sand, fine to medium; ~5% gravel, fine to medium, subrounded; orange-brown, loose, moist.	
				0.0	0.0	12' – 14' WELL GRADED SAND (SW): ~95% sand, fine to medium; ~5% gravel, fine, subrounded; orange – brown, loose, moist.	
Sample T					l .	NOTES.	

Sample Types:

SS = Split Spoon

HA = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

NOTES:

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 8' – 10' bgs and 16' – 18' bgs.



Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 5/10/11

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA Date Completed: 5/20/11

Boring No.: EGCSB-13

Sheet 2 of 2

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 8' – 10' bgs and 16' – 18'

Depth (ft.) No. Type (inches) (mg/m³) Detector (ppm) 15' - 20' 11 GP 24 0.0 0.0 WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; tan – orange, loose, moist, wet at 18' bgs. 20' - 25' 12 GP 60 0.0 0.0 20' - 22' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium subrounded; tan – orange, loose, wet. 0.0 0.0 22' - 25' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~5% gravel, fine to coarse, subrounded; tan, loose, wet. 30' - 35' 14 GP 48 0.0 0.0 WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to coarse, subrounded; tan, loose, wet.	Date Star						Dieted: 5/20/11	
Depth (ft.) No. Type Rec. (inches) (mg/m³) Detector (ppm)		,	Soil Sa	ımple		Photo-		Nat
(ft.)No.Type(inches)(mg/m³)(ppm)15' - 20'11GP240.00.0WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; hine to medium, subangular; ~5% gravel, fine to medium, subangular; ~20% gravel, fine to medium sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~5% gravel, fine to coarse, subrounded; tan, loose, wet.30' - 35'14GP480.00.0WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to coarse, subrounded; tan, loose, wet.30' - 35'14GP480.00.0WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; tan, loose, wet.				I _				Grid
15' – 20' 11 GP 24 0.0 0.0 WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; tan – orange, loose, moist, wet at 18' bgs. 20' – 25' 12 GP 60 0.0 20' – 22' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium subrounded; tan – orange, loose, wet. 0.0 0.0 22' – 25' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded tan, loose, wet. 25' – 30' 13 GP 60 0.0 0.0 25' – 28' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded tan, loose, wet. 0.0 0.0 28' – 30' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to coarse, subrounded; tan, loose, wet. 30' – 35' 14 GP 48 0.0 0.0 WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; tan, loose, wet.	-						Sample Description	Cold
subangular; ~5% gravel, fine to medium, subrounded; tan – orange, loose, moist, wet at 18' bgs. 20' – 25' 12 GP 60 0.0 20' – 22' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium subrounded; tan – orange, loose, wet. 0.0 0.0 22' – 25' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded tan, loose, wet. 25' – 30' 13 GP 60 0.0 0.0 25' – 28' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded tan, loose, wet. 0.0 0.0 28' – 30' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to coarse, subrounded tan, loose, wet. 30' – 35' 14 GP 48 0.0 0.0 WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; tan, loose, wet.	_ , ,	No.		(inches)	(mg/m³)	(ppm)		Inde
sand, fine to medium, subangular; ~20% gravel, fine to medium subrounded; tan – orange, loose, wet. 22' – 25' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded tan, loose, wet. 25' – 30' 13 GP 60 0.0 0.0 25' – 28' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded tan, loose, wet. 0.0 0.0 28' – 30' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to coarse, subrounded; tan, loose, wet. 30' – 35' 14 GP 48 0.0 0.0 WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; ~5% gravel, fine to medium, subangular; tan, loose	15' – 20'			24	0.0	0.0	subangular; ~5% gravel, fine to medium, subrounded; tan -	
medium, subangular; ~5% gravel, fine to medium, subrounded tan, loose, wet. 0.0 0.0 28' - 30' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to coarse, subrounded; tan, loose, wet. 30' - 35' 14 GP 48 0.0 0.0 WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; tan, loose	20' – 25'	12	GP	60			22' – 25' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded;	
medium, subangular; ~5% gravel, fine to coarse, subrounded; tan, loose, wet. 30' – 35'	25' – 30'	13	GP	60			medium, subangular; ~5% gravel, fine to medium, subrounded; tan, loose, wet.	
subangular; ~5% gravel, fine to medium, subangular; tan, loos							medium, subangular; ~5% gravel, fine to coarse, subrounded; tan, loose, wet.	
	30° – 35°	14	GP .	48	0.0	0.0	subangular; ~5% gravel, fine to medium, subangular; tan, loose,	
Sample Types: NOTES:	Sample T	ypes	:	1	1	I	NOTES:	1

bgs.

SS = Split Spoon

HA = Hand Auger **GP** = Geoprobe Sampler



Former Stewart Avenue Holder Station

Drilling Contractor: Fenley Nicol/WRS **Driller:** Mike Smith **Drilling Method:** Vacuum and Geoprobe

Drill Rig: Geoprobe Date Started: 5/11/11 Project No.: 3008 **Boring No.:** EGCSB-14 Project Name: National Grid Sheet <u>1</u> of <u>2</u>

East Garden City By: Christopher Kiernan

Geologist: Paul Barusich **Boring Completion Depth: 35' Ground Surface Elevation: ---**

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide,

PCBs, and TPHs were collected from 8.5' - 10.5' bgs and 14' -

16' bgs. Monitoring well EGCMW-06 was installed within the

Boring Diameter: 2" Drive Hammer Weight: n/a Date Completed: 5/25/11

Date Star	Soil Sample				Date Completed: 5/25/11			
Depth		Soli Sa	Rec.	Mercury Vapor	Photo- ionization Detector	Sample Description	Nat. Grid Colo	
(ft.)	No.	Туре	(inches)	(mg/m ³)	(ppm)	Sample Description	Index	
0' – 1'	1	HA	12	0.0	0.0	0" – 3" Bluestone. 3" – 1' WELL GRADED SAND WITH GRAVEL (SW): ~60% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~15% bluestone; ~5% silt; brown, dense, moist.		
1' – 2'	2	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~70% sand, fine to medium, subangular; ~15% gravel, fine to medium, subangular; ~10% bluestone; ~5% silt; brown, medium dense, moist.		
2' – 3'	3	НА	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~5% silt, brown, dense, moist.		
3' – 4'	4	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~60% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~15% clinker, angular; ~5% silt; brown – dark brown, dense, moist.		
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~60% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; ~15% clinker, angular; ~5% silt; brown – dark brown, dense, moist.		
5' – 6'	6	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to medium, subrounded; dark brown, medium dense, moist.		
6' – 7'	7	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to coarse, subrounded; tan – orange, loose, moist.		
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to coarse, subrounded; tan – orange, loose, moist.		
8' – 10'	9	GP	24	0.0	2.1	8' – 9' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; brown, loose, moist. 9' – 10' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; brown – dark brown, loose, moist, trace black staining at 10' bgs.		
Sample T	ypes	<u> </u> :				NOTES:		

borehole to 24.5' bgs.

SS = Split Spoon

HA = Hand Auger

VC = Vacuum

GP = Geoprobe Sampler



Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Boring Completion Depth: 35'

Ground Surface Elevation: ---

Boring No.: EGCSB-14

By: Christopher Kiernan

Sheet 2 of 2

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith Drill Rig: Geoprobe Date Started: 5/11/11 Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA Date Completed: 5/25/11

Boring Diameter: 2"

Soil Sample
Depth (ft.) No. Type (inches) (mg/m³) Detector (ppm) 10' - 15' 10 GP 48 0.0 0.0 10' - 10.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium; dark brown, loose, moist. 0.0 0.0 1.5' - 12' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subrounded; tan – orange, loose, moist. 12' - 14' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subrounded; orange – tan, loose, moist. 15' - 20' 11 GP 48 0.0 0.0 15' - 16' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan – orange, loose, wet at 16' bgs. 0.0 0.0 16' - 17.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; orange – tan, loose, wet. 17.5' - 19' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.
Type (inches) (mg/m³) (ppm)
Type (inches) (mg/m³) (ppm)
10' – 15' 10 GP 48 0.0 10' – 10.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium; dark brown, loose, moist. 0.0 0.0 10.5' – 12' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subrounded; tan – orange, loose, moist. 0.0 12' – 14' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subrounded; orange – tan, loose, moist. 15' – 20' 11 GP 48 0.0 0.0 15' – 16' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan – orange, loose, wet at 16' bgs. 0.0 0.0 16' – 17.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; orange – tan, loose, wet. 0.0 0.0 17.5' – 19' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.
medium, subangular; ~5% gravel, fine to medium; dark brown, loose, moist. 0.0
loose, moist. 0.0 0.0 10.5' – 12' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subrounded; tan – orange, loose, moist. 0.0 12' – 14' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subrounded; orange – tan, loose, moist. 15' – 20' 11 GP 48 0.0 0.0 15' – 16' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan – orange, loose, wet at 16' bgs. 0.0 0.0 16' – 17.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; orange – tan, loose, wet. 0.0 0.0 17.5' – 19' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.
0.0 0.0 10.5' – 12' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subrounded; tan – orange, loose, moist. 0.0 12' – 14' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subrounded; orange – tan, loose, moist. 15' – 20' 11 GP 48 0.0 15' – 16' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan – orange, loose, wet at 16' bgs. 0.0 0.0 16' – 17.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; orange – tan, loose, wet. 0.0 0.0 17.5' – 19' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.
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0.0 0.0 12' – 14' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subrounded; orange – tan, loose, moist. 15' – 20' 11 GP 48 0.0 0.0 15' – 16' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan – orange, loose, wet at 16' bgs. 0.0 0.0 16' – 17.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; orange – tan, loose, wet. 0.0 0.0 17.5' – 19' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.
sand, fine to medium, subangular; ~20% gravel, fine, subrounded; orange – tan, loose, moist. 15' – 20' 11 GP 48 0.0 15' – 16' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan – orange, loose, wet at 16' bgs. 0.0 0.0 16' – 17.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; orange – tan, loose, wet. 0.0 0.0 17.5' – 19' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.
subrounded; orange – tan, loose, moist. 15' – 20' 11 GP 48 0.0 15' – 16' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan – orange, loose, wet at 16' bgs. 0.0 0.0 16' – 17.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; orange – tan, loose, wet. 0.0 0.0 17.5' – 19' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.
15' – 20' 11 GP 48 0.0 0.0 15' – 16' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan – orange, loose, wet at 16' bgs. 0.0 0.0 16' – 17.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; orange – tan, loose, wet. 0.0 0.0 15' – 16' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.
medium, subangular; tan – orange, loose, wet at 16' bgs. 16' – 17.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; orange – tan, loose, wet. 0.0 0.0 17.5' – 19' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.
0.0 0.0 16' – 17.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; orange – tan, loose, wet. 0.0 0.0 17.5' – 19' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.
medium, subangular; ~5% gravel, fine, subrounded; orange – tan, loose, wet. 0.0 0.0 0.0 Tan, loose, wet. 17.5' – 19' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.
tan, loose, wet. 0.0 0.0 17.5' – 19' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.
0.0 0.0 17.5' – 19' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.
medium, subangular; tan, loose, wet.
20' – 25' 12 GP 48 0.0 0.0 20' – 22' WELL GRADED SAND (SW): ~95% sand fine to
20 - 25 12 O1 40 0.0 0.0 20 22 WELL ON IDED ON IND (OW)000/0 Sand, mile to
medium, subangular; ~5% gravel, fine, subrounded; orange –
tan, loose, wet.
0.0 0.0 22' – 24' WELL GRADED SAND WITH GRAVEL (SW): ~80%
sand, fine to medium, subangular; ~20% gravel, fine,
25' – 30' 13 GP 48 0.0 0.0 25' – 25.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; tan –
orange, loose, wet.
0.0 0.0 25.'5 – 28' WELL GRADED GRAVELLY SAND (SW): ~60%
sand, fine to medium, subangular; ~40% gravel, fine to medium,
subrounded; tan – orange, loose, wet.
0.0 0.0 28' – 29' POORLY GRADED SAND (SP): ~100% sand, fine to
medium, subangular; orange – tan, loose, wet.
30' – 35' 14 GP 48 0.0 0.0 30' – 32' WELL GRADED SAND (SW): ~95% sand, fine to
medium, subangular; ~5% gravel, fine, subrounded; tan, loose,
wet. 0.0 0.0 32' – 34' WELL GRADED SAND WITH GRAVEL (SW): ~80%
sand, fine to medium, subangular; ~20% gravel, fine to medium,
subrounded; tan, loose, wet.
Sample Types: NOTES:
SS = Split Spoon Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cya
HA = Hand Auger PCBs, and TPHs were collected from 8.5' – 10.5' bgs and 14
GP = Geoprobe Sampler 16' bgs. Monitoring well EGCMW-06 was installed within the

VC = Vacuum

16' bgs. Monitoring well EGCMW-06 was installed within the borehole to 24.5' bgs.



Driller: Mike Smith Drill Rig: Geoprobe Date Started: 5/11/11 Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a Date Completed: 5/24/11

Boring No.: EGCSB-15

Sheet <u>1</u> of <u>2</u>

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation: ---**

Boring Diameter: 2"

Date Star	Date Started: 5/11/11 Soil Sample					pleted: 5/24/11	
	;	Soil Sa	ımple	Mercury	Photo- ionization		Nat. Grid
Depth (ft.)	No.	Type	Rec. (inches)	Vapor (mg/m ³)	Detector (ppm)	Sample Description	Color
0' – 1'	1	HA	12	0.0	0.0	0" – 3" Bluestone.	
				0.0	0.0	3" – 1" WELL GRADED SAND (SW): ~75% sand; fine to medium, subangular; ~20% bluestone; ~5% asphalt fragments, ~2-3" in diameter; brown – dark brown, dense, dry.	
1' – 2'	2	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand; fine to medium, subangular; ~5% bluestone; ~5% asphalt fragments, ~2-3" in diameter; brown – dark brown, dense, dry.	
2' – 3'	3	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~70% sand, fine to medium, subangular; ~15% gravel, fine to medium, subangular; ~10% brick fragments; ~5% silt; dark brown, dense, moist.	
3' – 4'	4	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~70% sand, fine to medium, subangular; ~15% gravel, fine to medium, subangular; ~10% brick fragments; ~5% silt; dark brown, dense, moist.	
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine to medium, subangular; ~15% gravel, fine to medium, subangular; ~5% gravel, coarse, subrounded; ~5% silt; dark brown, medium dense, moist.	
5' – 6'	6	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; dark brown, medium dense, moist.	
6' – 7'	7	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to coarse, subangular; dark brown, medium dense, moist.	
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to coarse, subangular; dark brown, medium dense, moist.	
8' – 10'	9	GP	24	0.0	2.1	8' – 8.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; tan – brown, loose, moist.	
				0.0	6.5	8.5' – 9' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine, subrounded; dark brown, loose, moist, slight naphthalene odor.	
				0.0	6.2	9' – 10' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; orange – tan, loose, moist, slight naphthalene-like odor.	
Sample Types: SS = Split Spoon HA = Hand Auger GP = Geoprobe Sampler VC = Vacuum						NOTES: Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total OPCBs, and TPHs were collected from 8.5' – 10.5' bgs and 16.5' bgs.	



Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Boring No.: EGCSB-15 Sheet 2 of 2

By: Christopher Kiernan

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 5/11/11

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA **Date Completed:** 5/24/11

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

PCBs, and TPHs were collected from 8.5' - 10.5' bgs and 14.5' -

	;	Soil Sa	mple		Photo-		Nat
				Mercury	ionization		Grid
Depth			Rec.	Vapor	Detector	Sample Description	Color
(ft.)	No.	Type	(inches)	(mg/m ³)	(ppm)		Index
10' – 15'	10	GP	60	0.0	0.0	10' - 11' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine to medium, subangular;	
						tan, loose, moist.	
				0.0	0.0	11' – 13' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to medium, subangular; ~20% gravel, fine to medium,	
				0.0	0.0	subrounded; tan – orange, loose, moist. 13' – 15' WELL GRADED SAND WITH GRAVEL: (SW): ~80%	
				0.0	0.0	sand, fine to medium, subangular; ~20% gravel, fine,	
						subrounded; orange, loose, moist.	
15' – 20'	11	GP	60	0.0	0.0	15' – 15.5' WELL GRADED SAND (SW): ~95% sand, fine to	
10 20		0,	00	0.0	0.0	medium, subangular; ~5% gravel, fine, subrounded; tan – gray,	
						bands of gray/green (no odor, appears to be native), loose,	
						moist.	
				0.0	0.0	15.5' – 16' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine, subrounded; tan, loose,	
				0.0	0.0	moist.	
				0.0	0.0	16' – 19' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; orange – tan, lose, wet at 16.5' bgs.	
				0.0	0.0	19' – 20' WELL GRADED SAND (SW): ~95% sand, fine to	
				0.0	0.0	medium, subangular; ~5% gravel, fine, subrounded; tan, loose,	
						wet.	
20' – 25'	12	GP	60	0.0	0.0	20' - 23' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
						fine to medium, subangular; ~40% gravel, fine, subrounded;	
						tan, loose, wet.	
				0.0	0.0	23' – 25' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine, subrounded; tan, loose, wet.	
25' – 30'	13	GP	60	0.0	0.0	25' – 29' WELL GRADED SAND (SW): ~95% sand, fine to	
25 – 30	13	GF	60	0.0	0.0	medium, subangular; ~5% gravel, fine, subrounded; tan, loose,	
						wet.	
				0.0	0.0	29' – 30' POORLY GRADED SAND (SP): ~100% sand, fine to	
		<u></u>				medium, subangular; tan, loose, wet.	
30' – 35'	14	GP	60	0.0	0.0	30' - 33' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
						fine to coarse, subangular; ~40% gravel, fine, subrounded; tan,	
				0.0	0.0	loose, wet.	
				0.0	0.0	33' – 35' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine, subrounded; tan, loose, wet.	
						WGI.	
Sample Ty						NOTES:	
SS = Split	Spoo	on				Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total C	yanıde,

16.5' bgs.

HA = Hand Auger **GP** = Geoprobe Sampler



Project Name: National Grid

East Garden City

Project No.: 3008

Former Stewart Avenue Holder Station

Sheet <u>1</u> of <u>2</u> By: Christopher Kiernan

Boring No.: EGCSB-16

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 5/11/11

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a **Date Completed:** 5/24/11

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Date Star				1		Jielea. 5/24/11	
		Soil Sa	ımple		Photo-		Nat
			•	Mercury	ionization		Grie
Depth			Rec.	Vapor	Detector	Sample Description	Cold
(ft.)	No.	Type	(inches)	(mg/m ³)	(ppm)	·	Inde
0' - 1'	1	HA	12	0.0	0.0	0" – 3" Bluestone	
						3" - 1' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
						fine to medium, subangular; ~35% gravel, fine to coarse,	
						subrounded; ~5% silt; thin layer of asphalt at 6" bgs; dark	
						brown, dense, moist.	
1' - 2'	2	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to	
						medium, subangular; ~35% gravel, fine to coarse, subrounded;	
						~5% silt; dark brown, dense, moist.	
2' - 3'	3	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine	
						to medium, subangular; ~20% gravel, fine to medium,	
						subangular; brown, medium dense, moist.	
3' – 4'	4	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine	
						to medium, subangular; ~20% gravel, fine to medium,	
						subangular; ~5% silt, brown, medium dense, moist.	
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine	
						to medium, subangular; ~20% gravel, fine to coarse,	
						subrounded; brown – orange, loose, moist.	
5' - 6'	6	НА	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine	
5 – 0	O	117	12	0.0	0.0	to medium, subangular; ~20% gravel, fine to coarse,	
						subrounded; brown – orange, loose, moist.	
6' – 7'	7	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~90% sand, fine	
						to medium, subangular; ~5% gravel, fine to medium,	
						subangular; ~5% silt, dark brown – black, medium dense, moist.	
7' – 8'	8	НА	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~90% sand, fine	
						to medium, subangular; ~5% gravel, fine to medium,	
						subangular; ~5% silt, dark brown, medium dense, moist.	
01 401		0.0	0.4	0.0	<i>F</i> 2	0' 0 25' Acabelt	
8' – 10'	9	GP	24	0.0 0.0	5.3 6.7	8' - 8.25' Asphalt 8.25' - 10' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
				0.0	6.7	sand, fine to medium, subangular; ~20% gravel, medium,	
						subangular; dark brown – black, loose, moist, black staining,	
						slight naphthalene-like odor.	
10' – 15'	10	GP	36	0.0	0.9	10' – 12' WELL GRADED SAND (SW): ~95% sand, fine to	
10 – 13	10	GF	30	0.0	0.3	medium, subangular; ~5% gravel, fine, subangular; tan –	
						brown, loose, moist.	
				0.0	0.3	12' – 13' WELL GRADED SAND (SW): ~95% sand, fine to	
				0.0	0.0	medium, subangular; ~5% gravel, fine to medium, subrounded;	
						tan, loose, moist.	
						, , ,	
Sample T	ypes	:	•	•	•	NOTES:	
SS = Split						Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total C	Cyanic
HA = Han						PCBs, and TPHs were collected from 8' – 10' bgs and 15'	
GP = Geo			ler			bgs.	
VC \/-	יטטוקי	Jamp	,101			~ 9 0.	



Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

By: Christopher Kiernan

Boring No.: EGCSB-16

Sheet 2 of 2

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith Drill Rig: Geoprobe Date Started: 5/11/11 Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA Date Completed: 5/24/11

Boring Completion Depth: 35' Ground Surface Elevation: ---

Boring Diameter: 2"

	Soil Sample		ımple		Photo-		Nat
		ı	T	Mercury	ionization		Grid
Depth			Rec.	Vapor	Detector	Sample Description	Color
(ft.)	No.	Type		(mg/m ³)	(ppm)		Index
15' – 20'	11	GP	48	0.0	0.0	15' - 15.5' POORLY GRADED SAND (SP): ~100% sand, fine to	
				0.0	0.0	medium, subangular; brown – tan, loose, moist.	
				0.0	0.0	15.5' – 17' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular;	
						brown, loose, wet at 17' bgs.	
				0.0	0.0	17' – 19' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to medium, subangular; ~20% gravel, fine to medium,	
						subrounded; tan, loose, wet.	
20' – 25'	12	GP	60	0.0	0.0	20' – 22' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine to coarse, subangular;	
				0.0	0.0	tan, loose, wet. 22' – 25' WELL GRADED SAND (SW): ~95% sand, fine to	
				0.0	0.0	coarse, subangular; ~5% gravel, fine to medium, subrounded;	
						tan, loose, wet.	
25' – 30'	13	GP	60	0.0	0.0	25' – 27.5' WELL GRADED SAND (SW): ~95% sand, fine to	
25 – 50	13	01	00	0.0	0.0	medium, subangular; ~5% gravel, fine, subrounded; tan, loose,	
						wet.	
				0.0	0.0	27.5' – 29' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to medium, subangular; ~20% gravel, fine to medium,	
				0.0	0.0	subrounded; tan, loose, wet.	
				0.0	0.0	29' – 30' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; tan, loose,	
						wet.	
30' – 35'	14	GP	60	0.0	0.0	30' - 32' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to coarse, subangular; ~20% gravel, fine to medium,	
						subrounded; tan, loose, wet.	
				0.0	0.0	32' – 33' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
						fine to coarse, subangular; ~40% gravel, fine to medium, subrounded; tan, loose, wet.	
				0.0	0.0	33' – 35' WELL GRADED SAND (SW): ~95% sand, fine to	
				0.0	0.0	medium, subangular; ~5% gravel, fine, subrounded; tan, loose,	
						wet.	
Sample T	VDOS		l	<u> </u>	<u> </u>	NOTES:	

Sample Types:

SS = Split Spoon

HA = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 8' – 10' bgs and 15' – 17' bgs.



Drill Rig: Geoprobe

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Boring Completion Depth: 35'

Ground Surface Elevation: ---

Boring No.: EGCSB-17

By: Christopher Kiernan

Sheet <u>1</u> of <u>2</u>

Drilling Contractor: Fenley Nicol/WRS Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a Date Completed: 5/24/11

Boring Diameter: 2"

PCBs, and TPHs were collected from 9' – 11' bgs and 14' – 16'

Date Star					Date Completed: 5/24/11			
Date Star						Photo-		
	,	Soil Sa	impie	Mercury				Nat Grid
Depth			Rec.	Vapor	Detector	Sample Des	cerintian	
(ft.)	No.	Туре	(inches)	(mg/m ³)	(ppm)	Sample Des	scription	Color Index
0' – 1'	1	HA	12	0.0	0.0	0" – 2" Bluestone.		mac
0 – 1	'	11/	12	0.0	0.0	2" – 1' WELL GRADED SAND WI	TH GRAVEL (SW): ~75%	
						sand, fine to medium, subangular;		
						subangular; ~5% silt, brown, dens		
1' – 2'	2	HA	12	0.0	0.0	WELL GRADED SAND WITH GR		
						to medium, subangular; ~20% gra		
						subangular; ~5% silt; dark brown,	medium dense, moist.	
2' - 3'	3	HA	12	0.0	0.0	WELL GRADED SAND WITH GR		
						to medium, subangular; ~20% gra		
						subangular; ~5% silt; dark brown,	medium dense, moist.	
3' – 4'	4	НА	12	0.0	0.0	WELL GRADED SAND WITH GR	AVEL (SW): ~75% sand, fine	
	-					to medium, subangular; ~20% gra		
						subangular; ~5% silt, dark brown,		
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90		
						subangular; ~5% gravel, fine to me	edium, subangular; ~5% silt,	
						dark brown, loose, moist.		
5' - 6'	6	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~80		
						subangular; ~20% gravel, fine to o	oarse, subrounded; dark	
						brown, loose, moist.		
6' - 7'	7	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAN		
						medium, subangular; ~40% grave	I, fine to coarse, subrounded;	
						brown, loose, moist.		
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAN		
						medium, subangular; ~40% grave		
						dark brown, medium dense, moist	•	
8' - 10'	9	GP	24	0.0	0.0	8' - 9' WELL GRADED SAND (SV		
						medium, subangular; ~5% gravel,	fine to medium, subangular;	
				0.0	2.8	brown, loose, moist. 9' – 10' WELL GRADED SAND W	ITH CDAYEL (CM), 900/	
				0.0	2.0	sand, fine to medium, subangular;		
						subangular; ~5% clinker; brown –		
						staining.		
10' – 15'	10	GP	48	0.0	0.5	10' - 11' WELL GRADED SAND (,	
						medium, subangular; ~5% gravel,	fine, subangular; dark brown,	
				0.0	0.0	loose, moist.	NAUTH ODANIEL (OM): 000(
				0.0	0.0	11' – 12.5' WELL GRADED SAND sand, fine to medium, subangular;		
						subangular; orange – tan, loose, n		
				0.0	0.0	12.5' – 14' WELL GRADED SAND		
						sand, fine to coarse, subangular;		
						subrounded; tan, loose, moist.		
			<u> </u>			110==0		
Sample T						NOTES:	NOCO TAL Motole Tetal C	ا ا ا میدادا
SS = Split	Shoc	ווכ				Samples for TCL VOCs, TCL S		

HA = Hand Auger

VC = Vacuum

GP = Geoprobe Sampler



Drill Rig: Geoprobe

Date Started: 5/11/11

Project No.: 3008
Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

S Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA **Date Completed:** 5/24/11

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Boring No.: EGCSB-17 Sheet 2 of 2

By: Christopher Kiernan

		Soil Sa	ımple		Photo-		Nat Grid
Depth (ft.)	No.	Rec. Type (inches)		Mercury Vapor (mg/m³)	ionization Detector (ppm)	Sample Description	
15' – 20'	11	GP	48	0.0	0.0	15' – 16' WELL GRADED SAND (SW): ~95% sand, fine to	Index
				0.0	0.0	medium, subangular; ~5% gravel, fine, subangular; tan – brown, loose, wet at 16' bgs. 16' – 19' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; tan, loose, wet.	
20' – 25'	12	GP	48	0.0	0.0	20' – 21' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; tan, loose, wet.	
				0.0	0.0	21' – 22' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; tan – orange, loose, wet.	
				0.0	0.0	22' – 24' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; tan, loose, wet.	
25' – 30'	13	GP	48	0.0	0.0	25' – 28' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; tan, loose, wet.	
				0.0	0.0	28' – 29' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; tan, loose, wet.	
30' – 35'	14	GP	48	0.0	0.0	30' – 31.5' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; tan, loose, wet.	
				0.0	0.0	31.5' – 33' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subrounded; tan, loose, wet.	
				0.0	0.0	33' – 34' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet.	
Sample T		<u> </u>			<u> </u>	NOTES:	<u> </u>

Sample Types:

SS = Split Spoon **HA** = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

NOTES

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 9' – 11' bgs and 14' – 16' bgs.



Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 4/28/11

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a
Date Completed: 5/19/11

Boring No.: EGCSB-18

Sheet <u>1</u> of <u>2</u>

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

PCBs, and TPHs were collected from 8' – 10' bgs and 16' – 18'

Date Star		Soil Sa	mnlc		Photo-	Dieted: 5/19/11	Na
		3011 3a	ımpie	Maraumi			
Danth		1		Mercury		Comula Decembries	Gri
Depth	Nia	T	Rec.	Vapor	Detector	Sample Description	Col Ind
(ft.)		Туре		(mg/m³)	(ppm)		ind
0' – 1'	1	HA	12	0.0 0.0	0.0 0.0	0" – 3" Asphalt. 3" – 1' WELL GRADED GRAVELLY SAND (SW): ~60% sa	and
				0.0	0.0	fine to medium, subangular; ~30% gravel, fine to medium,	iria,
						subangular; ~5% silt; ~5% bluestone; dark brown, medium	
						ubangular; ~5% slit; ~5% bluestone; dark brown, medium ense, moist.	
1' – 2'	2	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine	e to
						medium, subangular; ~30% gravel, fine to medium, subang	
						~5% silt; ~5% bluestone; dark brown, medium dense, mois	
2' - 3'	3	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine	
						coarse, subangular; ~40% gravel, fine to coarse, subangul	ar;
						light brown – tan, loose, moist.	
0! 4!	1	110	40	0.0	0.0	WELL ORADED ORAVELLY CAND (OW). COOK fire	- 4-
3' – 4'	4	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine coarse, subangular; ~40% gravel, fine to coarse, subangul	
						light brown – tan, loose, moist.	ai,
						light brown – tan, loose, moist.	
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine	e to
						medium, subangular; ~40% gravel, fine, subangular; light	
						brown, loose, moist.	
5' - 6'	6	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium,	
0 0		, .		0.0	0.0	subangular; ~5% gravel, fine to medium, subangular; light	
						brown – orange, loose, moist.	
6' – 7'	7	HA	12	0.0	0.0		
6 – 7	/	ПА	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; light	
						brown – orange, loose, moist.	
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium,	
						subangular; ~5% gravel, medium, subangular; orange – lig	nt
						brown, loose, moist.	
8' – 10'	9	GP	24	0.0	0.0	8' - 9' WELL GRADED GRAVELLY SAND (SW): ~60% sa	nd,
						fine to medium, subangular; ~40% gravel, fine to coarse,	
						subrounded; brown, loose, moist.	
				0.0	0.0	9' – 10' WELL GRADED SAND WITH GRAVEL (SW): ~80	
						sand, fine to medium; ~20% gravel, fine to coarse, subrour	nded;
						orange – tan, loose, moist.	
·	<u> </u>					NOTES	
Sample T						NOTES:	
SS = Split	t Spoo	on				Samples for TCL VOCs, TCL SVOCs, TAL Metals, T	otal Cyani

bgs.

HA = Hand Auger

VC = Vacuum

GP = Geoprobe Sampler



Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 4/28/11

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA **Date Completed:** 5/19/11

Boring No.: EGCSB-18

Sheet 2 of 2

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Date Stai				1		neted. 5/19/11	
		Soil Sa	imple	Mercury	Photo- ionization		Nat Gric
Depth (ft.)	No.	Туре	Rec. (inches)	Vapor (mg/m³)	Detector (ppm)	tor Sample Description	
10' – 15'	10	GP	48	0.0	0.0	10' – 13' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium,	
				0.0	0.0	subrounded; tan – orange, loose, moist. 13' – 14' WELL GRADED SAND (SW): 95% sand, fine to medium, subangular; ~5% gravel, fine, subangular; tan – orange, loose, moist.	
15' – 20'	11	GP	48	0.0	0.0	15' – 17' WELL GRADED SAND WITH GRAVEL (SW): 80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; tan – brown, loose, moist.	
				0.0	0.0	17' – 19' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to coarse, subrounded; tan – brown, loose, wet at 18' bgs.	
20' – 25'	12	GP	48	0.0	0.0	20' – 22' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; tan – brown, loose, moist.	
				0.0	0.0	22' – 24' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; tan – brown, loose, wet.	
25' – 30'	13	GP	60	0.0	0.0	25' – 27.5' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine, subrounded; tan – orange, loose, wet.	
				0.0	0.0	27.5' – 30' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subrounded; tan, loose, wet.	
30' – 35'	14	GP	60	0.0	0.0	30' – 32' POORLY GRADED SAND (SP): ~100% sand, fine to medium, subangular; tan, loose, wet. 32' – 33' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
						fine to medium, subangular; ~40% gravel, fine to medium, subrounded; tan, loose, wet.	
				0.0	0.0	33' – 35' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; tan, loose, moist.	
Sample T						NOTES:	\ <u> </u>
SS = Split HA = Han	•					Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total C PCBs, and TPHs were collected from 8' – 10' bgs and 16'	

bgs.

GP = Geoprobe Sampler



Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 5/10/11

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a **Date Completed:** 5/20/11

Boring No.: EGCSB-19

Sheet <u>1</u> of <u>2</u>

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Date Star	ted:	5/10/11			Date Comp	oleted: 5/20/11		
Soil Sample Photo- Nat				Nat.				
		1		Mercury	ionization			Grid
Depth	l	l_	Rec.	Vapor	Detector	Sample Des	cription	Color
(ft.)	No.		(inches)	(mg/m³)	(ppm)			Index
0' – 1'	1	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~70		
						subangular; ~20% bluestone; ~5% dense, moist.	silt; dark brown, medium	
1' – 2'	2	HA	12	0.0	0.0	WELL GRADED SAND WITH GRA	AVEL (SW): ~70% sand fine	
1 2	_	'''	12	0.0	0.0	to medium, subangular; ~20% grav		
İ						subangular; ~5% cobbles, subroun		
						loose, moist.		
2' - 3'	3	HA	12	0.0	0.0	WELL GRADED SAND WITH GRA		
						to medium, subangular; ~20% grav subangular; ~5% cobbles, subroun		
						loose, moist.	idea, ~5 % siii, dark blowli,	
3' – 4'	4	НА	12	0.0	0.0	WELL GRADED SAND WITH GRA	AVEL (SW): ~80% sand, fine	
						to coarse, subangular; ~20% grave		
						subangular; light brown - orange, l	oose, moist.	
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~95	% sand, fine to coarse.	
						subangular; ~5% gravel, fine, suba		
						loose, moist.		
5' - 6'	6	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~95	% sand fine to coarse	
0 0		''''	12	0.0	0.0	subangular; ~5% gravel, fine, suba		
						loose, moist.		
6' - 7'	7	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~95	% sand, fine to medium,	
						subangular; ~5% gravel, fine, suba		
						loose, moist.		
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~95		
						subangular; ~5% gravel, fine, suba	ıngular; tan – light brown,	
						loose, moist.		
8' – 10'	9	GP	24	0.0	0.0	WELL GRADED SAND (SW): ~959		
						subangular; ~5% gravel, fine to me	edium, subrounded; tan –	
10' – 15'	10	GP	48	0.0	0.0	brown, loose, moist. 10' – 12' WELL GRADED SAND W	VITH CDAYEL (SWY): 80%	
10 – 15	10	GF	40	0.0	0.0	sand, fine to medium, subangular;		
						subangular; orange – tan, loose, m		
				0.0	0.0	12' - 14' WELL GRADED SAND W	VITH GRAVEL (SW): ~75%	
						sand, fine to coarse, subangular; ~	20% gravel, fine to medium,	
						subangular; ~5% gravel, fine to me	edium, subrounded; tan –	
						orange, loose, moist.		
Sample T			<u> </u>			NOTES:		
SS = Split						Samples for TCL VOCs, TCL S		
HA = Han		_				PCBs, and TPHs were collected	d from 8' – 10' bgs and 16'	– 18'
GP = Geo		e Samp	ler			bgs.		
VC = Vac	uum							
1								



Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Boring Completion Depth: 35'

Ground Surface Elevation: ---

Boring Diameter: 2"

Boring No.: EGCSB-19

By: Christopher Kiernan

Sheet 2 of 2

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith Drill Rig: Geoprobe Date Started: 5/10/11 Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA Date Completed: 5/20/11

Date Star	Depth Rec. Var (ft.) No. Type (inches) (mg/				Date Comp	oleted: 5/20/11		
		Soil Sa	ımple		Photo-			Nat
				Mercury	ionization			Grid
Depth			Rec.	Vapor	Detector	Sample Des	cription	Colc
(ft.)	No.	Type	(inches)	(mg/m ³)	(ppm)	-	•	Inde
15' – 20'	11	GP	48	0.0	0.0	15' - 16' WELL GRADED SAND (S	SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel,		
						tan - orange, loose, moist.		
				0.0	0.0	16' – 18' WELL GRADED SAND (S		
						coarse, subangular; ~5% gravel, fil	ne to medium, subrounded;	
				0.0	0.0	tan – orange, loose, moist.	VITLL OR AVEL (CM): 000/	
				0.0	0.0	18' – 19' WELL GRADED SAND W sand, fine to medium, subangular;		
						subrounded; tan, loose, wet.	~20% graver, line to medium,	
20' – 25'	12	GP	48	0.0	0.0	20' – 22' WELL GRADED SAND W	VITH GRAVEL (SW): ~80%	
20 20		•		0.0	0.0	sand, fine to medium, subangular;		
						subrounded; tan, loose, wet.	,	
				0.0	0.0	22' - 23' WELL GRADED SAND W		
						sand, fine to coarse, subangular; ~		
				0.0	0.0	subrounded; orange – tan, loose, v		
				0.0	0.0	23' – 24' WELL GRADED SAND (Simedium, subangular; ~5% gravel,		
						tan, loose, wet.	ille to medium, subrounded,	
25' – 30'	13	GP	48	0.0	0.0	25' – 28' WELL GRADED SAND (\$	SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel,		
						tan, loose, moist.		
				0.0	0.0	28' – 29' WELL GRADED SAND W		
						sand, fine to medium, subangular;	~20% gravel, fine to medium,	
30' – 35'	14	GP	60	0.0	0.0	subrounded; tan, loose, wet. 30' – 31' WELL GRADED SAND (\$	CMAN OF OVER A STATE OF THE STA	
30 – 35	14	GP	60	0.0	0.0	coarse, subangular; ~5% gravel, file		
						wet.	ne, subrounded, tan, loose,	
				0.0	0.0	31' – 35' WELL GRADED SAND (S	SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel,		
						tan, loose, wet.		
Sample T	ypes	s:				NOTES:		
						laaaa: -		

SS = Split Spoon HA = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 8' - 10' bgs and 16' - 18' bgs.



Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

By: Christopher Kiernan

Boring No.: EGCMW-01

Sheet <u>1</u> of <u>2</u>

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 4/26/11

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a **Date Completed:** 5/13/11

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

		Soil Sa	ımple	Manarima	Photo-	,	Nat. Grid
Depth (ft.)	No.	Туре	Rec. (inches)	Mercury Vapor (mg/m³)	ionization Detector (ppm)	n	
0' – 1'	1	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~15% gravel, fine; ~5% silt and organic matter; brown, loose, moist.	
1' – 2'	2	НА	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~15% gravel, fine; ~5% silt and organic matter; brown, loose, moist.	
2' – 3'	3	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine; ~5% silt; brown, loose, moist.	
3' – 4'	4	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine; ~5% silt; brown, loose, moist.	
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to coarse, subangular; ~15% gravel, fine to medium; ~5% silt; light brown – orange, loose, moist.	
5' - 6'	6	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to coarse, subangular; ~15% gravel, fine to medium; ~5% silt; light brown – orange, loose, moist.	
6' – 10'	7	GP	24	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~70% sand, fine to medium, subangular; ~30% gravel, fine to coarse; tan – brown, loose, dry.	
10' – 15'	8	GP	60	0.0	0.0	10' – 11' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular; orange – brown, loose, moist. 11' – 14' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subangular;	
				0.0	0.0	orange – tan, loose, moist. 14' – 15' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; brown – orange, loose, moist.	
15' – 20'	9	GP	60	0.0	0.0	15' – 18' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subangular; tan – orange, loose, wet at 18.5' bgs. 18' – 20' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subrounded; brown – orange, loose, wet.	
Sample T SS = Split HA = Han GP = Geo	Spoo	on ger				NOTES: No samples were collected for laboratory analysis.	



Drill Rig: Geoprobe

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA **Date Completed:** 5/13/11

Boring No.: EGCMW-01

Sheet 2 of 2

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Date Star	ted:	4/26/11			Date Comp	oleted: 5/13/11	
	1	Soil Sa			Photo-		Nat
				Mercury			Grid
Depth			Rec.	Vapor	Detector	Sample Description	Cold
(ft.)	No.	Туре	(inches)		(ppm)	·	Inde
20' – 25'	10	GP	60	0.0	0.0	20' - 22' WELL GRADED SAND (SW): ~95% sand, fine to	
						medium, subangular; ~5% gravel, fine, subrounded; tan –	
				0.0	0.0	brown, loose, wet. 22' – 24' WELL GRADED SAND (SW): ~95% sand, fine to	
				0.0	0.0	nedium, subangular; ~5% gravel, medium to coarse,	
						subrounded; tan – brown, loose, wet.	
				0.0	0.0	24' - 25' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
						fine to medium, subangular; ~40% gravel, medium to coarse,	
25' – 30'	11	GP	60	0.0	0.0	subrounded; tan – brown, loose, wet. 25' – 27' WELL GRADED SAND (SW): ~95% sand, fine to	
25 – 50	' '	GF	60	0.0	0.0	medium, subangular; ~5% gravel, medium to coarse,	
						subrounded; tan, loose, wet.	
				0.0	0.0	27' - 30' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
						fine to medium, subangular; ~40% gravel, medium to coarse,	
00' 05'	40	0.0	00	0.0	0.0	subrounded; tan, loose, wet.	
30' – 35'	12	GP	60	0.0	0.0	30' – 34' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded;	
						tan, loose, wet.	
				0.0	0.0	34' - 35' POORLY GRADED SAND (SP): ~100% sand, fine to	
						medium, subangular; tan, loose, wet.	
Sample T	vnes	·SS = 9	ı Split Spoor	า ว		NOTES:	1
HA = Han			Jent Opoul	1		No samples were collected for laboratory analysis.	
A - 1 Idi	iu Au	goi				The samples were considered for laboratory analysis.	

GP = Geoprobe Sampler



Driller: Mike Smith Drill Rig: Geoprobe Date Started: 4/26/11 Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a Date Completed: 5/16/11

Boring No.: EGCMW-02

Sheet <u>1</u> of <u>2</u>

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation: ---**

Boring Diameter: 2"

Date Star	_			1		Dieted: 5/16/11	
		Soil Sa		Mercury	Photo- ionization		Nat. Grid
Depth (ft.)	No.	Туре	Rec. (inches)	Vapor (mg/m ³)	Detector (ppm)	Sample Description	Colo
0' – 1'	1	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~80% sand, fine to medium,	muez
0 – 1	'	11/	12	0.0	0.0	subangular; ~20% gravel, fine; brown, loose, moist.	
1' – 2'	2	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~70% sand, fine to medium,	
						subangular; ~25% gravel, fine; ~5% silt and organic matter;	
01 01			4.0	0.0		brown, loose, moist.	
2' – 3'	3	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine; ~5% silt; brown, loose, moist.	
3' – 4'	4	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium,	
						subangular; ~5% gravel, fine; ~5% silt; brown, loose, moist.	
4' - 5'	5	НА	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~70% sand, fine	
						to coarse, subangular; ~25% gravel, fine to medium; ~5% silt;	
F' C'		110	40	0.0	0.0	light brown – orange, loose, moist. WELL GRADED SAND WITH GRAVEL (SW): ~70% sand, fine	
5' - 6'	6	HA	12	0.0	0.0	to coarse, subangular; ~25% gravel, fine to medium; ~5% silt;	
						light brown – orange, loose, moist.	
6' – 10'	7	GP	24	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to	
						medium, subangular; ~40% fine to coarse gravel, tan – brown,	
						loose, dry.	
10' – 15'	8	GP	60	0.0	0.0	10' – 13' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% fine to coarse gravel, tan –	
						brown, loose, dry.	
				0.0	0.0	13' – 14' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
						fine to medium, subangular; ~40% fine to medium gravel,	
				0.0	0.0	subangular; dark brown, loose, dry. 14' – 15' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
				0.0	0.0	sand, fine to medium, subangular; ~20% gravel, medium to fine,	
						subrounded; tan – brown, loose, moist.	
15' – 20'	9	GP	48	0.0	0.0	15' – 17' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
						sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; tan, loose, moist.	
				0.0	0.0	17' – 19' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
				0.0	0.0	sand, fine to medium, subangular; ~20% gravel, fine to medium,	
						subangular; orange – tan, loose, wet at 19' bgs.	
Sample T	vpes	 ::		<u> </u>		NOTES:	
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-					

SS = Split Spoon **HA** = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

No samples were collected for laboratory analysis.



East Garden City

Sheet 2 of 2

Project Name: National Grid

By: Christopher Kiernan

Boring No.: EGCMW-02

Drilling Contractor: Fenley Nicol/WRS

Geologist: Paul Barusich

Boring Completion Depth: 35' Ground Surface Elevation: ---

Driller: Mike Smith Drill Rig: Geoprobe Date Started: 4/26/11 **Drilling Method:** Vacuum and Geoprobe **Drive Hammer Weight: NA**

Former Stewart Avenue Holder Station

Date Completed: 5/16/11

Boring Diameter: 2"

		;	Soil Sa	mple		Photo-		
					Mercury	ionization		Grid
De	pth			Rec.	Vapor	Detector	Sample Description	Color
(f	t.)	No.	Type	(inches)	(mg/m ³)	(ppm)		Index
	– 25 [°]	10	GP	36	0.0	0.0	20' – 22' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subangular; orange – tan, loose, wet. 22' – 23' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to coarse, subrounded; orange – tan, loose, wet at 19' bgs.	
25'	- 30'	11	GP	60	0.0	0.0	25' – 27' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; tan – brown, loose wet. 27' – 29' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium,	
					0.0	0.0	subrounded; tan – gray, loose, wet. 29' – 30' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; tan – gray, loose wet.	
30'	- 35'	12	GP	48	0.0	0.0	30' – 32' WELL GRADED SAND (SW): ~95% sand, fine to coarse, subangular; ~5% gravel, fine to medium, subangular; tan – gray, loose wet. 32' – 34' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to medium, subrounded; tan – gray, loose, wet.	
_	nala T			l .	l .		NOTES:	1

Sample Types:

SS = Split Spoon

HA = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

NOTES:

No samples were collected for laboratory analysis.



Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Boring Completion Depth: 35'

Ground Surface Elevation: ---

Boring No.: EGCMW-03

By: Christopher Kiernan

Sheet <u>1</u> of <u>2</u>

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 5/11/11

Geologist: Paul Barusich **Drilling Method:** Vacuum and Geoprobe

Drive Hammer Weight: n/a **Date Completed:** 5/26/11

Boring Diameter: 2"

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 8.5' – 10.5' bgs and 15.5' –

		Nat. Grid					
Depth (ft.)	No	Туре	Rec.	Mercury Vapor (mg/m³)	Detector (ppm)	Sample Description Co	
0' – 1'	1	НА	12	0.0	0.0	0" – 1" Bluestone. 1" – 1' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to medium, subrounded; light brown, medium dense, moist.	
1' – 2'	2	НА	12	0.0	0.0	NELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to nedium, subangular; ~40% gravel, fine to medium, subrounded; light brown, medium dense, moist.	
2' – 3'	3	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to coarse, subrounded; light brown – orange, loose, moist.	
3' – 4'	4	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to coarse, subrounded; light brown – orange, loose, moist.	
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to coarse, subrounded; light brown – orange, loose, moist.	
5' - 6'	6	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to medium, subangular; tan, loose, moist.	
6' – 7'	7	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to coarse, subrounded; tan, loose, moist.	
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to coarse, subrounded; tan, loose, moist.	
8' – 10'	9	GP	24	0.0	1.9	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to coarse, subangular; ~20% gravel, fine to medium, subrounded; tan – brown, loose, moist.	
10' – 15'	10	GP	36	0.0	0.0	10' – 11' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to coarse, subangular; ~20% gravel, fine to medium, subrounded; tan – brown, loose, moist. 11' – 13' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to coarse, subangular; ~20% gravel, fine to medium, subrounded; tan – brown, loose, moist.	
Sample T	ypes	<u> </u>				NOTES:	

17.5' bgs.

SS = Split Spoon

HA = Hand Auger **GP** = Geoprobe Sampler



CONSULTING ENGINEERS

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 5/11/11

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA Date Completed: 5/26/11

Boring No.: EGCMW-03

Sheet 2 of 2

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

Date	Star		5/11/11		1		Dieted: 5/26/11	
			Soil Sa	ımple		Photo-		Nat
					Mercury			Grid
De	pth			Rec.	Vapor	Detector	Sample Description	Color
(f	t.)	No.	Type	(inches)	(mg/m ³)	(ppm)		Index
15' -	- 20'	11	GP	60	0.0	0.0	15' - 17' WELL GRADED SAND WITH GRAVEL (SW): ~80%	
							sand, fine to coarse, subangular; ~20% gravel, fine, subrouned;	
							tan – brown, loose, moist.	
					0.0	0.0	17' – 18' WELL GRADED SAND (SW): ~95% sand, fine to	
							medium, subangular; ~5% gravel, fine, subrounded; orange – tan, loose, wet.	
					0.0	0.0	18' – 20' WELL GRADED SAND (SW): ~95% sand, fine to	
					0.0	0.0	medium, subangular; ~5% gravel, fine, subrounded; tan, loose,	
							wet.	
20' -	- 25'	12	GP	48	0.0	0.0	20' - 22' WELL GRADED SAND (SW): ~95% sand, fine to	
							medium, subangular; ~5% gravel, fine, subrounded; tan, loose,	
							wet.	
					0.0	0.0	22' – 24' WELL GRADED GRAVELLY SAND (SW): ~60% sand,	
							fine to coarse, subangular; ~40% gravel, fine, subrounded; tan, loose, wet.	
25' -	20'	13	GP	18	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to medium,	
25 -	- 30	13	GF	10	0.0	0.0	subangular; ~5% gravel, fine, subangular; tan, loose, wet.	
30' -	35'	14	GP	36	0.0	0.0	POORLY GRADED SAND (SP): ~100% sand, fine to medium,	
30 -	- 33	14	GF	30	0.0	0.0	subangular; tan, loose, wet.	
							garan, tan, 1999, ton	
	. =							

VC = Vacuum

Sample Types: SS = Split Spoon

HA = Hand Auger **GP** = Geoprobe Sampler

NOTES

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 8.5' – 10.5' bgs and 15.5' – 17.5' bgs.



Driller: Mike Smith Drill Rig: Geoprobe Date Started: 5/10/11 Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: n/a Date Completed: 5/23/11

Boring No.: EGCMW-05

Sheet <u>1</u> of <u>2</u>

By: Christopher Kiernan

Boring Completion Depth: 35' **Ground Surface Elevation: ---**

Boring Diameter: 2"

Date Star	Soil Sample					pleted: 5/23/11		
		Soil Sa	ımple		Photo-		Nat.	
				Mercury			Grid Colo	
Depth		_	Rec.	Vapor	Detector	Sample Description		
(ft.)	No.		(inches)	(mg/m³)	(ppm)		Index	
0' – 1'	1	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine to medium, subangular; ~15% gravel, fine to medium,		
						subangular; ~5% bluestone; ~5% silt, brown, medium dense,		
						dry.		
1' – 2'	2	HA	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine		
						to medium, subangular; ~20% gravel, fine to medium, subangular; ~5% silt, dark brown, medium dense, moist.		
2' - 3'	3	НА	12	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine		
_				0.0	0.0	to medium, subangular; ~20% gravel, fine to coarse,		
						subrounded; ~5% silt; brown, medium dense, moist.		
3' – 4'	4	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to		
						coarse, subangular; ~40% gravel, fine to coarse, subangular; brown, loose, moist.		
4' – 5'	5	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to		
						coarse, subangular; ~40% gravel, fine to coarse, subrounded;		
						brown, loose, moist.		
5' - 6'	6	НА	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to coarse,		
						subangular; ~5% gravel, fine to medium, subangular; brown,		
01 71	-	110	40	0.0	0.0	loose, moist.		
6' – 7'	7	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to coarse, subangular; ~5% gravel, fine to medium, subangular; brown,		
						loose, moist.		
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~95% sand, fine to coarse,		
						subangular; ~5% gravel, fine to medium, subangular; brown, loose, moist.		
8' – 10'	9	GP	24	0.0	0.0	8' – 9' WELL GRADED SAND WITH GRAVEL (SW): ~75%		
						sand, fine to coarse, subangular; ~20% gravel, fine to medium,		
				0.0	0.0	subrounded; ~5% brick fragments; brown, loose, moist.		
				0.0	0.0	9' – 10' WELL GRADED SAND WITH GRAVEL (SW): ~75% sand, fine to medium, subangular; ~20% gravel, fine to medium,		
						subangular; ~5% brick fragments; brown – tan, loose, moist.		
10' – 15'	10	GP	48	0.0	0.0	10' - 11' WELL GRADED SAND WITH GRAVEL (SW): ~80%		
				0.0	0.0	sand, fine to medium, subangular; ~20% gravel, fine to medium,		
				0.0	0.0	subangular; brown – tan, loose, moist.		
				0.0	0.0	11' – 14' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subrounded; ~20% gravel, fine to		
						medium, subrounded, loose, moist.		
	mple Types:					NOTES:		
SS = Spli						Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide PCBs, and TPHs were collected from 8' – 10' bgs and 15' – 17'		
HA = Hand Auger GP = Geoprobe Sampler PCBs, and TPHs were collected from 8' – 10' bgs and 15' – 17' bgs.								
VC = Vac		o oamp	7101					
. - v u u	J 2111					1		



Drill Rig: Geoprobe

Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA Date Completed: 5/23/11

By: Christopher Kiernan

Boring No.: EGCMW-05

Sheet 2 of 2

Boring Completion Depth: 35' Ground Surface Elevation: ---

Boring Diameter: 2"

Data Star	ate Started: 5/10/11				Data Camir	detect 5/00/44		
Date Star	Soil Sample Merc					leted: 5/23/11		
	Soil Sample Photo-					Nat		
		-		Mercury	ionization			Grid
Depth			Rec.	Vapor	Detector	Sample Desc	ription	Color
(ft.)	No.	Type	(inches)	(mg/m ³)	(ppm)			Index
15' – 20'	11	GP	60	0.0	0.0	15' – 16' WELL GRADED SAND (S' medium, subangular; ~5% gravel, fii tan – brown, loose, moist.	ne to medium, subrounded;	
				0.0	0.0	16' – 17' WELL GRADED SAND (S' medium, subangular; ~5% gravel, fil tan, loose, wet at 17' bgs.	ne to medium, subrounded;	
				0.0	0.0	17' – 20' WELL GRADED SAND WI sand, fine to medium, subangular; ~ subrounded; orange – tan, loose, we	-20% gravel, fine to medium, et.	
20' – 25'	12	GP	36	0.0	0.0	20' – 21' WELL GRADED SAND WI sand, fine to medium, subangular; ~ subrounded; tan, loose, wet.	-20% gravel, fine to medium,	
				0.0	0.0	21' – 23' WELL GRADED SAND (S' medium, subangular; ~5% gravel, fil wet.	ne, subrounded; tan, loose,	
25' – 30'	13	GP	60	0.0	0.0	25' – 27' WELL GRADED SAND WI sand, fine to coarse, subangular; ~2 tan, loose, wet.	20% gravel, fine, subangular;	
				0.0	0.0	27' – 30' WELL GRADED SAND (S' medium, subangular; ~5% gravel, fil wet.	ne, subrounded; tan, loose,	
30' – 35'	14	GP	36	0.0	0.0	WELL GRADED SAND (SW): ~95% subangular; ~5% gravel, fine, subro		
Sample T	vnes	<u> </u>				NOTES:		

Sample Types: SS = Split Spoon

HA = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 8' - 10' bgs and 15' - 17' bgs.



Project No.: 3008

Project Name: National Grid

East Garden City

Former Stewart Avenue Holder Station

Boring Completion Depth: 35'

Ground Surface Elevation: ---

Boring No.: EGCMW-07

By: Christopher Kiernan

Sheet <u>1</u> of <u>2</u>

Boring Diameter: 2"

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith Drill Rig: Geoprobe Date Started: 5/11/11 Geologist: Paul Barusich **Drilling Method:** Vacuum and Geoprobe

Drive Hammer Weight: n/a Date Completed: 5/19/11

Date Star					Date Comp	Dietea: 5/19/11	
	,	Soil Sa	mple	Mercury	Photo- ionization		Nat. Grid
Depth			Rec.	Vapor	Detector	Sample Description	Color
(ft.)	No.	Type	(inches)	(mg/m ³)	(ppm)		Index
0' – 1'	1	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~35% gravel, fine to course, subrounded ~5% silt, dark brown, medium dense, moist.	;
1' – 2'	2	HA	12	0.0	0.0	WELL GRADED SAND (SW): ~90% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; ~5% silt dark brown, medium dense, moist.	
2' – 3'	3	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to medium, subrounded light brown - orange, loose, moist.	
3' – 4'	4	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~35% gravel, fine to coarse, subrounded; ~5% cobbles, subrounded; light brown – orange, loose, moist.	
4' – 5'	5	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~35% gravel, fine to coarse, subrounded; ~5% cobbles, subrounded; light brown – orange, loose, moist.	
5' – 6'	6	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~35% gravel, fine to coarse, subrounded; ~5% cobbles, subrounded; tan, loose, moist.	
6' – 7'	7	НА	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine to coarse, subangular; tan, loose, moist.	
7' – 8'	8	HA	12	0.0	0.0	WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~35% gravel, fine to coarse, subangular; ~5% sand, coarse, subangular; tan, loose, moist.	
8' – 10'	9	GP	24	0.0	0.0	WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to coarse, subangular; brown, loose, moist.	
10' – 15'	10	GP	36	0.0	0.0	10' – 11.5' WELL GRADED SAND WITH GRAVEL (SW): ~80' sand, fine to medium, subangular; ~20% gravel, fine to coarse subangular; brown, loose, moist.	
				0.0	0.0	11.5' – 13' WELL GRADED SAND WITH GRAVEL (SW): ~80' sand, fine to medium, subrounded; ~20% gravel, fine to medium, subrounded; tan – orange, loose, moist.	%
Sample T	ypes	<u>.</u>				NOTES:	

Sample Types: SS = Split Spoon **HA** = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 9.5' - 11.5' bgs and 16' -18' bgs.



Project Name: National Grid

East Garden City

Project No.: 3008

Former Stewart Avenue Holder Station

Boring No.: EGCMW-07 Sheet 2 of 2

By: Christopher Kiernan

Drilling Contractor: Fenley Nicol/WRS

Driller: Mike Smith
Drill Rig: Geoprobe
Date Started: 5/11/11

Geologist: Paul Barusich

Drilling Method: Vacuum and Geoprobe

Drive Hammer Weight: NA **Date Completed:** 5/19/11

Boring Completion Depth: 35' **Ground Surface Elevation:** ---

Boring Diameter: 2"

		Soil Sa	mple		Photo-	·	Nat
_		ı		Mercury	ionization		Grid
Depth	NI.	T	Rec.	Vapor	Detector	Sample Description	Color Index
(ft.)	No.	Type	(inches)	(mg/m³)	(ppm)	462 402 MELL CRADED CRAVELLY CAND (CM), COO/ cond	maex
15' – 20'	11	GP	48	0.0	0.0	15' – 18' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to medium, subangular; ~40% gravel, fine to coarse, subrounded; tan – orange, loose, moist. 18' – 19' WELL GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to medium, subangular; ~20% gravel, fine to medium, subrounded; brown – gray, loose, wet at 18' bgs.	
20' – 25'	12	GP	48	0.0	0.0	20' – 22' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine, subangular; tan – orange, loose, moist. 22' – 23' WELL GRADED GRAVELLY SAND (SW): ~60% sand, fine to coarse, subangular; ~40% gravel, fine, subrounded; tan	
				0.0	0.0	 orange, loose, wet. 23' – 24' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to coarse, subrounded; tan – orange, loose, wet. 	
25' – 30'	13	GP	48	0.0	0.0	25' – 27' WELL GRADED SAND (SW): ~95% sand, fine to medium, subangular; ~5% gravel, fine to medium, subrounded; tan, loose, wet. 27' – 29' WELL GRADED SAND (SW): ~95% sand, fine to	
30' – 35'	14	GP	12	0.0	0.0	medium, subangular; ~5% gravel, fine to coarse, subrounded; tan, loose, wet. WELL GRADED SAND (SW): ~95% sand, fine to medium,	
Committee T						subangular; ~5% gravel, fine to coarse, subrounded; tan, loose, wet.	

Sample Types:

SS = Split Spoon

HA = Hand Auger

GP = Geoprobe Sampler

VC = Vacuum

NOTES:

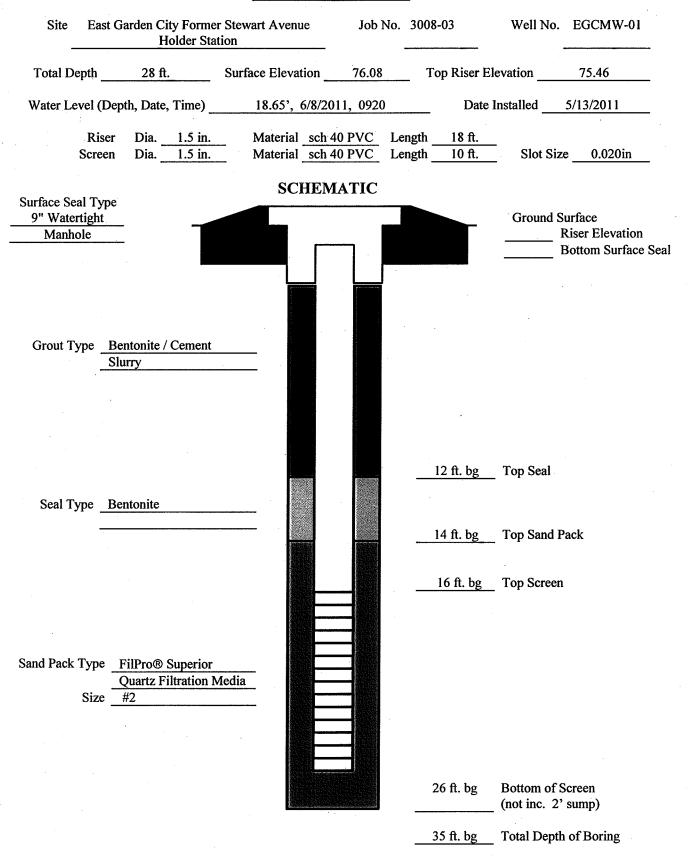
Samples for TCL VOCs, TCL SVOCs, TAL Metals, Total Cyanide, PCBs, and TPHs were collected from 9.5' – 11.5' bgs and 16' – 18' bgs.

APPENDIX E

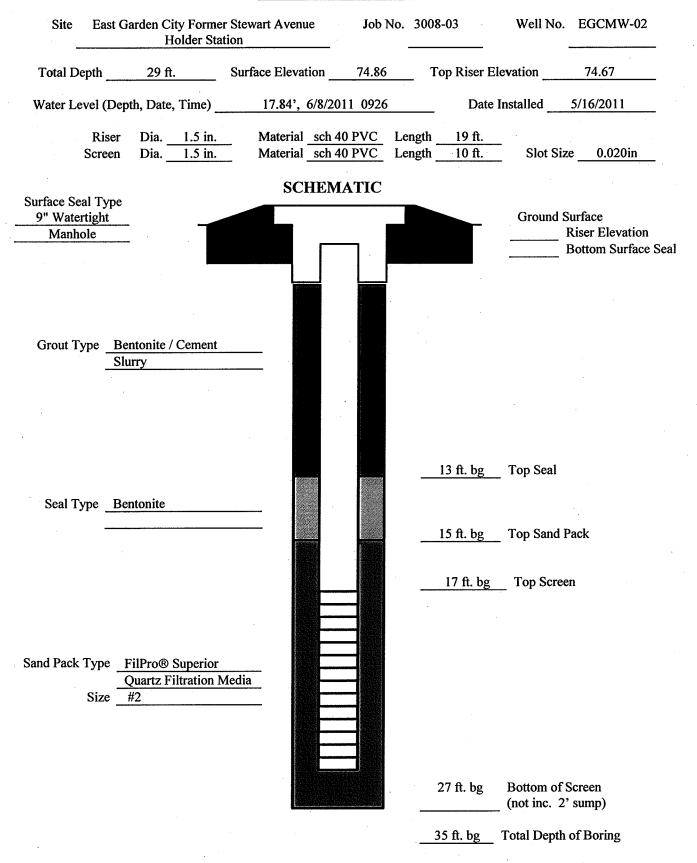
MONITORING WELL CONSTRUCTION LOGS



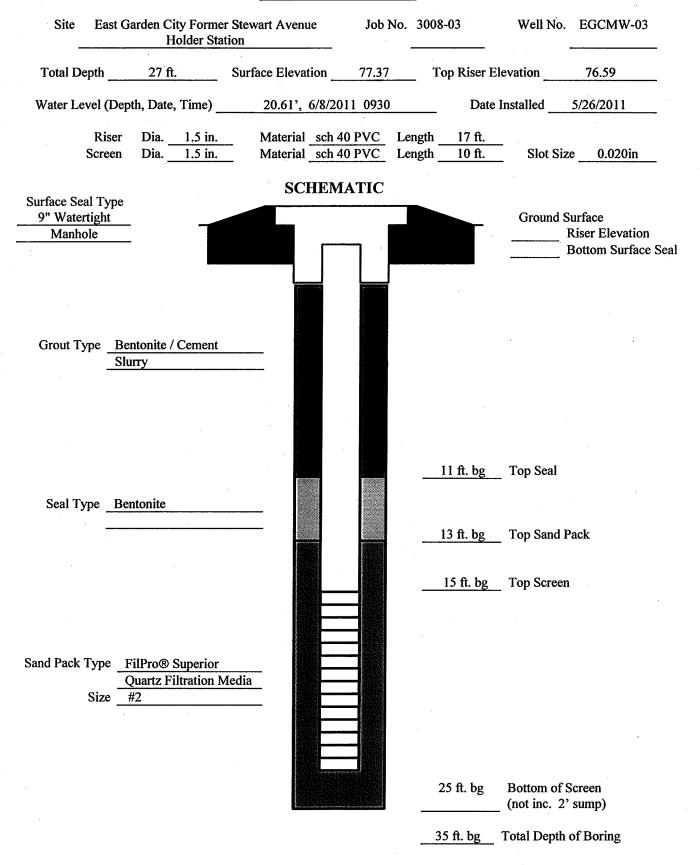




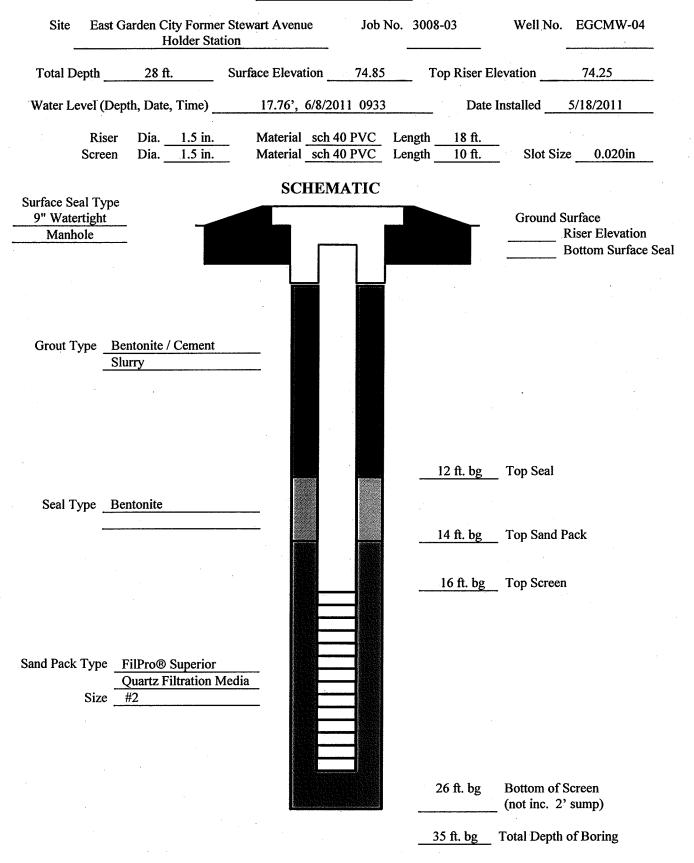




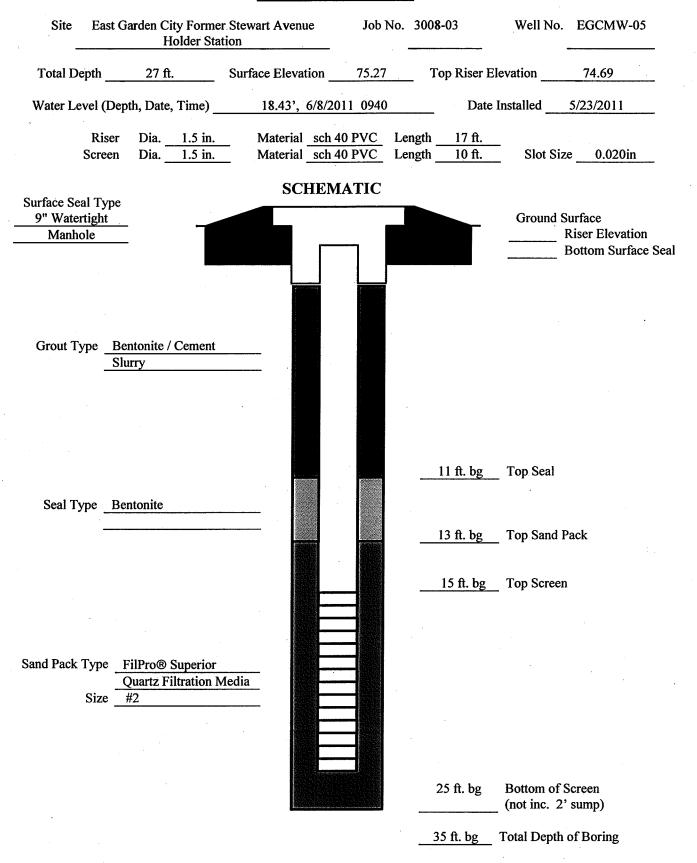




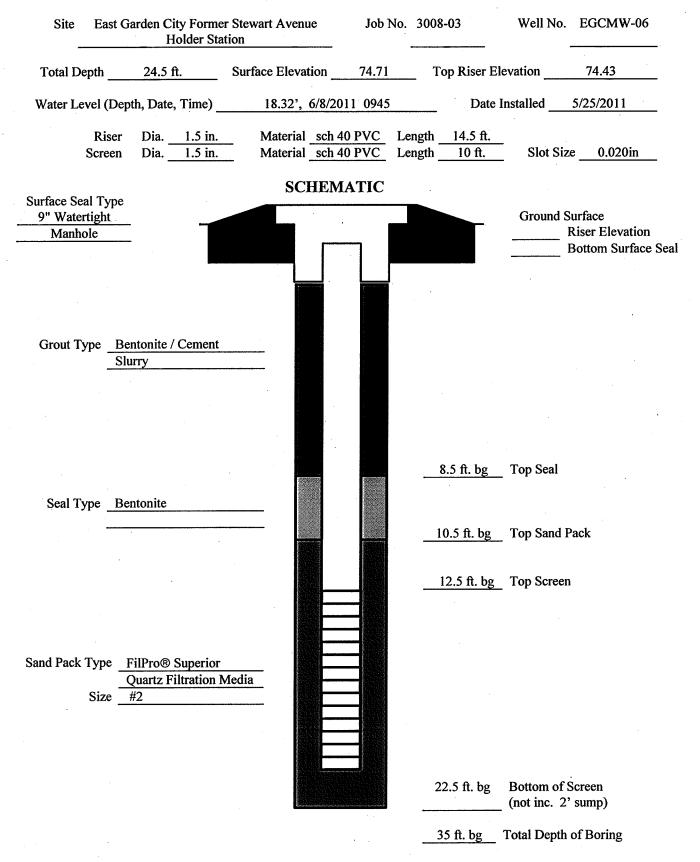




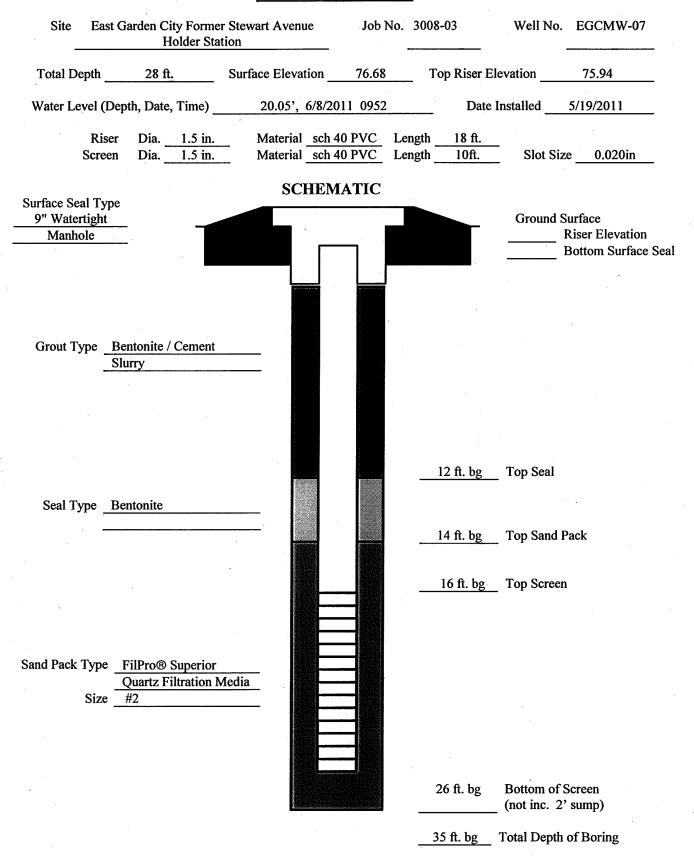












APPENDIX F

CHEMICAL DATA TABLES



TABLE F-1 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION SURFACE SOIL SAMPLE RESULTS

SEMIVOLATILE ORGANIC COMPOUNDS

CONSTITUENT in mg/kg	Sample ID Date Collected	EGCSS-01 4/25/2011	EGCSS-02 4/25/2011	EGCSS-03 4/25/2011	EGCSS-04 4/25/2011	EGCSS-05 4/25/2011	EGCSS-06 4/25/2011	EGCSS-0 4/25/201
	Part 375 Industrial Use Soil Cleanup							
	Objectives							
1,2,4,5-Tetrachlorobenzene		U	UJ	U	U	UJ	U	U
2,3,4,6-Tetrachlorophenol 2,4,5-Trichlorophenol		U U	U U	U U	U	U	U	U
2,4,6-Trichlorophenol		U	U	U	U	U	U	U
2,4-Dichlorophenol		U	UJ	U	U	UJ	U	U
2,4-Dimethylphenol		Ü	UJ	Ü	Ü	UJ	Ü	U
2,4-Dinitrophenol		Ü	U	Ü	Ü	U	Ü	Ü
2,4-Dinitrotoluene		Ü	Ü	Ü	Ü	Ü	Ü	Ü
2,6-Dinitrotoluene		U	U	Ü	U	U	U	U
2-Chloronaphthalene		U	U	U	U	U	U	U
2-Chlorophenol		U	U	U	U	U	U	U
2-Methylnaphthalene		U	UJ	U	U	UJ	U	U
2-Methylphenol (o-Cresol)	1000	U	U	U	U	U	U	U
2-Nitroaniline		U	U	U	U	U	U	U
2-Nitrophenol		U	UJ	U	U	UJ	U	U
3,3'-Dichlorobenzidine		U U	U U	U U	U	U	U U	U
3-Nitroaniline		U	U U	U	U	U	U	U
4,6-Dinitro-2-Methylphenol 4-Bromophenyl Phenyl Ether		U	U	U	U	U	U	U
4-Chloro-3-Methylphenol		U	UJ	U	U	UJ	U	U
4-Chloroaniline		Ü	UJ	Ü	Ü	UJ	Ü	Ü
4-Chlorophenyl Phenyl Ether		Ü	U	Ü	Ü	U	Ü	Ü
4-Nitroaniline		U	U	U	U	U	U	U
4-Nitrophenol		U	U	U	U	U	U	U
Acenaphthene	1000	U	U	U	U	U	U	U
Acenaphthylene	1000	U	U	U	U	U	U	U
Acetophenone		U	U	U	U	U	U	U
Anthracene	1000	U	0.31 J	U	U	U	U	U
Atrazine		U	U	U	U	U	U	U
Benzaldehyde		UJ	UJ	UJ	UJ	UJ	UJ	UJ
Benzo(a)Anthracene	11 1.1	U 0.1 J	1.9	U U	0.26 J 0.3 J	U	0.18 J	0.12 J 0.14 J
Benzo(a)Pyrene Benzo(b)Fluoranthene	11	0.1 J 0.16 J	<u>2.1</u> 3.1	U	0.3 J 0.46 J	0.069 J	0.2 J 0.34 J	0.14 J 0.22 J
Benzo(g,h,i)Perylene	1000	U.10 J	1.1	Ü	0.40 J	U.007 J	0.34 J 0.17 J	0.22 J
Benzo(k)Fluoranthene	110	Ü	1.2	Ü	0.14 J	Ü	0.13 J	0.095 J
Benzyl Butyl Phthalate		Ü	U	Ü	U	Ü	U	U
Biphenyl (Diphenyl)		U	U	U	U	U	U	U
Bis(2-Chloroethoxy) Methane		U	UJ	U	U	UJ	U	U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)		U	U	U	U	U	U	U
Bis(2-Chloroisopropyl) Ether		U	U	U	U	U	U	U
Bis(2-Ethylhexyl) Phthalate		U	0.17 J	U	U	U	0.11 J	U
Caprolactam		U	UJ	U	U	ΩJ	U	U
Carbazole		U	0.3 J	U	U	U	U	U
Chrysene	110	0.12 J	2.5	U	0.35 J	0.067 J	0.26 J	0.15 J
Cresols, m & p	1.1	U U	U 0.29 J	U U	U	U	U U	U
Dibenz(a,h)Anthracene Dibenzofuran	1000	U	0.29 J U	U	U	U	U	U
Diethyl Phthalate		U	U	U	U	U	U	U
Dimethyl Phthalate		Ü	U	Ü	Ü	Ü	Ü	l ü
Di-N-Butyl Phthalate		Ü	Ü	Ü	Ü	Ü	Ü	Ü
Di-N-Octylphthalate		U	U	U	U	U	U	U
Fluoranthene	1000	0.2 J	4	0.13 J	0.54 J	0.1 J	0.39 J	0.23 J
Fluorene	1000	U	U	U	U	U	U	U
Hexachlorobenzene	12	U	U	U	U	U	U	U
Hexachlorobutadiene		U	UJ	U	U	UJ	U	U
Hexachlorocyclopentadiene		U	UJ 	U	U	UJ	U	U
Hexachloroethane		U	U	U	U	U	U	U
Indeno(1,2,3-c,d)Pyrene	11	U	1.1	U	0.21 J	U	0.14 J	U
Isophorone	1000	U U	UJ	U	U	UJ	U	U
Naphthalene Nitrobenzene	1000	U	UJ UJ	U U	U U	UJ UJ	U	U U
Nurobenzene N-Nitrosodi-N-Propylamine		U	U	U	U	U	U	U
N-Nitrosodi-N-Propylamine N-Nitrosodiphenylamine		U	U	U	U	U	U	U
Pentachlorophenol	55	U	U	Ü	U	U	U	l ü
Phenanthrene	1000	U		Ü	0.21 J	0.045 J	0.11 J	l ü
Phenol	1000	Ü	U	Ü	U	U	U	Ü
Pyrene	1000	0.2 J	4.1	0.15 J	0.51 J	0.086 J	0.35 J	0.21 J
								1.28
Total PAHs	1	0.8 0.8	22 22	0.28 0.28	3.2 3.2	0.4 0.4	2.3 2.4	1.28

mg/kg: Milligrams per kilogram U: Not detected

Exceeds Part 375 Industrial Use SCOs

J: Estimated value or limit

^{--:} Not available

TABLE F-1 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION SURFACE SOIL SAMPLE RESULTS

SEMIVOLATILE ORGANIC COMPOUNDS

CONSTITUENT in mg/kg	Sample ID Date Collected	EGCSS-08 4/25/2011	EGCSS-09 4/25/2011	EGCSS-10 4/25/2011	EGCSS-11 4/25/2011	EGCSS-12 4/25/2011	EGCSS-13 4/25/2011
	Part 375 Industrial Use Soil Cleanup						
1 2 4 F T-t	Objectives						
1,2,4,5-Tetrachlorobenzene		U	U	U	U	U	U
2,3,4,6-Tetrachlorophenol 2,4,5-Trichlorophenol		U U	U U	U U	U U	U U	U U
2,4,5-Trichlorophenol		U	U	U	U	U	U
2,4-Dichlorophenol		U	U	U	U	U	U
2,4-Dimethylphenol		Ü	Ü	Ü	Ü	Ü	Ü
2,4-Dinitrophenol		Ü	Ü	Ü	Ü	Ü	Ü
2,4-Dinitrotoluene		U	U	U	U	U	U
2,6-Dinitrotoluene		U	U	U	U	U	U
2-Chloronaphthalene		U	U	U	U	U	U
2-Chlorophenol		U	U	U	U	U	U
2-Methylnaphthalene		U	U	U	U	U	U
2-Methylphenol (o-Cresol)	1000	U	U	U	U	U	U
2-Nitroaniline		U	U	U	U	U	U
2-Nitrophenol		U	U U	U U	U U	U	U
3,3'-Dichlorobenzidine 3-Nitroaniline		U U	U	U	U	U U	U
4,6-Dinitro-2-Methylphenol		U	U	U	U	U	U
4-Bromophenyl Phenyl Ether		U	U	U	U	U	U
4-Chloro-3-Methylphenol		Ü	Ü	Ü	Ü	Ü	U
4-Chloroaniline		Ü	Ü	Ü	Ü	Ü	Ü
4-Chlorophenyl Phenyl Ether		U	U	U	U	U	U
4-Nitroaniline		U	U	U	U	U	U
4-Nitrophenol		U	U	U	U	U	U
Acenaphthene	1000	U	U	U	U	U	U
Acenaphthylene	1000	U	U	U	U	U	U
Acetophenone		U	U	U	U	U	U
Anthracene	1000	U	0.09 J	U	U	U	U
Atrazine		U	U	U	U	U	U
Benzaldehyde	 11	UJ 0.13 J	UJ 0.28 J	UJ 0.16 J	UJ 0.092 J	UJ U	UJ 0.16 J
Benzo(a)Anthracene Benzo(a)Pyrene	1.1	0.13 J 0.16 J	0.28 J 0.23 J	0.16 J 0.14 J	0.092 J 0.1 J	U	0.16 J 0.17 J
Benzo(b)Fluoranthene	11	0.10 J 0.29 J	0.23 J	0.14 J 0.21 J	0.1 J	U	0.17 J
Benzo(g,h,i)Perylene	1000	0.14 J	0.18 J	0.094 J	0.088 J	Ü	0.14 J
Benzo(k)Fluoranthene	110	0.1 J	0.13 J	0.096 J	U	Ü	U
Benzyl Butyl Phthalate		U	U	U	U	U	U
Biphenyl (Diphenyl)		U	U	U	U	U	U
Bis(2-Chloroethoxy) Methane		U	U	U	U	U	U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)		U	U	U	U	U	U
Bis(2-Chloroisopropyl) Ether		U	U	U	U	U	U
Bis(2-Ethylhexyl) Phthalate		U	0.18 J	U	U	U	0.091 J
Caprolactam		U	U	U	U	U	U
Carbazole	110	U	U	U	U	U	U
Chrysene Cresols, m & p		0.22 J U	0.33 J U	0.22 J U	0.13 J U	U U	0.23 J U
Dibenz(a,h)Anthracene	1.1	U	U	U	U	U	U
Dibenzofuran	1000	Ü	IJ	Ü	Ü	Ü	IJ
Diethyl Phthalate		Ü	Ü	Ü	Ü	Ü	Ü
Dimethyl Phthalate		U	U	U	U	U	U
Di-N-Butyl Phthalate		U	U	U	U	U	U
Di-N-Octylphthalate		U	U	U	U	U	U
Fluoranthene	1000	0.35 J	0.55 J	0.49 J	0.18 J	0.054 J	0.33 J
Fluorene	1000	U	U	U	U	U	U
Hexachlorobenzene	12	U	U	U	U	U	U
Hexachlorobutadiene		U	U	U	U	U	U
Hexachlorocyclopentadiene		U	U	U	U	U	U
Hexachloroethane Indeno(1,2,3-c,d)Pyrene	 11	U 0.11 J	U 0.15 J	U U	U U	U U	U 0.11 J
Isophorone		U.11 J	U. 15 J	U	U	U	U.113
Naphthalene	1000	U	U	U	Ü	U	U
Nitrobenzene		U	U	Ü	U	U	U
N-Nitrosodi-N-Propylamine		Ü	Ü	U	Ü	Ü	Ü
N-Nitrosodiphenylamine		U	U	U	U	U	U
Pentachlorophenol	55	U	U	U	U	U	U
Phenanthrene	1000	0.11 J	0.51 J	0.42 J	U	U	0.15 J
Phenol	1000	U	U	U	U	U	U
Pyrene	1000	0.31 J	0.42 J	0.39 J	0.18 J	0.043 J	0.35 J
Total PAHs		1.9	3.20	2.22	0.9	0.097	1.90
Total SVOCs		1.9	3.38	2.22	0.9	0.097	1.99

mg/kg: Milligrams per kilogram U: Not detected

Exceeds Part 375 Industrial Use SCOs

J: Estimated value or limit

^{--:} Not available

TABLE F-2 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION SURFACE SOIL SAMPLE RESULTS TARGET ANALYTE LIST (TAL) METALS + CYANIDE

	1		1	l				l	1	l	l			
CONSTITUENT	Sample ID	EGCSS-01	EGCSS-02	EGCSS-03	EGCSS-04	EGCSS-05	EGCSS-06	EGCSS-07	EGCSS-08	EGCSS-09	EGCSS-10	EGCSS-11	EGCSS-12	EGCSS-13
in mg/kg	Date Collected	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011
V	Part 375 Industrial Use Soil Cleanup Objectives													
Aluminum		4,850	10,700	9,970	4,370	1,340	2,270	6,740	630	3,170	6,010	2,070	1,180	3,920
Antimony		0.517 J	1.94 J	1.97 J	U	U	30.5	2.64	U	0.78 J	0.66 J	0.422 J	U	0.545 J
Arsenic	16	4.74	13.2	11.6	2.89	1.31	4.85	3.52	1.18	3.34	3.73	1.3	0.499 J	3.96
Barium	10,000	23.7	57.5	58.7	21.7	5.99	41.1	38	4.97	16.3	17.9	8.03	4.21 J	19.1
Beryllium	2,700	0.237 J	0.431	0.928	0.282	0.067 J	0.237 J	0.368	0.068 J	0.252	0.304	0.132 J	0.08 J	0.229 J
Cadmium	60	0.182 J	4.51	1.29	0.153 J	U	0.873	0.83	0.083 J	0.151 J	0.071 J	0.12 J	U	0.071 J
Calcium		2260	3,020	2,090	10,800	401	84,300	14,800	12,600	43,400	897	452	198	3240
Chromium, Total	800	8.97	28.3	30.8	8.25	4.62	12.5	9.79	2.66	7.36 J	11.2 J	5.79 J	2.55 J	6.14 J
Cobalt		2.46	4.68	6.67	3.01	1.27	2.44	4.7	0.534 J	3.29	3.29	1.93	0.905 J	2.67
Copper	10,000	17.2	35.3	110	13.7	3.87	74.9	61.4	5.74	16.9	29.5	18.5	3.02	13.7
Iron		7,430	14,800	17,100	8,930	3,140	7,070	10,800	1,880	7,940	9,970	5,040	2,080	8,920
Lead	3,900	47.7	168	346	33.8	4.85	821	128	19.2	36	20.4	21.7	2.24	15.1
Magnesium		1,320	1,440	1,410	5,070	448	48,600	8,110	7,160	25,600	1,060	428	274	2,160
Manganese	10,000	109 J	281 J	224 J	127 J	49.6 J	108 J	157 J	29.4 J	107	123	69.6	43.8	134
Mercury	5.7	0.243	1.99 D	0.418	0.418	0.008 J	0.106	0.25	0.066	1.3 J	0.104 J	0.239 J	0.045 J	0.225 J
Nickel	10,000	5.51	14	18.3	5.9	2.5	8.68	10	1.42 J	6.92	6.1	2.91	1.52 J	6.24
Potassium		238	482	505	319	113	264	330	54.9 J	418	288	151	82.4 J	267
Selenium	6,800	0.474 J	0.997 J	1.24	0.679 J	0.45 J	U	0.437 J	U	U	0.607 J	U	U	0.439 J
Silver	6,800	U	U	U	U	U	0.322 J	U	U	U	U	U	U	U
Sodium		192 J	218 J	296 J	299 J	77 J	181 J	142 J	115 J	200 J	181 J	119 J	134 J	192 J
Thallium		U	U	U	U	U	U	U	U	U	U	U	U	U
Vanadium		11	24.7	22.3	13.5	4.29	14.9	17.3	2.72	10.3	12.8	8.07	3.49	10.5
Zinc	10,000	56.7	448	835	41.6	40.3	255	357	26	41.8	58.6	26.7	14.4	44
Cyanide	10,000	U	0.383	U	U	U	U	U	0.433	0.489	0.494	U	U	1.09

- mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit D: Detected at a secondary dilution --: Not available

TABLE F-3 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION SURFACE SOIL SAMPLE RESULTS POLYCHLORINATED BIPHENYLS (PCBs)

CONSTITUENT	Sample ID		EGCSS-02 4/25/2011	EGCSS-03 4/25/2011	EGCSS-04 4/25/2011	EGCSS-05 4/25/2011	EGCSS-06 4/25/2011	EGCSS-07 4/25/2011	EGCSS-08 4/25/2011	EGCSS-09 4/25/2011	EGCSS-10 4/25/2011	EGCSS-11 4/25/2011	EGCSS-12 4/25/2011	EGCSS-13 4/25/2011
in mg/kg	Date Collected													
	Part 375 Industrial Use Soil Cleanup Objectives													
PCB-1016 (Aroclor 1016)	25	U	U	UJ	U	U	U	U	U	U	U	U	U	U
PCB-1221 (Aroclor 1221)	25	U	U	UJ	U	U	U	U	U	U	U	U	U	U
PCB-1232 (Aroclor 1232)	25	U	U	UJ	U	U	U	U	U	U	U	U	U	U
PCB-1242 (Aroclor 1242)	25	U	U	UJ	U	U	U	U	U	U	U	U	U	U
PCB-1248 (Aroclor 1248)	25	U	U	UJ	U	U	U	U	U	U	U	U	U	U
PCB-1254 (Aroclor 1254)	25	U	U	UJ	U	U	U	U	U	U	U	U	U	U
PCB-1260 (Aroclor 1260)	25	U	U	UJ	U	U	0.46	0.04 J	U	U	U	U	0.012 J	U
PCB-1262 (Aroclor 1262)	25	U	U	UJ	U	U	U	U	U	U	U	U	U	U
PCB-1268 (Aroclor 1268)	25	U	U	UJ	U	U	U	U	U	U	U	U	U	U
Total PCBs	25	0	0	0	0	0	0.46	0.04	0	0	0	0	0.012	0

mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit

TABLE E-4 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION SURFACE SOIL SAMPLE RESULTS TOTAL PETROLEUM HYDROCARBONS (TPHs)

CONSTITUENT	Sample ID	EGCSS-01	EGCSS-02	EGCSS-03	EGCSS-04	EGCSS-05	EGCSS-06	EGCSS-07	EGCSS-08	EGCSS-09	EGCSS-10	EGCSS-11	EGCSS-12	EGCSS-13
in mg/kg	Date Collected	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011	4/25/2011
Total Petroleum Hydrocarbons		23	100	22 J	58 J	13	32	19	41	4,617	27	25	9	55 J

mg/kg: Milligrams per kilogram J: Estimated value or limit

TABLE F-5 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION FOUNDATION DISTRIBUTION PIPE SAMPLE RESULTS VOLATILE ORGANIC COMPOUNDS

	Sample ID	EGCHFD-01
9	Start Depth (feet)	0
CONSTITUENT	End Depth (feet)	1
in mg/kg	Date Collected	4/27/2011
	Part 375	
	Industrial Use	
	Soil Cleanup	
	Objectives	
1,1,1-Trichloroethane	1000	U
1,1,2,2-Tetrachloroethane		U
1,1,2-Trichloro-1,2,2-Trifluoroethane		U
1,1,2-Trichloroethane		U
1,1-Dichloroethane	480	U
1,1-Dichloroethene	1000	U
1,2,3-Trichlorobenzene		U
1,2,4-Trichlorobenzene		U
1,2-Dibromo-3-Chloropropane		U
1,2-Dibromoethane (Ethylene Dibromide)		U
1,2-Dichlorobenzene	1000	U
1,2-Dichloroethane	60	U
1,2-Dichloropropane		U
1,3-Dichlorobenzene	560	U
1,4-Dichlorobenzene	250	U
1,4-Dioxane (P-Dioxane)	250	U
2-Hexanone		U
Acetone	1000	0.033
Benzene	89	0.047
Bromochloromethane		UJ
Bromodichloromethane		U
Bromoform Bromomethane		U U
Carbon Disulfide		U
Carbon Tetrachloride	44	U
Chlorobenzene	1000	U
Chloroethane		Ü
Chloroform	700	Ü
Chloromethane		Ü
Cis-1,2-Dichloroethylene	1000	Ü
Cis-1,3-Dichloropropene		U
Cyclohexane		0.02
Dibromochloromethane		U
Dichlorodifluoromethane		U
Ethylbenzene	780	0.012
Isopropylbenzene (Cumene)		0.002 J
M,P-Xylene (Sum Of Isomers)		0.057
Methyl Acetate		U
Methyl Ethyl Ketone (2-Butanone)	1000	U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)		U
Methylcyclohexane		0.035
Methylene Chloride	1000	U
o-Xylene (1,2-Dimethylbenzene)	1000	0.035
Styrene		0.064
Tert-Butyl Methyl Ether	1000	U
Tetrachloroethylene(PCE)	300	U
Toluene	1000	0.073
Trans-1,2-Dichloroethene	1000	U
Trans-1,3-Dichloropropene		U
Trichloroethylene (TCE)	400	0.0018 J
Trichlorofluoromethane		U
Vinyl Chloride	27	U
Total BTEX		0.22
Total VOCs		0.38

mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit --: Not available

TABLE F-6 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION FOUNDATION DISTRIBUTION PIPE SAMPLE RESULTS SEMIVOLATILE ORGANIC COMPOUNDS

CONSTITUENT	Sample ID Start Depth (feet)	
CONSTITUENT	End Depth (feet)	1
in mg/kg	Date Collected Part 375	4/27/2011
	Industrial Use Soil Cleanup Objectives	
1,2,4,5-Tetrachlorobenzene		U
2,3,4,6-Tetrachlorophenol		U
2,4,5-Trichlorophenol		U
2,4,6-Trichlorophenol		U
2,4-Dichlorophenol		U
2,4-Dimethylphenol		U
2,4-Dinitrophenol 2,4-Dinitrotoluene		U U
2,4-Dilittotoluerie 2,6-Dinitrotoluene		U
2-Chloronaphthalene		U
2-Chlorophenol		Ü
2-Methylnaphthalene		330
2-Methylphenol (o-Cresol)	1000	U
2-Nitroaniline		U
2-Nitrophenol		U
3,3'-Dichlorobenzidine		U
3-Nitroaniline		U
4,6-Dinitro-2-Methylphenol 4-Bromophenyl Phenyl Ether		U U
4-Bromophenyi Phenyi Ether 4-Chloro-3-Methylphenol		U
4-Chloroaniline		U
4-Chlorophenyl Phenyl Ether		U
4-Nitroaniline		U
4-Nitrophenol		U
Acenaphthene	1000	50 J
Acenaphthylene	1000	120
Acetophenone		U
Anthracene	1000	240
Atrazine Popzaldobydo		U U
Benzaldehyde Benzo(a)Anthracene	 11	<u>200</u>
Benzo(a)Pyrene	1.1	<u>200</u> <u>130</u>
Benzo(b)Fluoranthene	11	<u>100</u> 100
Benzo(g,h,i)Perylene	1000	50 J
Benzo(k)Fluoranthene	110	31 J
Benzyl Butyl Phthalate		U
Biphenyl (Diphenyl)		55 J
Bis(2-Chloroethoxy) Methane		U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)		U
Bis(2-Chloroisopropyl) Ether Bis(2-Ethylhexyl) Phthalate		U U
Caprolactam		U
Carbazole		U
Chrysene	110	200
Cresols, m & p		<u>200</u> U
Dibenz(a,h)Anthracene	1.1	<u>14</u> <u>J</u>
Dibenzofuran	1000	29 J
Diethyl Phthalate		U
Dimethyl Phthalate		U
Di-N-Butyl Phthalate		U
Di-N-Octylphthalate		U
Fluoranthene	1000	290
Fluorene Hexachlorobenzene	1000 12	280 U
Hexachlorobutadiene		U
Hexachlorocyclopentadiene		U
Hexachloroethane		Ü
Indeno(1,2,3-c,d)Pyrene	11	<u>37</u> <u>J</u>
Isophorone		U
Naphthalene	1000	85
Nitrobenzene		U
N-Nitrosodi-N-Propylamine		U
N-Nitrosodiphenylamine		U
Pentachlorophenol Phenanthrene	55 1000	2000 D.I
Phenanthrene Phenol	1000 1000	<u>2000</u> <u>DJ</u> U
Pnenoi Pyrene	1000	550
, ,	1000	330
Total PAHs		4,292

mg/kg: Milligrams per kilogram
U: Not detected
J: Estimated value or limit
D: Detected at a secondary dilution
--: Not available
Exceeds Part 375 Industrial Use SCOs

TABLE F-7 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION FOUNDATION DISTRIBUTION PIPE SAMPLE RESULTS TARGET ANALYTE LIST (TAL) METALS + CYANIDE

	Sample ID	EGCHFD-01
	Start Depth (feet)	0
CONSTITUENT	End Depth (feet)	1
in mg/kg	Date Collected	4/27/2011
	Part 375	
	Industrial Use	
	Soil Cleanup	
	Objectives	
Aluminum		5,100
Antimony		0.531 J
Arsenic	16	6.33
Barium	10,000	26.5
Beryllium	2,700	0.269
Cadmium	60	0.142 J
Calcium		216
Chromium, Total	800	8.33
Cobalt		1.65
Copper	10,000	6.41
Iron		6,720
Lead	3,900	60.7
Magnesium		543
Manganese	10,000	39
Mercury	5.7	0.137
Nickel	10,000	4.1
Potassium		277
Selenium	6,800	0.632 J
Silver	6,800	U
Sodium		210
Thallium		U
Vanadium		11
Zinc	10,000	33.3
Cyanide	10,000	8.03

mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit --: Not available

TABLE F-8 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION FOUNDATION DISTRIBUTION PIPE SAMPLE RESULTS POLYCHLORINATED BIPHENYLS (PCBS)

-		
	Sample ID	EGCHFD-01
	Start Depth (feet)	0
CONSTITUENT	End Depth (feet)	1
in mg/kg	Date Collected	4/27/2011
	Part 375 Industrial Use	
	Soil Cleanup Objectives	
PCB-1016 (Aroclor 1016)	25	U
PCB-1221 (Aroclor 1221)	25	U
PCB-1232 (Aroclor 1232)	25	U
PCB-1242 (Aroclor 1242)	25	U
PCB-1248 (Aroclor 1248)	25	U
PCB-1254 (Aroclor 1254)	25	U
PCB-1260 (Aroclor 1260)	25	U
PCB-1262 (Aroclor 1262)	25	U
PCB-1268 (Aroclor 1268)	25	U
Total PCBs	25	0

mg/kg: Milligrams per kilogram U: Not detected

TABLE F-9 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION FOUNDATION DISTRIBUTION PIPE SAMPLE RESULTS TOTAL PETROLEUM HYDROCARBONS (TPHs)

	Sample ID	EGCHFD-01
	Start Depth (feet)	0
CONSTITUENT	End Depth (feet)	1
in mg/kg	Date Collected	4/27/2011
Total Petroleum Hydrocarbons		4,042

mg/kg: Milligrams per kilogram

	Sample ID	EGCMW-03	EGCMW-03	EGCMW-05	EGCMW-05	EGCMW-07	EGCMW-07	EGCSB-01	EGCSB-01
	Start Depth (feet)	15.5	8.5	8	15	9.5	16	8	18
CONSTITUENT	End Depth (feet)	17.5	10.5	10	17	11.5	18	10	20
in mg/kg	Date Collected	5/26/2011	5/26/2011	5/23/2011	5/23/2011	5/19/2011	5/19/2011	5/17/2011	5/17/2011
	Part 375								
	Industrial Use								
	Soil Cleanup								
	Objectives								
1,1,1-Trichloroethane	1000	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane		U	U	U	U	U	U	U	U
1,1,2-Trichloro-1,2,2-Trifluoroethane		U	U	U	U	U	U	U	U
1,1,2-Trichloroethane		U	U	U	U	U	U	U	U
1,1-Dichloroethane	480	U	U	U	U	U	U	U	U
1,1-Dichloroethene	1000	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene		U	U	U	U	U	U	U	U
1,2,4-Trichlorobenzene		U	U	U	U	U	U	U	U
1,2-Dibromo-3-Chloropropane		U	U	U	U	U	U	U	U
1,2-Dibromoethane (Ethylene Dibromide)		U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	1000	U	U	U	U	U	U	U	U
1,2-Dichloroethane	60	U	U	U	U	U	U	U	U
1,2-Dichloropropane		U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	560	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene 1,4-Dioxane (P-Dioxane)	250 250	U U							
	250	U	U	U	U	U	U	U	U
2-Hexanone		U	U	U	U	U	U	U	U
Acetone Benzene	1000 89	U	U	U	U	U	U	U	U
Bromochloromethane	89	U	U	U	U	U	U	U	U
Bromodichloromethane		U	U	U	U	U	U	U	U
Bromoform		U	U	U	U	U	U	U	U
Bromomethane		U	U	U	U	U	U	U	U
Carbon Disulfide		Ü	U	Ü	Ü	Ü	Ü	Ü	Ü
Carbon Tetrachloride	44	U	Ü	U	Ü	U	U	U	Ü
Chlorobenzene	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Chloroethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Chloroform	700	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Chloromethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Cis-1,2-Dichloroethylene	1000	Ü	Ü	Ū	Ü	Ü	Ü	Ü	Ü
Cis-1,3-Dichloropropene		U	Ü	U	U	U	U	U	Ü
Cyclohexane		Ü	Ū	Ū	Ü	Ü	Ü	Ū	Ū
Dibromochloromethane		U	U	U	U	U	U	U	U
Dichlorodifluoromethane		U	U	U	U	U	U	U	U
Ethylbenzene	780	U	U	U	U	U	U	U	U
Isopropylbenzene (Cumene)		U	U	U	U	U	U	U	U
M,P-Xylene (Sum Of Isomers)		U	U	U	U	U	U	U	U
Methyl Acetate		U	U	U	U	U	U	U	U
Methyl Ethyl Ketone (2-Butanone)	1000	U	U	U	U	U	U	U	U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone		U	U	U	U	U	U	U	U
Methylcyclohexane		U	U	U	U	U	U	U	U
Methylene Chloride	1000	U	0.089	0.043	0.032	U	U	U	0.038 J
o-Xylene (1,2-Dimethylbenzene)	1000	U	U	U	U	U	U	U	U
Styrene		U	U	U	U	U	U	U	U
Tert-Butyl Methyl Ether	1000	U	U	U	U	U	U	U	U
Tetrachloroethylene(PCE)	300	U	U	U	U	U	U	U	U
Toluene	1000	U	U	U	U	U	U	U	U
Trans-1,2-Dichloroethene	1000	U	U	U	U	U	U	U	U
Trans-1,3-Dichloropropene		U	U	U	U	U	U	U	U
Trichloroethylene (TCE)	400	U	U	U	U	U	U	U	U
Trichlorofluoromethane		U	U	U	U	U	U	U	U
Vinyl Chloride	27	U	U	U	U	U	U	U	U
Total BTEX		0	0	0	0	0	0	0	0
Total VOCs		0	0.089	0.043	0.032	0	0	0	0.038

mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit B: Detected in associated blank --: Not available

	Sample ID	EGCSB-02	EGCSB-02	EGCSB-03	EGCSB-03	EGCSB-04	EGCSB-04	EGCSB-05	EGCSB-05
	Start Depth (feet)	9	15.5	14	23	12	14	12	14
CONSTITUENT	End Depth (feet)	11	17.5	16	25	14	16	14	16
in mg/kg	Date Collected	5/18/2011	5/18/2011	5/12/2011	5/12/2011	5/12/2011	5/12/2011	5/13/2011	5/13/2011
	Part 375							0, 10, 2011	
	Industrial Use								
	Soil Cleanup								
	Objectives								
1.1.1-Trichloroethane	1000	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,1,2-Trichloro-1,2,2-Trifluoroethane		Ü	Ü	Ü	Ü	Ü	Ū	Ū	Ü
1,1,2-Trichloroethane		Ü	Ü	Ü	Ü	Ü	Ü	Ū	Ü
1,1-Dichloroethane	480	Ü	Ü	Ü	Ü	Ü	Ü	Ū	Ü
1,1-Dichloroethene	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,2,3-Trichlorobenzene		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,2,4-Trichlorobenzene		Ü	Ü	Ü	Ü	Ü	Ü	Ū	Ü
1,2-Dibromo-3-Chloropropane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,2-Dibromoethane (Ethylene Dibromide)		Ü	Ü	Ü	Ü	Ü	Ū	Ū	Ü
1,2-Dichlorobenzene	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ū	Ü
1,2-Dichloroethane	60	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,2-Dichloropropane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,3-Dichlorobenzene	560	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,4-Dichlorobenzene	250	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,4-Dioxane (P-Dioxane)	250	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
2-Hexanone		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Acetone	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Benzene	89	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Bromochloromethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Bromodichloromethane		U	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Bromoform		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Bromomethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Carbon Disulfide		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Carbon Tetrachloride	44	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Chlorobenzene	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Chloroethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Chloroform	700	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Chloromethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Cis-1,2-Dichloroethylene	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Cis-1,3-Dichloropropene		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Cyclohexane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Dibromochloromethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Dichlorodifluoromethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Ethylbenzene	780	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Isopropylbenzene (Cumene)		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
M,P-Xylene (Sum Of Isomers)		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Methyl Acetate		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Methyl Ethyl Ketone (2-Butanone)	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Methylcyclohexane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Methylene Chloride	1000	0.0032 J	0.0034 J	0.0033 J	0.0023 J	Ü	Ü	0.0016 J	0.0027 J
o-Xylene (1,2-Dimethylbenzene)	1000	U U	U.0034 3	U	U.0023 3	Ü	Ü	U	U.0027 J
Styrene		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Tert-Butyl Methyl Ether	1000	Ü	Ü	Ü	Ü	U	U	Ü	Ü
Tetrachloroethylene(PCE)	300	U	Ü	Ü	Ü	U	Ü	l ü	0.009
Toluene	1000	U	Ü	Ü	Ü	U	U	Ü	U.004
Trans-1,2-Dichloroethene	1000	U	Ü	Ü	Ü	U	U	Ü	Ü
Trans-1,3-Dichloropropene		U	Ü	Ü	Ü	U	Ü	l ü	Ü
Trichloroethylene (TCE)	400	U	U	Ü	Ü	U	Ü	l ü	Ü
Trichlorofluoromethane		U	U	Ü	Ü	U	U	Ü	U
Vinyl Chloride	27	U	U	U	U	U	U	U	U
Total BTEX		0	0	0	0	0	0	0	0
Total VOCs		0.0032	0.0034	0.0033	0.0023	0	0	0.0016	0.0117
Total VOGS		0.0032	0.0034	0.0033	0.0023	U	U	0.0010	0.0117

mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit B: Detected in associated blank --: Not available

	Sample ID	EGCSB-07	EGCSB-07	EGCSB-08	EGCSB-08	EGCSB-09	EGCSB-09	EGCSB-10	EGCSB-10
	Start Depth (feet)	10	14.5	8	15	8	15	8	17.5
CONSTITUENT	End Depth (feet)	12	16.5	10	17	10	17	10	19.5
in mg/kg	Date Collected	5/13/2011	5/13/2011	5/20/2011	5/20/2011	5/20/2011	5/20/2011	5/17/2011	5/17/2011
	Part 375								
	Industrial Use								
	Soil Cleanup								
	Objectives								
1,1,1-Trichloroethane	1000	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane		U	U	U	U	U	U	U	U
1,1,2-Trichloro-1,2,2-Trifluoroethane		U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	 480	U U							
1,1-Dichloroethane 1,1-Dichloroethene	1000	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	1000	U	U	U	U	U	U	U	U
1,2,4-Trichlorobenzene		U	U	U	U	U	U	IJ	U
1,2-Dibromo-3-Chloropropane		U	l ü	Ü	Ü	Ü	l ŭ	Ü	l ü
1,2-Dibromoethane (Ethylene Dibromide)		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,2-Dichlorobenzene	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,2-Dichloroethane	60	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,2-Dichloropropane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,3-Dichlorobenzene	560	Ü	Ü	Ü	Ü	Ü	Ü	Ū	Ū
1,4-Dichlorobenzene	250	U	U	U	U	U	U	U	U
1,4-Dioxane (P-Dioxane)	250	U	U	U	U	U	U	U	U
2-Hexanone		U	U	U	U	U	U	U	U
Acetone	1000	U	U	U	U	U	U	U	U
Benzene	89	U	U	U	U	U	U	U	U
Bromochloromethane		U	U	U	U	U	U	U	U
Bromodichloromethane		U	U	U	U	U	U	U	U
Bromoform		U	U	U	U	U	U	U	U
Bromomethane		U	U	U	U	U	U	U	U
Carbon Disulfide		U	U	U	U	U	U	U	U
Carbon Tetrachloride	44	U	U	U	U	U	U	U	U
Chlorobenzene	1000	U	U	U	U	U	U	U	U
Chloroethane Chloroform	700	U U							
Chloromethane	700	U	U	U	U	U	U	IJ	U
Cis-1,2-Dichloroethylene	1000	U	U	Ü	U	U	U	l ü	U
Cis-1,3-Dichloropropene		Ü	Ü	Ü	U	U	Ü	Ü	Ü
Cyclohexane		Ü	Ŭ	Ŭ	Ŭ	Ŭ	Ŭ	Ū	Ιΰ
Dibromochloromethane		U	Ü	Ü	U	Ü	Ü	Ü	Ü
Dichlorodifluoromethane		U	U	U	U	U	U	U	U
Ethylbenzene	780	U	U	U	U	U	U	U	U
Isopropylbenzene (Cumene)		U	U	U	U	U	U	U	U
M,P-Xylene (Sum Of Isomers)		U	U	U	U	U	U	U	U
Methyl Acetate		U	U	U	U	U	U	U	U
Methyl Ethyl Ketone (2-Butanone)	1000	U	U	U	U	U	U	U	U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanon	-	U	U	U	U	U	U	U	U
Methylcyclohexane		U	U	U	U	U	U	U	U
Methylene Chloride	1000	0.0029 J	U	U	U	U	U	0.04 J	0.032 J
o-Xylene (1,2-Dimethylbenzene)	1000	U	U	U	U	U	U	U	U
Styrene	1000	U	U	U	U	U	U	U	U
Tert-Butyl Methyl Ether	1000 300	U U	U U	U U	U U	U U	U U	U	U U
Tetrachloroethylene(PCE) Toluene	1000	U	U	U	U	U	U	U	U
Trans-1,2-Dichloroethene	1000	U	U	U	U	U	U	U	U
Trans-1,3-Dichloropropene	1000	U	U	U	U	U	U	U	U
Trichloroethylene (TCE)	400	U	U	Ü	U	U	U	l ü	Ü
Trichlorofluoromethane		U	U	Ü	U	U	Ü	Ü	Ü
Vinyl Chloride	27	U	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Total BTEX		0	0	0	0	0	0	0	0
Total VOCs		0.0029	0	0	0	0	0	0.04	0.032

mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit B: Detected in associated blank --: Not available

	Sample ID	EGCSB-11	EGCSB-11	EGCSB-13	EGCSB-13	EGCSB-14	EGCSB-14	EGCSB-15	EGCSB-15
	Start Depth (feet)	8	14.5	8	16	8.5	14	8.5	14.5
CONSTITUENT	End Depth (feet)	10	16.5	10	18	10.5	16	10.5	16.5
in mg/kg	Date Collected	5/23/2011	5/23/2011	5/20/2011	5/20/2011	5/25/2011	5/25/2011	5/24/2011	5/24/2011
	Part 375					0, = 0, = 0 , .			
	Industrial Use								
	Soil Cleanup								
	Objectives								
1.1.1-Trichloroethane	1000	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,1,2-Trichloro-1,2,2-Trifluoroethane		Ū	Ū	Ū	Ū	Ū	Ū	Ū	Ū
1,1,2-Trichloroethane		Ū	Ū	Ū	Ū	Ū	Ū	Ū	Ū
1,1-Dichloroethane	480	Ü	Ü	U	U	U	Ü	U	U
1,1-Dichloroethene	1000	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene		Ü	Ü	U	U	U	Ü	U	Ü
1,2,4-Trichlorobenzene		Ü	Ü	U	U	U	Ü	U	Ü
1,2-Dibromo-3-Chloropropane		Ü	Ü	U	U	U	Ü	U	Ü
1,2-Dibromoethane (Ethylene Dibromide)		U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	1000	U	U	U	U	U	U	U	U
1,2-Dichloroethane	60	U	U	U	U	U	U	U	U
1,2-Dichloropropane		U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	560	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	250	U	U	U	U	U	U	U	U
1,4-Dioxane (P-Dioxane)	250	U	U	U	U	U	U	U	U
2-Hexanone		U	U	U	U	U	U	U	U
Acetone	1000	U	U	U	U	U	U	U	U
Benzene	89	U	U	U	U	U	U	U	U
Bromochloromethane		U	U	U	U	U	U	U	U
Bromodichloromethane		U	U	U	U	U	U	U	U
Bromoform		U	U	U	U	U	U	U	U
Bromomethane		U	U	U	U	U	U	U	U
Carbon Disulfide		U	U	U	U	U	U	U	U
Carbon Tetrachloride	44	U	U	U	U	U	U	U	U
Chlorobenzene	1000	U	U	U	U	U	U	U	U
Chloroethane		U	U	U	U	U	U	U	U
Chloroform	700	U	U	U	U	U	U	U	U
Chloromethane		U	U	U	U	U	U	U	U
Cis-1,2-Dichloroethylene	1000	U	U	U	U	U	U	U	U
Cis-1,3-Dichloropropene		U	U	U	U	U	U	U	U
Cyclohexane		U	U	U	U	U	U	U	U
Dibromochloromethane		U	U	U	U	U	U	U	U
Dichlorodifluoromethane		U	U	U	U	U	U	U	U
Ethylbenzene	780	U	U	U	U	U	U	U	U
Isopropylbenzene (Cumene)		U	U	U	U	U	U	U	U
M,P-Xylene (Sum Of Isomers)		U	U	U	U	U	U	U	U
Methyl Acetate		U	U	U	U	U	U	U	U
Methyl Ethyl Ketone (2-Butanone)	1000	U	U	U	U	U	U	U	U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone		U	U	U	U	U	U	U	U
Methylogo Chlorida	1000	U	U	U	U	U 0024 I	U 0020 I	U	U
Methylene Chloride	1000	0.034	0.033 U	0.014 U	0.014 U	0.0024 J U	0.0039 J U	0.006 U	0.0054 J U
o-Xylene (1,2-Dimethylbenzene)	1000	U	U	U	U	_	U	U	U
Styrene Test Butul Methyl Ether	1000	U U	U	U	U	U U	U	U	U
Tert-Butyl Methyl Ether	300	U	U	U	U	U	U	U	U
Tetrachloroethylene(PCE)	1000	U	U	U	U	U	U	U	U
Toluene Trans-1,2-Dichloroethene	1000	U	U	U	U	U	U	U	U
Trans-1,2-Dichloropethene Trans-1,3-Dichloropropene	1000	U	U	U	U	U	U	U	U
	400	U	U	U	U	U	U	U	U
Trichloroethylene (TCE)		U	U	U	U	U	U	U	U
Trichlorofluoromethane Vinyl Chloride	 27	U	U	U	U	U	U	U	U
Total BTEX	21	0	0	0	0	0	0	0	0
Total VOCs		0.034	0.033	0.014	0.014	0.0024	0.0039	0.006	0.0054
TOTAL VOCS		0.034	0.033	U.U14	0.014	0.0024	0.0037	0.000	0.0004

mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit B: Detected in associated blank --: Not available

	Sample ID	EGCSB-16	EGCSB-16	EGCSB-17	EGCSB-17	EGCSB-18	EGCSB-18	EGCSB-19	EGCSB-19
	Start Depth (feet)	8	15	9	14	8	16	8	16
CONSTITUENT	End Depth (feet)	10	17	11	16	10	18	10	18
in mg/kg	Date Collected	5/24/2011	5/24/2011	5/24/2011	5/24/2011	5/19/2011	5/19/2011	5/20/2011	5/20/2011
······································	Part 375								0.00.00
	Industrial Use								
	Soil Cleanup								
	Objectives								
1.1.1-Trichloroethane	1000	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,1,2-Trichloro-1,2,2-Trifluoroethane		Ü	Ū	Ü	Ü	Ü	Ü	Ū	Ü
1,1,2-Trichloroethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,1-Dichloroethane	480	Ü	Ū	Ü	Ü	Ü	Ü	Ū	Ü
1,1-Dichloroethene	1000	U	U	Ü	U	U	U	U	U
1,2,3-Trichlorobenzene		Ü	Ū	Ü	Ü	Ü	Ü	Ū	Ü
1,2,4-Trichlorobenzene		Ü	Ū	Ü	Ü	Ü	Ü	Ū	Ü
1,2-Dibromo-3-Chloropropane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,2-Dibromoethane (Ethylene Dibromide)		Ü	Ū	Ü	Ü	Ü	Ü	Ū	Ü
1,2-Dichlorobenzene	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,2-Dichloroethane	60	Ü	Ū	Ü	Ü	Ü	Ü	Ū	Ü
1,2-Dichloropropane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,3-Dichlorobenzene	560	Ü	Ü	Ü	U	Ü	Ü	Ü	Ü
1,4-Dichlorobenzene	250	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
1,4-Dioxane (P-Dioxane)	250	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
2-Hexanone		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Acetone	1000	Ü	Ü	Ü	U	Ü	Ü	Ü	Ü
Benzene	89	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Bromochloromethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Bromodichloromethane		Ü	Ü	Ü	Ü	Ü	Ü	l ŭ	IJ
Bromoform		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Bromomethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Carbon Disulfide		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Carbon Tetrachloride	44	Ü	Ü	Ü	Ü	Ü	Ü	Ü	IJ
Chlorobenzene	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Chloroethane		Ü	Ü	Ü	U	Ü	Ü	Ü	Ü
Chloroform	700	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Chloromethane	700	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Cis-1,2-Dichloroethylene	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ü	IJ
Cis-1,3-Dichloropropene		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Cyclohexane		Ü	Ŭ	Ü	Ü	Ü	Ü	Ü	Ü
Dibromochloromethane		Ü	Ū	Ü	Ü	Ü	Ü	Ū	Ü
Dichlorodifluoromethane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Ethylbenzene	780	Ü	Ū	Ü	Ü	Ü	Ü	Ū	Ü
Isopropylbenzene (Cumene)		Ü	Ū	Ü	Ü	Ü	Ü	Ū	Ü
M,P-Xylene (Sum Of Isomers)		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Methyl Acetate		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Methyl Ethyl Ketone (2-Butanone)	1000	Ü	Ū	Ü	Ü	Ü	Ü	Ū	Ü
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Methylcyclohexane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Methylene Chloride	1000	0.0055	0.0081	0.0042 J	Ü	Ü	Ü	0.013	U
o-Xylene (1,2-Dimethylbenzene)	1000	U	U	U U	Ü	Ü	Ü	U.013	Ü
Styrene		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Tert-Butyl Methyl Ether	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Tetrachloroethylene(PCE)	300	Ü	l ü	Ü	Ü	Ü	Ü	l ŭ	U
Toluene	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Trans-1,2-Dichloroethene	1000	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Trans-1,3-Dichloropropene		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Trichloroethylene (TCE)	400	Ü	l ü	Ü	Ü	Ü	Ü	Ü	Ü
Trichlorofluoromethane		Ü	Ü	Ü	U	U	U	Ü	U
Vinyl Chloride	27	U	U	U	U	U	U	U	U
Total BTEX		n	ا ا	0	0	0	0	0	0
Total VOCs		0.0055	0.0081	0.0042	0	0	0	0.013	0
10(4) 1003		0.0000	0.0001	0.0042	U			0.013	U

mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit B: Detected in associated blank --: Not available

	Sample ID	EGCTP-01	EGCTP-02
	Start Depth (feet)	1	1
CONSTITUENT	End Depth (feet)	2	2
in mg/kg	Date Collected	4/27/2011	5/10/2011
rrig/kg	Part 375	172772011	0/10/2011
	Industrial Use		
	Soil Cleanup		
	Objectives		
1,1,1-Trichloroethane	1000	U	U
1,1,2,2-Tetrachloroethane		U	U
1,1,2-Trichloro-1,2,2-Trifluoroethane		U	U
1,1,2-Trichloroethane		U	U
1,1-Dichloroethane	480	U	U
1,1-Dichloroethene	1000	U	U
1,2,3-Trichlorobenzene		U	U
1,2,4-Trichlorobenzene		U	U
1,2-Dibromo-3-Chloropropane		U	U
1,2-Dibromoethane (Ethylene Dibromide)		U	U
1,2-Dichlorobenzene	1000	U	U
1,2-Dichloroethane	60	U	U
1,2-Dichloropropane		U	U
1,3-Dichlorobenzene	560	U	U
1,4-Dichlorobenzene	250	U	U
1,4-Dioxane (P-Dioxane)	250	U	U
2-Hexanone		U	U
Acetone	1000	U	U
Benzene	89	U	0.0055 J
Bromochloromethane		UJ	U
Bromodichloromethane		U	U
Bromoform		U	U
Bromomethane Carbon Disulfide		U U	U
Carbon Disulide Carbon Tetrachloride	44	U	U
Chlorobenzene	1000	U	U
Chloroethane		U	U
Chloroform	700	U	Ü
Chloromethane	700	Ü	Ü
Cis-1,2-Dichloroethylene	1000	Ü	Ü
Cis-1,3-Dichloropropene		Ü	Ü
Cyclohexane		Ü	Ŭ
Dibromochloromethane		U	Ü
Dichlorodifluoromethane		U	U
Ethylbenzene	780	U	U
Isopropylbenzene (Cumene)		U	U
M,P-Xylene (Sum Of Isomers)		U	U
Methyl Acetate		U	U
Methyl Ethyl Ketone (2-Butanone)	1000	U	U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanor	ie)	U	U
Methylcyclohexane		U	U
Methylene Chloride	1000	U	U
o-Xylene (1,2-Dimethylbenzene)	1000	U	0.0012 J
Styrene		U	0.0035 J
Tert-Butyl Methyl Ether	1000	U	U
Tetrachloroethylene(PCE)	300	U	U
Toluene	1000	U	0.0052 J
Trans-1,2-Dichloroethene	1000	U	U
Trans-1,3-Dichloropropene		U	U
Trichloroethylene (TCE)	400	U	U
Trichlorofluoromethane		U	U
Vinyl Chloride	27	U 0	U 0.0110
Total BTEX Total VOCs		0	0.0119 0.0154
Total VOCs		U	0.0104

mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit B: Detected in associated blank --: Not available

September Sept		I		I								
Constructivity		Sample ID	EGCMW-03	EGCMW-03	EGCMW-05	EGCMW-05	EGCMW-07	EGCMW-07	EGCSB-01	EGCSB-01	EGCSB-02	EGCSB-02
in enging	CONSTITUENT											
For 12.56 Test published per For 12.65 Test published per												5/18/2011
1.5.6. Telephone	iii iig, kg		0,20,2011	0,20,2011	0/20/2011	0/20/2011	0,17,2011	0/17/2011	0/1//2011	0,1,,,2011	0, 10, 2011	0, 10, 2011
Collegation												
12.4.5 = Freinardrochemene												
2.3.4.6-Trientenderplaned		Objectives										
2.4.5-Firchtrophronis												
2.4.6. This face phenod												
2.4-Dentrophenord												
2.4-Distriptyphenoid										-		-
2.4-Dillinophemode												
2.4-Dentrololeme									Ü	_	Ü	_
2-chorosphanemen — U U U U U U U U U U U U U U U U U U												
2-Chickepheneh	2,6-Dinitrotoluene		U	U	U	U	U	U	U	U	U	U
2-Methyphenol (C-roso) 1000 U U U U U U U U U					U		U	U	U	-	U	_
2-Methylphenol (c-reso) 1000				-						-		_
2-bitrophenide												
2-hitrophenol U U U U U U U U U U U U U U U U U				-					_	_		_
3.3-9-bit-horberendenden												
3-Mirroanline U U U U U U U U U U U U U U U U U												
4.6-Delinic-2-Methylphenol												
4-Bromophenyl Phenyl Ether										-		
## 4-Chiero-3-Mehyphenol												
## Altirophenion U U U U U U U U			U	U	U	U	U	U	U	U	U	U
### Althrophenel U U U U U U U U	4-Chlorophenyl Phenyl Ether			U	U	U	U	U	U	U	U	U
Acenaphthrene 1000 U U U U U U U U U												
Acenaphthylene 1000									_	-		-
Acetophenone												
Anthracene										-		-
Altzazine												
Benzaldehyde												
Benzo(a)Anthracene										-		
Benzo(b)Pyrene												
Benzo(b)-Fluorenthene										_		
Benzo (S)Fluoranthene	Benzo(b)Fluoranthene									U		U
Benzyl Butyl Phthalate	Benzo(g,h,i)Perylene	1000	U	U	U	U	U	U	U	U	U	U
Bipheny (Dipheny ()	Benzo(k)Fluoranthene	110	U	U	U	U	U	U	U	U	U	U
Bic/2-Chloroethy/) Ether (2-Chloroethy/) Ether (2-Chloroethy/) Ether (2-Chloroethy/) Ether (3-Chloroethy/) E										-		
Bis(2-Chloroethy) Ether (2-Chloroethy) Ether												
Ba(2-Chlorotsopropy) Ether									_	-	-	
Bis(2-Ethylhexyl) Phthalate												
Caprolactam										-		
Carbazole										-		
Chrysene										-		
Cresols, m & p		110										
Dibenz(a,h)Anthracene			U	U	U	U	U	U	U	U	U	U
Diethyl Phthalate		1.1	U	U	U	U	U	U	U	U	U	U
Dimethyl Phthalate				-						-		_
Di-N-Butyl Phthalate												
Di-N-Octylphthalate										-		
Fluoranthene 1000 U U U U U U U U U												
Fluorene 1000 U U U U U U U U U												
Hexachlorobenzene										_	_	
Hexachlorobutadiene									_		-	
Hexachlorocyclopentadiene				-						-		
Hexachloroethane												
Isophorone	Hexachloroethane		U	U	U	U	U	U	U	U	U	U
Isophorone		11		U	U	U	U	U	U	U	U	U
Nitrobenzene U U U U U U U U U U U U U U U U U	Isophorone											
N-Nitrosodi-N-Propylamine U U U U U U U U U U U U U U U U U										-		
N-Nitrosodiphenylamine U U U U U U U U U U U U U U U Pentachlorophenol 55 U U U U U U U U U U U U U U U U U U												
Pentachlorophenol 55 U												
Phenanthrene 1000 U										-		
Phenol 1000 U												
Pyrene 1000 U												
Total PAHS 0 0 0 0 0 0 0 0 0 0 0												
	Total PAHs Total SVOCs		0	0.06	0	0.06	0	0	0	0	0	0

mg/kg: Milligrams per kilogram
U: Not detected
J: Estimated value or limit
D: Detected at a secondary dilution
--: Not available
Exceeds Part 375 Industrial Use SCOs

	Sample ID	EGCSB-03	EGCSB-03	EGCSB-04	EGCSB-04	EGCSB-05	EGCSB-05	EGCSB-07	EGCSB-07	EGCSB-08	EGCSB-08
CONSTITUENT	Start Depth (feet) End Depth (feet)	14 16	23 25	12 14	14 16	12 14	14 16	10 12	14.5 16.5	8 10	15 17
in mg/kg	Date Collected	5/12/2011	5/12/2011	5/12/2011	5/12/2011	5/13/2011	5/13/2011	5/13/2011	5/13/2011	5/20/2011	5/20/2011
iii iiig/kg	Part 375	3/12/2011	3/12/2011	3/12/2011	3/12/2011	3/13/2011	3/13/2011	3/13/2011	3/13/2011	3/20/2011	3/20/2011
	Industrial Use										
	Soil Cleanup										
	Objectives										
1,2,4,5-Tetrachlorobenzene		U	U	U	U	U	U	U	U	U	U
2,3,4,6-Tetrachlorophenol		U	U	U	U	U	U	U	U	U	U
2,4,5-Trichlorophenol		U	U U	U U	U U	U U	U U	U U	U U	U U	U U
2,4,6-Trichlorophenol 2,4-Dichlorophenol		U	U	U	U	U	U	U	U	U	U
2,4-Dimethylphenol		U	U	U	Ü	Ü	Ü	Ü	U	Ü	U
2,4-Dinitrophenol		U	U	U	Ü	Ü	Ü	Ü	U	Ü	U
2,4-Dinitrotoluene		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
2,6-Dinitrotoluene		U	U	U	U	U	U	U	U	U	U
2-Chloronaphthalene		U	U	U	U	U	U	U	U	U	U
2-Chlorophenol		U	U	U	U	U	U	U	U	U	U
2-Methylnaphthalene		U	U	U	U	U	U	U	U	U	U
2-Methylphenol (o-Cresol)	1000	U	U	U	U	U	U	U	U	U	U
2-Nitroaniline		U	U	U	U	U	U	U	U	U	U
2-Nitrophenol 3,3'-Dichlorobenzidine	==	U U	U U	U U	U U						
3-Nitroaniline		U	U	U	U	U	U	U	U	U	U
4,6-Dinitro-2-Methylphenol		U	U	U	Ü	Ü	Ü	U	U	Ü	U
4-Bromophenyl Phenyl Ether		Ū	Ü	Ū	Ü	Ü	Ü	Ü	Ū	Ü	Ü
4-Chloro-3-Methylphenol		U	U	U	U	U	U	U	U	U	U
4-Chloroaniline		U	U	U	U	U	U	U	U	U	U
4-Chlorophenyl Phenyl Ether		U	U	U	U	U	U	U	U	U	U
4-Nitroaniline		U	U	U	U	U	U	U	U	U	U
4-Nitrophenol		U	U	U	U	U	U	U	U	U	U
Acenaphthulana	1000	U U	U U	U U	U U	U U	U U	0.18 J U	U U	U U	U U
Acenaphthylene Acetophenone	1000	U	U	U	U	U	U	U	U	U	U
Anthracene	1000	U	U	U	U	U	U	0.52	U	U	U
Atrazine		U	U	Ü	Ü	Ü	Ü	U.32	Ü	Ü	U
Benzaldehyde		ÜJ	UJ	UJ	ÜJ	UJ	ÜJ	UJ	UJ	ÜJ	ÜJ
Benzo(a)Anthracene	11	U	U	U	U	U	U	1.2	0.06 J	U	U
Benzo(a)Pyrene	1.1	U	U	U	U	U	U	0.7	0.06 J	U	U
Benzo(b)Fluoranthene	11	U	U	U	U	U	U	1.1	0.09 J	U	U
Benzo(g,h,i)Perylene	1000	U	U	U	U	U	U	0.39	0.06 J	U	U
Benzo(k)Fluoranthene	110	U	U	U	U	U	U	0.33 J	U	U	U
Benzyl Butyl Phthalate		U	U	U	U	U	U	U	U	U	U
Biphenyl (Diphenyl) Bis(2-Chloroethoxy) Methane		U	U U	U U	U U	U U	U U	U U	U U	U U	U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)		U	U	U	U	U	U	U	U	U	U
Bis(2-Chloroisopropyl) Ether		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Bis(2-Ethylhexyl) Phthalate		Ü	0.07 J	0.05 J	0.05 J	0.098 J	0.19 J	0.058 J	0.05 J	Ü	Ü
Caprolactam		U	U	U	U	U	U	U	U	U	U
Carbazole		U	U	U	U	U	U	0.25 J	U	U	U
Chrysene	110	U	U	U	U	U	U	1.3	0.07 J	U	U
Cresols, m & p		U	U	U	U	U	U	U	U	U	U
Dibenz(a,h)Anthracene	1.1	U	U U	U U	U U	U U	U U	0.11 J 0.093 J	U U	U U	U
Dibenzofuran Diethyl Phthalate	1000	U	U	U	U	0.14 J	0.31 J	0.093 J	U	U	U
Dimethyl Phthalate		0.81	0.52	0.36	0.52	U.14 J	U.313	U.39	U	U	U
Di-N-Butyl Phthalate		U	U.32	U.30	U.32	Ü	Ü	U	U	Ü	U
Di-N-Octylphthalate		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Fluoranthene	1000	U	U	U	U	0.13 J	U	3.5 D	0.11 J	U	U
Fluorene	1000	U	U	U	U	U	U	0.2 J	U	U	U
Hexachlorobenzene	12	U	U	U	U	U	U	U	U	U	U
Hexachlorobutadiene		U	U	U	U	U	U	U	U	U	U
Hexachlorocyclopentadiene		U	U	U	U	U	U	U	U	U	U
Hexachloroethane Indeno(1,2,3-c,d)Pyrene	11	U	U U	U	U U	U U	U	U 0.39	U U	U U	U
Indeno(1,2,3-c,d)Pyrene Isophorone	11	U U	U	U U	U	U	U U	0.39 U	U	U	U U
Naphthalene	1000	U	U	U	U	U	U	U	U	U	U
Nitrobenzene		U	U	U	U	Ü	U	Ü	U	U	U
N-Nitrosodi-N-Propylamine		U	U	U	U	Ü	Ü	U	U	Ü	U
N-Nitrosodiphenylamine		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Pentachlorophenol	55	U	U	U	U	U	U	U	U	U	U
Phenanthrene	1000	U	U	U	U	U	U	2.6	U	U	U
Phenol	1000	U	U	U	U	U	U	U	U	U	U
Pyrene	1000	U	U	U	U	0.11 J	U	2.5	0.12 J	U	U
Total PAHs		0	0	0	0	0.24	0	15.0	0.57	0	0
Total SVOCs		0.81	0.59	0.41	0.57	0.48	0.50	15.8	0.62	0	0

Willigrams per kilogram
U: Not detected
J: Estimated value or limit
D: Detected at a secondary dilution
---: Not available
Exceeds Part 375 Industrial Use SCOs

	Sample ID	EGCSB-09	EGCSB-09	EGCSB-10	EGCSB-10	EGCSB-11	ECCSD 11	EGCSB-13	EGCSB-13	EGCSB-14	EGCSB-14
	Start Depth (feet)	8 8	15	8	17.5	8	EGCSB-11 14.5	8 8	16	8.5	14
CONSTITUENT	End Depth (feet)	10	17	10	19.5	10	16.5	10	18	10.5	16
in mg/kg	Date Collected	5/20/2011	5/20/2011	5/17/2011	5/17/2011	5/23/2011	5/23/2011	5/20/2011	5/20/2011	5/25/2011	5/25/2011
	Part 375										
	Industrial Use Soil Cleanup										
	Objectives										
1,2,4,5-Tetrachlorobenzene		U	U	U	U	U	U	U	U	U	U
2,3,4,6-Tetrachlorophenol		U	U	U	U	U	U	U	U	U	U
2,4,5-Trichlorophenol		U	U	U	U	U	U	U	U	U	U
2,4,6-Trichlorophenol		U	U	U	U	U	U	U	U	U	U
2,4-Dichlorophenol		U U	U U	U U	U U	U U	U U	U U	U U	U U	U U
2,4-Dimethylphenol 2,4-Dinitrophenol		U	U	U	U	U	U	U	U	U	U
2,4-Dinitrophenol		U	U	U	Ü	Ü	U	U	Ü	U	U
2,6-Dinitrotoluene		Ü	Ü	Ü	Ū	Ū	Ū	Ü	Ü	Ü	Ü
2-Chloronaphthalene		U	U	U	U	U	U	U	U	U	U
2-Chlorophenol		U	U	U	U	U	U	U	U	U	U
2-Methylnaphthalene		U	U	U	U	U	U	U	U	U	U
2-Methylphenol (o-Cresol)	1000	U	U	U	U	U	U	U	U	U	U
2-Nitroaniline		U U	U U	U U	U U	U U	U U	U U	U U	U U	U U
2-Nitrophenol 3,3'-Dichlorobenzidine		U	U	U	U	U	U	U	U	U	U
3-Nitroaniline		U	U	U	U	U	U	U	U	U	U
4,6-Dinitro-2-Methylphenol		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
4-Bromophenyl Phenyl Ether		U	U	U	U	U	U	U	U	U	U
4-Chloro-3-Methylphenol		U	U	U	U	U	U	U	U	U	U
4-Chloroaniline		U	U	U	U	U	U	U	U	U	U
4-Chlorophenyl Phenyl Ether		U	U	U	U	U	U	U	U	U	U
4-Nitroaniline		U	U	U	U	U	U	U	U	U	U
4-Nitrophenol Acenaphthene	1000	U U	U U	U U	U U	U U	U U	U U	U U	U U	U U
Acenaphthylene	1000	U	U	U	U	U	U	U	U	U	U
Acetophenone		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Anthracene	1000	U	U	U	U	U	U	U	U	U	U
Atrazine		U	U	U	U	U	U	U	U	U	U
Benzaldehyde		UJ	UJ	UJ	UJ	UJ	UJ	UJ	UJ	UJ	UJ
Benzo(a)Anthracene	11	U	U	U	U	U	U	U	U	U	U
Benzo(a)Pyrene	1.1	U	U	U	U	U	U	U	U	U	U
Benzo(b)Fluoranthene Benzo(g,h,i)Perylene	11 1000	U U	U U	U U	U U	U U	U U	U U	U U	U U	U U
Benzo(k)Fluoranthene	110	U	U	U	Ü	Ü	U	U	Ü	U	U
Benzyl Butyl Phthalate		Ü	Ü	Ü	Ū	Ū	Ū	Ü	Ū	Ū	Ü
Biphenyl (Diphenyl)		U	U	U	U	U	U	U	U	U	U
Bis(2-Chloroethoxy) Methane		U	U	U	U	U	U	U	U	U	U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)		U	U	U	U	U	U	U	U	U	U
Bis(2-Chloroisopropyl) Ether		U	U	U	U	U	U	U	U	U	U
Bis(2-Ethylhexyl) Phthalate		U U	U U	U U	U U	0.07 J	U U	U U	U U	0.06 J U	U U
Caprolactam Carbazole		U	U	U	U	U U	U	U	U	U	U
Chrysene	110	U	U	U	Ü	U	U	U	U	U	U
Cresols, m & p		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Dibenz(a,h)Anthracene	1.1	U	U	U	U	U	U	U	U	U	U
Dibenzofuran	1000	U	U	U	U	U	U	U	U	U	U
Diethyl Phthalate		U	U	U	U	U	U	U	U	U	U
Dimethyl Phthalate		U U	U	U U	U U	0.12 J U	0.07 J	U U	U	U U	U U
Di-N-Butyl Phthalate Di-N-Octylphthalate		U	U U	U	U	U	U U	U	U U	U	U
Fluoranthene	1000	U	U	U	Ü	0.04 J	U	U	Ü	U	U
Fluorene	1000	U	Ü	Ü	Ü	U	Ü	Ü	Ü	Ü	Ü
Hexachlorobenzene	12	U	U	U	U	U	U	U	U	U	U
Hexachlorobutadiene		U	U	U	U	U	U	U	U	U	U
Hexachlorocyclopentadiene	==	U	U	U	U	U	U	U	U	U	U
Hexachloroethane		U	U	U	U	U	U	U	U	U	U
Indeno(1,2,3-c,d)Pyrene Isophorone	11	U U	U U	U U	U U	U U	U U	U U	U U	U U	U U
Naphthalene	1000	U	U	U	U	U	U	U	U	U	U
Nitrobenzene		U	U	U	Ü	Ü	U	U	Ü	U	U
N-Nitrosodi-N-Propylamine		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
N-Nitrosodiphenylamine		U	U	U	U	U	U	U	U	U	U
Pentachlorophenol	55	U	U	U	U	U	U	U	U	U	U
Phenanthrene	1000	U	U	U	U	U	U	U	U	U	U
Phenol	1000	U	U	U	U	U	U	U	U	U	U
Pyrene	1000	U	U	U	U	0.09 J	U	U	U	U	U
Total PAHs	==	0	0	0	0	0.13	0	0	0	0	0
Total SVOCs		0	0	0	0	0.33	0.07	0	0	0.06	0

mg/kg: Milligrams per kilogram
U: Not detected
J: Estimated value or limit
D: Detected at a secondary dilution
--: Not available
Exceeds Part 375 Industrial Use SCOs

	Sample ID	EGCSB-15	EGCSB-15	EGCSB-16	EGCSB-16	EGCSB-17	EGCSB-17	EGCSB-18	EGCSB-18	EGCSB-19	EGCSB-19
	Start Depth (feet)	8.5	14.5	8 8	15	9	14	8	16	8 8	16
CONSTITUENT	End Depth (feet)	10.5	16.5	10	17	11	16	10	18	10	18
in mg/kg	Date Collected	5/24/2011	5/24/2011	5/24/2011	5/24/2011	5/24/2011	5/24/2011	5/19/2011	5/19/2011	5/20/2011	5/20/2011
	Part 375										
	Industrial Use Soil Cleanup										
	Objectives										
1,2,4,5-Tetrachlorobenzene		U	U	U	U	U	U	U	U	U	U
2,3,4,6-Tetrachlorophenol		U	U	U	U	U	U	U	U	U	U
2,4,5-Trichlorophenol		U	U	U	U	U	U	U	U	U	U
2,4,6-Trichlorophenol		U	U	U	U	U	U	U	U	U	U
2,4-Dichlorophenol 2,4-Dimethylphenol		U U	U U	U U	U U	U U	U U	U U	U U	U U	U U
2,4-Dinitrophenol		U	U	U	U	U	U	U	U	U	U
2,4-Dinitrotoluene		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
2,6-Dinitrotoluene		U	U	U	U	U	U	U	U	U	U
2-Chloronaphthalene		U	U	U	U	U	U	U	U	U	U
2-Chlorophenol		U	U	U	U	U	U	U	U	U	U
2-Methylnaphthalene	1000	U U	U U	0.094 J U	U U						
2-Methylphenol (o-Cresol) 2-Nitroaniline		U	U	U	U	U	U	U	U	U	U
2-Nitrophenol		Ü	Ü	Ü	Ü	U	Ü	U	U	Ü	Ü
3,3'-Dichlorobenzidine		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
3-Nitroaniline		U	U	U	U	U	U	U	U	U	U
4,6-Dinitro-2-Methylphenol		U	U	U	U	U	U	U	U	U	U
4-Bromophenyl Phenyl Ether		U	U	U	U	U	U	U	U	U	U
4-Chloro-3-Methylphenol 4-Chloroaniline		U U	U U	U U	U U	U U	U U	U U	U U	U U	U U
4-Chlorophenyl Phenyl Ether		Ü	U	Ü	U	U	U	U	U	U	U
4-Nitroaniline		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
4-Nitrophenol		U	U	U	U	U	U	U	U	U	U
Acenaphthene	1000	U	U	0.53	U	U	U	U	U	U	U
Acenaphthylene	1000	0.059 J	U	U	U	U	U	U	U	U	U
Acetophenone		U	U	U	U	U	U	U	U	U	U
Anthracene Atrazine	1000	U U	U U	1.1 U	U U	U U	U U	U	U U	U U	U U
Benzaldehyde		n)	UJ	UJ	UJ	UJ	UJ	UJ	UJ	UJ	n)
Benzo(a)Anthracene	11	0.32 J	U	1.8	U	U	Ü	U	U	U	U
Benzo(a)Pyrene	1.1	0.22 J	U	<u>1.5</u>	U	U	U	U	U	U	U
Benzo(b)Fluoranthene	11	0.3 J	U	1.8	U	U	U	U	U	U	U
Benzo(g,h,i)Perylene	1000	0.11 J	U	0.55	U	U	U	U	U	U	U
Benzo(k)Fluoranthene	110	0.11 J	U U	0.67	U U	U U	U	U	U U	U	U
Benzyl Butyl Phthalate Biphenyl (Diphenyl)		U U	U	U U	U	U	U U	U U	U	U U	U U
Bis(2-Chloroethoxy) Methane		Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)		U	U	U	U	U	U	U	U	U	U
Bis(2-Chloroisopropyl) Ether		U	U	U	U	U	U	U	U	U	U
Bis(2-Ethylhexyl) Phthalate		U	U	U	U	U	U	U	U	U	U
Caprolactam		U	U	U	U	U	U	U	U	U	U
Carbazole Chrysene	110	U 0.3 J	U U	0.72 1.5	U U						
Cresols, m & p		U.3 3	U	U.S	U	U	U	U	U	U	U
Dibenz(a,h)Anthracene	1.1	Ü	Ü	0.16 J	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Dibenzofuran	1000	U	U	0.3 J	U	U	U	U	U	U	U
Diethyl Phthalate		U	U	U	U	U	U	U	U	U	U
Dimethyl Phthalate		U	U	U	U U	U	U	U	U	U	U
Di-N-Butyl Phthalate Di-N-Octylphthalate		U U	U U	U U	U	U U	U U	U U	U U	U U	U U
Fluoranthene	1000	0.45	U	4.5 D	U	U	U	U	U	U	U
Fluorene	1000	U	Ü	0.62	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Hexachlorobenzene	12	U	U	U	U	U	U	U	U	U	U
Hexachlorobutadiene		U	U	U	U	U	U	U	U	U	U
Hexachlorocyclopentadiene		U	U	U	U	U	U	U	U	U	U
Hexachloroethane Indeno(1,2,3-c,d)Pyrene		U 0.1.L	U U	U 0 E1	U U	U	U U	U	U U	U U	U
Indeno(1,2,3-c,d)Pyrene Isophorone	11	0.1 J U	U	0.51 U	U	U U	U	U U	U	U	U U
Naphthalene	1000	U	U	0.09 J	U	U	U	U	U	U	U
Nitrobenzene		Ü	Ü	U	U	Ü	Ü	Ü	Ü	Ü	Ü
N-Nitrosodi-N-Propylamine		Ü	U	U	U	U	U	U	U	U	U
N-Nitrosodiphenylamine		U	U	U	U	U	U	U	U	U	U
Pentachlorophenol	55	U	U	U	U	U	U	U	U	U	U
Phenanthrene Phenol	1000 1000	0.1 J U	U U	5 D U	U U						
Pyrene	1000	0.54	U	4.3 D	U	U	U	U	U	U	U
Total PAHs			0		0	0	0	0	0	0	
Total SVOCs		2.6 2.6	0	25 26	0	0	0	0	0	0	0

Willigrams per kilogram
U: Not detected
J: Estimated value or limit
D: Detected at a secondary dilution
--: Not available
Exceeds Part 375 Industrial Use SCOs

	1 1		
	Sample ID	EGCTP-01	EGCTP-02
CONSTITUENT	Start Depth (feet)	1	1
CONSTITUENT	End Depth (feet)	2	2
in mg/kg	Date Collected Part 375	4/27/2011	5/10/2011
	Industrial Use		
	Soil Cleanup		
	Objectives		
1,2,4,5-Tetrachlorobenzene		U	U
2,3,4,6-Tetrachlorophenol		Ū	Ū
2,4,5-Trichlorophenol		Ü	Ü
2,4,6-Trichlorophenol		Ū	Ū
2,4-Dichlorophenol		Ū	Ū
2,4-Dimethylphenol		U	Ü
2,4-Dinitrophenol		U	U
2,4-Dinitrotoluene		U	U
2,6-Dinitrotoluene		U	U
2-Chloronaphthalene		U	U
2-Chlorophenol		U	U
2-Methylnaphthalene		U	0.46 J
2-Methylphenol (o-Cresol)	1000	U	U
2-Nitroaniline		U	U
2-Nitrophenol		U	U
3,3'-Dichlorobenzidine		U	U
3-Nitroaniline		U	U
4,6-Dinitro-2-Methylphenol		U	U
4-Bromophenyl Phenyl Ether		U	U
4-Chloro-3-Methylphenol		U	U
4-Chloroaniline		U	U
4-Chlorophenyl Phenyl Ether		U	U
4-Nitroaniline		U	U
4-Nitrophenol		U	U
Acenaphthene	1000	U	0.32 J
Acenaphthylene	1000	U	3.9
Acetophenone		U	U
Anthracene	1000	U	2.2
Atrazine		U	U
Benzaldehyde		UJ	UJ
Benzo(a)Anthracene	11	0.13 J	8.6
Benzo(a)Pyrene	1.1	0.16 J	<u>6.5</u>
Benzo(b)Fluoranthene	11	0.23 J	6.6
Benzo(g,h,i)Perylene	1000	0.13 J	3.8
Benzo(k)Fluoranthene	110	U	2
Benzyl Butyl Phthalate		U	U
Biphenyl (Diphenyl)		U	U
Bis(2-Chloroethoxy) Methane		U	U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)		U	U
Bis(2-Chloroisopropyl) Ether		U	U
Bis(2-Ethylhexyl) Phthalate		U	U
Caprolactam		U	U
Carbazole		U	U
Chrysene	110	0.17 J	11
Cresols, m & p		U	U
Dibenz(a,h)Anthracene	1.1	U	1 J
Dibenzofuran	1000	U	U
Diethyl Phthalate		U	U
Dimethyl Phthalate		U	U
Di-N-Butyl Phthalate		U	U
Di-N-Octylphthalate		U	U
Fluoranthene	1000	0.15 J	10 J
Fluorene	1000	U	2
Hexachlorobenzene	12	U	U
Hexachlorobutadiene		U	U
Hexachlorocyclopentadiene		U	U
Hexachloroethane		U	U
Indeno(1,2,3-c,d)Pyrene	11	0.11 J	3.4
Isophorone		U	U
Naphthalene	1000	U	0.31 J
Nitrobenzene		U	U
N-Nitrosodi-N-Propylamine		U	U
N-Nitrosodiphenylamine		U	U
Pentachlorophenol	55	U	U
Phenanthrene	1000	0.1 J	15
Phenol	1000	U	U
Pyrene	1000	0.24 J	24 D
		4.4	100
Total PAHs	1	1.4	100

u: Not detected
J: Estimated value or limit
D: Detected a a secondary dilution
--: Not available

Exceeds Part 375 Industrial Use SCOs

TABLE F-12 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION SUBSURFACE SOIL SAMPLE RESULTS TARGET ANALYTE LIST (TAL) METALS + CYANIDE

	Sample ID	EGCMW-03	EGCMW-03	EGCMW-05	EGCMW-05	EGCMW-07	EGCMW-07	EGCSB-01	EGCSB-01	EGCSB-02	EGCSB-02	EGCSB-03	EGCSB-03	EGCSB-04	EGCSB-04
	Start Depth (feet)	15.5	8.5	8	15	9.5	16	8	18	9	15.5	14	23	12	14
CONSTITUENT	End Depth (feet)	17.5	10.5	10	17	11.5	18	10	20	11	17.5	16	25	14	16
in mg/kg	Date Collected	5/26/2011	5/26/2011	5/23/2011	5/23/2011	5/19/2011	5/19/2011	5/17/2011	5/17/2011	5/18/2011	5/18/2011	5/12/2011	5/12/2011	5/12/2011	5/12/2011
	Part 375														
	Industrial Use														
	Soil Cleanup														
	Objectives														
Aluminum		1,520	2,200	1,470	663	716	2,630	1,140	857	2,200	1,270	1,760	695	1,720	881
Antimony		U	U	U	U	U	U	U	U	U	U	U	U	U	U
Arsenic	16	0.67 J	U	U	U	0.97 J	1.31 J	0.46 J	U	0.582 J	0.754 J	1.31	U	U	0.709 J
Barium	10,000	3.57 J	26.7	3.8 J	3.14 J	5.78	7.77	3.54 J	1.63 J	2.62 J	1.57 J	3.03 J	3.1 J	3.68 J	3.87 J
Beryllium	2,700	0.13 J	0.14 J	0.13 J	0.11 J	0.1 J	0.29	0.09 J	0.07 J	0.077 J	0.089 J	0.112 J	0.06 J	0.12 J	0.084 J
Cadmium	60	U	U	U	U	U	0.14 J	U	U	UJ	UJ	U	U	U	U
Calcium		113	160	37.7 J	9.65 J	28.7 J	U	27 J	31.8 J	94.1 J	109 J	112	89.6 J	77.1 J	82.8
Chromium, Total	800	3.62 J	5.63 J	2.68	3.6	2.33	9.73	2.53 J	0.94 J	1.97 J	3.18 J	4.55 J	1.18 J	2.02 J	2.15 J
Cobalt		0.67 J	1.55	0.89 J	0.59 J	0.82 J	2.46	0.93 J	U	0.564 J	U	0.482 J	U	U	0.49 J
Copper	10,000	2	3.11	2.65	1.28	2.12	2.23	3.38	1.61	0.659 J	1.07 J	10.7 J	1.86 J	2.75 J	1.73 J
Iron		4,590	4,280	3,770	3,290	3,440	11,300	2,220	1,560	1,950 J	3,390 J	2,760	1,210	2,370	2,130
Lead	3,900	1.03	0.9	2.97	0.68	0.81	2.94	0.62	0.39 J	0.925 J	1.37 J	1.36	0.87	1.27	1.03
Magnesium		80.5 J	978	111	43 J	210	201	121	53.9 J	97.7	52.6 J	85.3	82.3 J	96.4	72.9 J
Manganese	10,000	79.9	119	71.6	8.75	45.5	143	10.2	6.54	25.3 J	15.4 J	7.54	5.06	10.5	8.01
Mercury	5.7	UD	UD	UD	UD	U	0.009 J	0.002 J	U	U	U	U	UD	UD	0.024 JD
Nickel	10,000	1.35 J	3.16	1.38 J	0.8 J	3.79 J	2.58 J	0.9 J	U	1.04 J	0.721 J	1.29 J	0.88 J	0.85 J	1.12 J
Potassium		47.8 J	854	69.6 J	39 J	155	88.4	121	43.6 J	54.2 J	37.8 J	60.1 J	68 J	71.1 J	49.6 J
Selenium	6,800	0.84 J	0.64 J	0.89	1.03	1 J	1.47 J	0.45 J	0.54 J	U	U	0.425 J	U	U	U
Silver	6,800	0.23 J	0.17 J	U	U	U	U	U	U	U	U	U	U	U	U
Sodium		127	125	242	258	92.9 J	65.3 J	148	154	118 J	160 J	130 J	338 J	179 J	116 J
Thallium		U	U	U	U	U	U	UJ	UJ	U	U	U	U	U	U
Vanadium		4.26	7.82	3.27	2.47	2.22	7.29	2.37	1.45 J	2.06 J	2.69 J	3.46	1.62 J	3.2	2.16
Zinc	10,000	5.5 J	11.7 J	18.1	8.03	5.97	6.16	5.12	5.03	5.57 J	7.68 J	13.1	4.92	5.27	5.6
Cyanide	10,000	U	0.097 J	U	U	U	U	U	U	U	U	U	U	U	U

mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit D: Detected at secondary dilution --: Not available

TABLE F-12 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION SUBSURFACE SOIL SAMPLE RESULTS TARGET ANALYTE LIST (TAL) METALS + CYANIDE

	Sample ID	EGCSB-05	EGCSB-05	EGCSB-07	EGCSB-07	EGCSB-08	EGCSB-08	EGCSB-09	EGCSB-09	EGCSB-10	EGCSB-10	EGCSB-11	EGCSB-11	EGCSB-13	EGCSB-13
	Start Depth (feet)	12	14	10	14.5	8	15	8	15	8	17.5	8	14.5	8	16
CONSTITUENT	End Depth (feet)	14	16	12	16.5	10	17	10	17	10	19.5	10	16.5	10	18
in mg/kg	Date Collected	5/13/2011	5/13/2011	5/13/2011	5/13/2011	5/20/2011	5/20/2011	5/20/2011	5/20/2011	5/17/2011	5/17/2011	5/23/2011	5/23/2011	5/20/2011	5/20/2011
	Part 375														
	Industrial Use														
	Soil Cleanup														
	Objectives														
Aluminum		3,940	2,800	4,220	5,190	1,540	1,730	723	647	1,580	954	1,390	869	1,890	1,020
Antimony		U	U	U	U	U	U	U	U	U	U	U	U	U	U
Arsenic	16	0.74 J	0.8 J	1.32	1.89	0.83 J	0.54 J	0.4 J	0.63 J	0.61 J	0.73 J	0.3 J	U	1.01 J	0.62 J
Barium	10,000	13.4	9.04	7.88	10.7	3.76 J	6.75	2.66 J	1.78 J	4.61	2.14 J	3.83 J	2.15 J	3.45 J	3.92 J
Beryllium	2,700	0.29	0.24 J	0.152 J	0.222 J	0.14 J	0.17 J	0.12 J	0.07 J	0.1 J	0.08 J	0.13 J	0.1 J	0.12 J	0.08 J
Cadmium	60	U	U	U	0.091 J	U	U	U	U	U	U	U	U	U	U
Calcium		5,740	4,670	276	708	24.1 J	34.1 J	53.7 J	29.3 J	29.6 J	26 J	16.9 J	33.4 J	71.9 J	85.5 J
Chromium, Total	800	9.36 J	31.8 J	28.2 J	8.54 J	2.76	2.28	1.68	5.77	2.61 J	6.87 J	5.2	3.89	3.06	2.22
Cobalt		2.14	1.46	1.52	2.18	0.69 J	0.89 J	U	U	0.49 J	U	U	U	U	U
Copper	10,000	9.73 J	11.2 J	5.74 J	3.97 J	1.23	1.78	1.23	1.15	2.68	2.42	2.44	1.47	1.33	1.43
Iron		8,540	7180	6,210	7,530	4,510	4,020	2,160	1740	2,660	1790	5,150	2,700	2410	1970
Lead	3,900	11.6	7.96	3.57	6.12	1.33	1.58	1.52	1.19	0.56	0.37 J	1.95	0.8	1.48	1.24
Magnesium		3,760	2,630	248	447	77.2 J	286	58.4 J	46.9 J	97.9	48.8 J	246	55.4 J	98.6	139
Manganese	10,000	122	86.4	66.4	71.9	41.6	17.3	7.25	5.51	23.6	7.07	47.1	9.31	34.4	22.2
Mercury	5.7	0.064 JD	0.029 JD	UD	UD	UD	UD	0.035 JD	UD	0.006 J	U	UD	UD	UD	UD
Nickel	10,000	5.29	4.52	4.25	4.66	0.69 J	1.14 J	0.66 J	0.45 J	0.9 J	0.55 J	0.92 J	1.08 J	1.2 J	0.86 J
Potassium		339	226	171	199	52.3 J	84.3 J	44.5 J	30.2 J	73.4 J	51.5 J	127	46.1 J	67.5 J	78.7 J
Selenium	6,800	0.92	0.45 J	0.69 J	0.904	0.61 J	0.97 J	0.66 J	0.48 J	0.51 J	0.6 J	1.2	0.76 J	0.52 J	0.6 J
Silver	6,800	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Sodium		113 J	109 J	163 J	695 J	116 J	196 J	68.9 J	87.1 J	138	124	150	362	115 J	79 J
Thallium		U	U	U	U	U	U	U	U	UJ	UJ	U	U	U	U
Vanadium		10.7	7.43	6.13	7.32	3.15	4.44	1.65 J	1.8	2.4	2.16	5.2	2.64	2.5	2.18
Zinc	10,000	20.3	12.9	16	24.3	5.72	11	6	5.58	4.5	4.15	8.11	7.45	4.44	4.9
Cyanide	10,000	U	U	U	U	U	U	U	U	U	U	U	U	U	U

mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit D: Detected at secondary dilution --: Not available

TABLE F-12 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION SUBSURFACE SOIL SAMPLE RESULTS TARGET ANALYTE LIST (TAL) METALS + CYANIDE

	Sample ID	EGCSB-14	EGCSB-14	EGCSB-15	EGCSB-15	EGCSB-16	EGCSB-16	EGCSB-17	EGCSB-17	EGCSB-18	EGCSB-18	EGCSB-19	EGCSB-19	EGCTP-01	EGCTP-02
	Start Depth (feet)	8.5	14	8.5	14.5	8	15	9	14	8	16	8	16	1	1
CONSTITUENT	End Depth (feet)	10.5	16	10.5	16.5	10	17	11	16	10	18	10	18	2	2
in mg/kg	Date Collected	5/25/2011	5/25/2011	5/24/2011	5/24/2011	5/24/2011	5/24/2011	5/24/2011	5/24/2011	5/19/2011	5/19/2011	5/20/2011	5/20/2011	4/27/2011	5/10/2011
	Part 375														
	Industrial Use														
	Soil Cleanup														
	Objectives														
Aluminum		1,290	429	863	503	2,180	715	1,960	1,250	2,680	2,180	2,490	1,090	3,690	7,140
Antimony		U	U	U	U	U	U	U	U	U	U	U	U	0.721 J	U
Arsenic	16	1.82	0.38 J	3.1	0.56 J	1.93	0.44 J	0.96	0.78	0.95 J	1.8 J	0.9 J	1.09 J	6.11	2.72 J
Barium	10,000	8.73	1.59 J	3.81 J	2.04 J	8.94	1.89 J	7.29	1.58 J	4.86	3.97 J	7.17	6.06	19.3	27.7
Beryllium	2,700	0.16 J	U	0.13 J	0.1 J	0.17 J	U	0.15 J	0.15 J	0.16 J	0.17 J	0.17 J	0.24 J	0.354	0.33 J
Cadmium	60	U	U	U	U	U	U	U	U	U	U	U	U	1.19	0.63
Calcium		793	U	62.8 J	U	1,080	65.1 J	625	U	67.9 J	33.2 J	65 J	20.8 J	559	1320
Chromium, Total	800	7.23	2.27	3.9	3.38	6.93	2.55	10	3.23	3.01	17.2	3.26	3.68	24.6	11.7
Cobalt		0.58 J	U	U	U	0.83 J	U	0.91 J	U	1.18 J	0.75 J	0.6 J	1.16 J	3.28	2.7
Copper	10,000	6.98	0.68 J	3.91	2.44	9.15	1.15	7.02	1.27	2.1	3.58	1.55	2.67	14.1	11.8
Iron		5,350	1,100	6,090	2,980	5,270	2,110	4,060	4,620	4,350	4,400	3,750	7,210	13,600	10,500
Lead	3,900	9.5	0.47	3.03	0.56	22.9	0.85	10	0.97	1.03	1.01	1.57	1.66	128	172
Magnesium		420	35.8 J	119	50.5 J	675	63.2 J	236	140	120	134	279	270	513	1210
Manganese	10,000	30.6	2.07	13.9	6.69	29.3	6.79	41.2	9.73	44.5	37.7	29.1	60.7	195	96.8
Mercury	5.7	0.141	U	0.66 D	UD	UD	UD	UD	UD	0.007 J	0.005 J	UD	UD	0.505 D	0.236
Nickel	10,000	1.79	0.36 J	0.87 J	0.53 J	4.18	U	2.13	1.05 J	1.38 J	1.73 J	1.58 J	4.39	7.62	6.05
Potassium		126	60.8 J	88.4	33.6 J	85.5	44.6 J	65.5 J	48.6 J	69.7 J	92.4	198	166	155	293
Selenium	6,800	U	U	U	U	U	U	U	U	0.6 J	1.08 J	1.02 J	1.55 J	0.545 J	2.25
Silver	6,800	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Sodium		261	355	189	198	131	240	105	177	114 J	159 J	88.9 J	122 J	185	47.2 J
Thallium		U	U	U	U	U	U	U	U	U	U	U	U	U	U
Vanadium		5.13	1.27 J	4.36	2.07	4.31	2.17 J	3.87	3.35	4.72	4.32	4.04	3.36	9.84	15.2
Zinc	10,000	13.9	7.93	8.62	6.48	41	6.93	13.3	6.99	4.19	4.87	6.83	8.17	190	242
Cyanide	10,000	U	0.826	9.03	1.05	3.01	U	1.22	U	U	U	U	U	0.1 J	1.47

mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit D: Detected at secondary dilution --: Not available

TABLE F-13 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION SUBSURFACE SOIL SAMPLE RESULTS POLYCHLORINATED BIPHENYLS (PCBs)

	Sample ID	EGCMW-03	EGCMW-03	EGCMW-05	EGCMW-05	EGCMW-07	EGCMW-07	EGCSB-01	EGCSB-01	EGCSB-02	EGCSB-02	EGCSB-03	EGCSB-03	EGCSB-04	EGCSB-04
	Start Depth (feet)	8.5	15.5	8	15	9.5	16	8	18	9	15.5	14	23	12	14
CONSTITUENT	End Depth (feet)	10.5	17.5	10	17	11.5	18	10	20	11	17.5	16	25	14	16
in mg/kg	Date Collected	5/26/2011	5/26/2011	5/23/2011	5/23/2011	5/19/2011	5/19/2011	5/17/2011	5/17/2011	5/18/2011	5/18/2011	5/12/2011	5/12/2011	5/12/2011	5/12/2011
	Part 375 Industrial Use Soil Cleanup Objectives														
PCB-1016 (Aroclor 1016)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1221 (Aroclor 1221)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1232 (Aroclor 1232)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1242 (Aroclor 1242)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1248 (Aroclor 1248)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1254 (Aroclor 1254)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1260 (Aroclor 1260)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1262 (Aroclor 1262)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1268 (Aroclor 1268)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Total PCBs	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0

mg/kg: Milligrams per kilogram U: Not detected

J: Estimated value or limit

TABLE F-13 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION SUBSURFACE SOIL SAMPLE RESULTS POLYCHLORINATED BIPHENYLS (PCBs)

	Sample ID	EGCSB-05	EGCSB-05	EGCSB-07	EGCSB-07	EGCSB-08	EGCSB-08	EGCSB-09	EGCSB-09	EGCSB-10	EGCSB-10	EGCSB-11	EGCSB-11	EGCSB-13	EGCSB-13
	Start Depth (feet)	12	14	10	14.5	8	15	8	15	8	17.5	8	14.5	8	16
CONSTITUENT	End Depth (feet)	14	16	12	16.5	10	17	10	17	10	19.5	10	16.5	10	18
in mg/kg	Date Collected	5/13/2011	5/13/2011	5/13/2011	5/13/2011	5/20/2011	5/20/2011	5/20/2011	5/20/2011	5/17/2011	5/17/2011	5/23/2011	5/23/2011	5/20/2011	5/20/2011
	Part 375 Industrial Use Soil Cleanup Objectives														
PCB-1016 (Aroclor 1016)	25	U	U	U	U	U	U	U	U	U	U	UJ	U	U	U
PCB-1221 (Aroclor 1221)	25	U	U	U	U	U	U	U	U	U	U	UJ	U	U	U
PCB-1232 (Aroclor 1232)	25	U	U	U	U	U	U	U	U	U	U	UJ	U	U	U
PCB-1242 (Aroclor 1242)	25	U	U	U	U	U	U	U	U	U	U	UJ	U	U	U
PCB-1248 (Aroclor 1248)	25	U	U	U	U	U	U	U	U	U	U	UJ	U	U	U
PCB-1254 (Aroclor 1254)	25	U	U	U	U	U	U	U	0.05	U	U	UJ	U	U	U
PCB-1260 (Aroclor 1260)	25	U	U	U	U	U	U	U	U	U	U	UJ	U	U	U
PCB-1262 (Aroclor 1262)	25	U	U	U	U	U	U	U	U	U	U	UJ	U	U	U
PCB-1268 (Aroclor 1268)	25	U	U	U	U	U	U	U	U	U	U	UJ	U	U	U
Total PCBs	25	0	0	0	0	0	0	0	0.05	0	0	0	0	0	0

mg/kg: Milligrams per kilogram U: Not detected

J: Estimated value or limit

TABLE F-13 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION SUBSURFACE SOIL SAMPLE RESULTS POLYCHLORINATED BIPHENYLS (PCBs)

	Sample ID	EGCSB-14	EGCSB-14	EGCSB-15	EGCSB-15	EGCSB-16	EGCSB-16	EGCSB-17	EGCSB-17	EGCSB-18	EGCSB-18	EGCSB-19	EGCSB-19	EGCTP-01	EGCTP-02
	Start Depth (feet)	8.5	14	8.5	14.5	8	15	9	14	8	16	8	16	1	1
CONSTITUENT	End Depth (feet)	10.5	16	10.5	16.5	10	17	11	16	10	18	10	18	2	2
in mg/kg	Date Collected	5/25/2011	5/25/2011	5/24/2011	5/24/2011	5/24/2011	5/24/2011	5/24/2011	5/24/2011	5/19/2011	5/19/2011	5/20/2011	5/20/2011	4/27/2011	5/10/2011
	Part 375 Industrial Use Soil Cleanup Objectives														
PCB-1016 (Aroclor 1016)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1221 (Aroclor 1221)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1232 (Aroclor 1232)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1242 (Aroclor 1242)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1248 (Aroclor 1248)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1254 (Aroclor 1254)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1260 (Aroclor 1260)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1262 (Aroclor 1262)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
PCB-1268 (Aroclor 1268)	25	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Total PCBs	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0

mg/kg: Milligrams per kilogram U: Not detected J: Estimated value or limit

TABLE F-14 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION SUBSURFACE SOIL SAMPLE RESULTS TOTAL PETROLEUM HYDROCARBONS (TPHs)

	Jumpic 1D	LOCIVIV 00	LOOIVIVV OO	LOCIVIV 00	LOOMIN OO	LOOIVIV 07	LOOIVIV 07	LOOSD OI	LOODD OI	L003D 02	L003D 02	LOODD OO	LOODD OO	L000D 01	LOUDD 01
	Start Depth (feet)	15.5	8.5	8	15	9.5	16	8	18	9	15.5	14	23	12	14
CONSTITUENT	End Depth (feet)	17.5	10.5	10	17	11.5	18	10	20	11	17.5	16	25	14	16
in mg/kg	Date Collected	5/26/2011	5/26/2011	5/23/2011	5/23/2011	5/19/2011	5/19/2011	5/17/2011	5/17/2011	5/18/2011	5/18/2011	5/12/2011	5/12/2011	5/12/2011	5/12/2011
Total Petroleum Hydrocarbons		7	3	25 J	5 J	4	5	2 J	3 J	3	3 J	3 J	3 J	3	2 J
	Sample ID	EGCSB-05	EGCSB-05	EGCSB-07	EGCSB-07	EGCSB-08	EGCSB-08	EGCSB-09	EGCSB-09	EGCSB-10	EGCSB-10	EGCSB-11	EGCSB-11	EGCSB-13	EGCSB-13
	Start Depth (feet)	12	14	10	14.5	8	15	8	15	8	17.5	8	14.5	8	16
CONSTITUENT	End Depth (feet)	14	16	12	16.5	10	17	10	17	10	19.5	10	16.5	10	18
in mg/kg	Date Collected	5/13/2011	5/13/2011	5/13/2011	5/13/2011	5/20/2011	5/20/2011	5/20/2011	5/20/2011	5/17/2011	5/17/2011	5/23/2011	5/23/2011	5/20/2011	5/20/2011
Total Petroleum Hydrocarbons		77	43 J	17 J	14 J	6 J	4 J	28 J	4 J	2 J	2 J	43 J	11 J	5 J	3 J
	Sample ID	EGCSB-14	EGCSB-14	EGCSB-15	EGCSB-15	EGCSB-16	EGCSB-16	EGCSB-17	EGCSB-17	EGCSB-18	EGCSB-18	EGCSB-19	EGCSB-19	EGCTP-01	EGCTP-02
	Start Depth (feet)	8.5	14	8.5	14.5	8	15	9	14	8	16	8	16	1	1
CONSTITUENT	End Depth (feet)	10.5	16	10.5	16.5	10	17	11	16	10	18	10	18	2	2

5/24/2011

5/24/2011

32

EGCSB-01

5/24/2011

5

5/24/2011

9

EGCSB-02

5/19/2011

EGCSB-02

5/19/2011

8

EGCSB-03

5/20/2011

4 J

EGCSB-03

5/20/2011

4 J

EGCSB-04

4/27/2011

29

EGCSB-04

5/10/2011

1501

Sample ID EGCMW-03 EGCMW-03 EGCMW-05 EGCMW-05 EGCMW-07 EGCSB-01

Total Petroleum Hydrocarbons mg/kg: Milligrams per kilogram

Date Collected

5/25/2011

23

5/25/2011

4

5/24/2011

230

5/24/2011

6

J: Estimated value or limit

in mg/kg

TABLE F-15 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION GROUNDWATER SAMPLE RESULTS VOLATILE ORGANIC COMPOUNDS

CONSTITUENT	Sample ID	EGCMW-01	EGCMW-02	EGCMW-03	EGCMW-04	EGCMW-05	EGCMW-06	EGCMW-07
in ug/l	Date Collected	6/8/2011	6/6/2011	6/7/2011	6/6/2011	6/6/2011	6/6/2011	6/7/2011
· ·	New York State							
	Class GA							
	Groundwater							
	Standards and							
	Guidance Values							
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U
1,1,2-Trichloro-1,2,2-Trifluoroethane	5	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U
1,1-Dichloroethane	5	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	5	U	U	U	U	U	U	U
1,2,4-Trichlorobenzene	5	U	U	U	U	U	U	U
1,2-Dibromo-3-Chloropropane	0.04	U	U	U	U	U	U	U
1,2-Dibromoethane (Ethylene Dibromide)	0.0006	U	U	U	U	U	U	U
1,2-Dichlorobenzene	3	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U
1,2-Dichloropropane	1	U	U	U	U	U	U	U
1,3-Dichlorobenzene	3	U	U	U	U	U	U	U
1,4-Dichlorobenzene	3	U	U	U	U	U	U	U
1,4-Dioxane (p-Dioxane)		U	U	UJ	U	U	U	UJ
2-Hexanone	50	U	U	U	U	U	U	U
Acetone	50	U	U	UJ	U	U	U	UJ
Benzene	1 -	U	U	U	U	U	U	U
Bromochloromethane	5	U	U	U	U	U	U	U
Bromodichloromethane	50	U	U	U	U	U	U	U
Bromoform	50 5	U U	U U	U U	U U	U U	U U	U U
Bromomethane Carbon Disulfide	60	U	U	U	U	U	U	U
Carbon Tetrachloride	5	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U
Chloroethane	5	Ü	U	Ü	U	U	Ü	U
Chloroform	7	Ü	Ü	Ü	Ü	Ü	Ü	U
Chloromethane	5	Ü	Ü	Ü	Ü	Ü	Ü	Ü
cis-1,2-Dichloroethylene	5	Ü	Ü	Ü	Ü	Ü	Ü	Ü
cis-1,3-Dichloropropene	0.4	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Cyclohexane		Ü	Ü	Ü	Ü	Ü	Ü	Ü
Dibromochloromethane	50	U	U	U	U	U	U	U
Dichlorodifluoromethane	5	U	U	U	U	U	U	U
Ethylbenzene	5	U	0.58 J	U	U	U	U	U
Isopropylbenzene (Cumene)	5	U	1.6	U	U	U	U	U
m,p-Xylene (Sum Of Isomers)	5	U	1.1 J	U	U	U	U	U
Methyl Acetate	50	U	U	U	U	U	U	U
Methyl Ethyl Ketone (2-Butanone)	50	U	U	U	U	U	U	U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)		U	U	U	U	U	U	U
Methylcyclohexane		U	U	U	U	U	U	U
Methylene Chloride	5	U	U	U	U	U	U	U
o-Xylene (1,2-Dimethylbenzene)	5	U	U	U	U	U	U	U
Styrene	5	U	U	U	U	U	U	U
Tert-Butyl Methyl Ether	10	U	U	U	U	U	U	U
Tetrachloroethylene(PCE)	5	<u>6.1</u>	0.65 J	U	0.76 J	0.62 J	U	U
Toluene	5	U	U	U	U	U	U	U
Trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U
Trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U
Trichloroethylene (TCE)	5	3	U	0.98 J	U	U	U	U
Trichlorofluoromethane	5	U	U	U	U	U	1.2	U
Vinyl Chloride	2	U	U 17	U	U	U	U 0	U
Total VOCs		9	1.7 3.9	0 0.98	0	0 0.62	1.2	0
Total VOCs		у У	3.9	U.Y8	0.76	U.02	1.2	U

Exceeds Class GA Groundwater Standards and Guidance Values

ug/l: Micrograms per liter U: Not detected J: Estimated value or limit --: Not available

TABLE F-16 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION GROUNDWATER SAMPLE RESULTS SEMIVOLATILE ORGANIC COMPOUNDS

CONSTITUENT	Sample ID	EGCMW-01	EGCMW-02	EGCMW-03	EGCMW-04	EGCMW-05	EGCMW-06	EGCMW-07
in ug/l	Date Collected	6/8/2011	6/6/2011	6/7/2011	6/6/2011	6/6/2011	6/6/2011	6/7/2011
	New York State							
	Class GA Groundwater							
	Standards and							
	Guidance Values							
1,2,4,5-Tetrachlorobenzene	5	U	UJ	UJ	UJ	UJ	UJ	UJ
2,3,4,6-Tetrachlorophenol		Ü	UJ	UJ	UJ	UJ	UJ	UJ
2,4,5-Trichlorophenol	1	U	U	U	U	U	U	U
2,4,6-Trichlorophenol	1	U	U	U	U	U	U	U
2,4-Dichlorophenol	5	U	U	U	U	U	U	U
2,4-Dimethylphenol	50	U	U	U	U	U	U	U
2,4-Dinitrophenol	10	UJ	U	U	U	U	U	U
2,4-Dinitrotoluene 2,6-Dinitrotoluene	5 5	U U						
2-Chloronaphthalene	10	U	U	U	U	U	U	U
2-Chlorophenol	10	U	U	U	U	U	U	U
2-Methylnaphthalene		Ü	Ü	Ü	Ü	Ü	Ü	Ü
2-Methylphenol (o-Cresol)	1	Ü	Ū	Ü	Ü	Ü	Ü	Ü
2-Nitroaniline	5	U	U	U	U	U	U	U
2-Nitrophenol	1	U	U	U	U	U	U	U
3,3'-Dichlorobenzidine	5	U	U	U	U	U	U	U
3-Nitroaniline	5	U	U	U	U	U	U	U
4,6-Dinitro-2-Methylphenol		UJ	U	U	U	U	U	U
4-Bromophenyl Phenyl Ether		U	U	U	U	U	U	U
4-Chloro-3-Methylphenol 4-Chloroaniline	1 5	U U						
4-Nitroaniline	5	U	U	U	U	U	U	U
4-Nitrophenol	1	Ü	Ü	Ü	Ü	Ü	Ü	U
Acenaphthene	20	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Acenaphthylene		U	U	U	U	U	U	U
Acetophenone		U	U	U	U	U	U	U
Anthracene	50	U	U	U	U	U	U	U
Atrazine	7.5	U	U	U	U	U	U	U
Benzaldehyde		U U	UJ U	UJ U	UJ U	UJ U	UJ U	UJ U
Benzo(a)Anthracene Benzo(a)Pyrene	0.002	U	U	U	U	U	U	U
Benzo(b)Fluoranthene	0.002	U	U	U	U	U	U	U
Benzo(g,h,i)Perylene		Ü	Ü	Ü	Ü	Ü	Ü	Ü
Benzo(k)Fluoranthene	0.002	Ü	Ū	Ü	Ü	Ü	Ü	Ü
Benzyl Butyl Phthalate	50	U	U	U	U	U	U	U
Biphenyl (Diphenyl)	5	U	U	U	U	U	U	U
Bis(2-Chloroethoxy) Methane	5	U	U	U	U	U	U	U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)	1	U	U	U	U	U	U	U
Bis(2-Chloroisopropyl) Ether	 5	U U						
Bis(2-Ethylhexyl) Phthalate Caprolactam	5	U	U	U	U	U	U	U
Carbazole		U	U	Ü	U	U	U	U
Chrysene	0.002	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Cresols, m & p		U	U	U	U	U	U	U
Dibenz(a,h)Anthracene		U	U	U	U	U	U	U
Dibenzofuran		U	U	U	U	U	U	U
Diethyl Phthalate	50	U	U	U	U	U	U	U
Dimethyl Phthalate	50 50	U	U	U	U	U	U	U
Di-N-Butyl Phthalate Di-N-Octylphthalate	50 50	U U						
Fluoranthene	50 50	U	U	U	U	U	U	U
Fluorene	50	U	U	U	U	U	U	U
Hexachlorobutadiene	0.5	U	U	U	U	U	U	U
Hexachlorocyclopentadiene	5	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Hexachloroethane	5	U	U	U	U	U	U	U
Indeno(1,2,3-c,d)Pyrene	0.002	U	U	U	U	U	U	U
Isophorone	50	U	U	U	U	U	U	U
Naphthalene	10	U	U	U	U	U	U	U
Nitrobenzene	0.4	U	U	U	U	U	U	U
N-Nitrosodi-N-Propylamine	 50	U U						
N-Nitrosodiphenylamine Pentachlorophenol	50 1	U	U	U	U	U	U	U
Phenanthrene	50	U	U	U	U	U	U	U
Phenol	1	Ü	Ü	Ü	Ü	Ü	Ü	Ü
Pyrene	50	Ü	U	Ü	Ü	U	U	U
Total PAHs		0	0	0	0	0	0	0
Total SVOCs		0	0	0	0	0	0	0

ug/l: Micrograms per liter U: Not detected --: Not available

TABLE F-17 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION GROUNDWATER SAMPLE RESULTS TARGET ANALYTE LIST (TAL) METALS + CYANIDE

CONSTITUENT	Sample ID	EGCMW-01	EGCMW-02	EGCMW-02	EGCMW-03	EGCMW-04	EGCMW-05	EGCMW-06	EGCMW-06	EGCMW-07	EGCMW-07
in ug/l	Date Collected	6/8/2011	6/6/2011	9/9/2011	6/7/2011	6/6/2011	6/6/2011	6/6/2011	9/9/2011	6/7/2011	9/9/2011
	New York State Class GA Groundwater Standards and Guidance Values										
Aluminum		1,210	192		368	1,460 J	2,170 J	177 J		2,080	
Antimony	3	U	U		U	U	U	U		U	
Arsenic	25	U	4.41 J		U	4.53 J	U	U		U	
Barium	1,000	32.2 J	248		31.8 J	201	103	24.3 J		23.5 J	
Beryllium	3	U	U		U	U	U	U		U	
Cadmium	5	U	U		U	U	U	U		U	
Calcium		27,600	58,100		36,700	122,000	21,600	63,800		15,600	
Chromium, Total	50	2.6 J	U		U	2.12 J	U	U		U	
Cobalt		U	U		U	U	U	U		U	
Copper	200	2.07 J	U		2.69 J	U	U	U		4.15 J	
Iron	300	<u>1,170</u>	<u>442</u>		<u>607</u>	<u>1,460</u>	<u>1,600</u>	<u>999</u>		<u>3,260</u>	
Lead	25	3.55 J	4.77 J		U	3.53 J	5.09 J	5.44 J		U	
Magnesium	35,000	4,120	6,060 J		6,240	23,700 J	5,130 J	10,600 J		3,600	
Manganese	300	15.5	<u>354</u> <u>J</u>		125	26.2 J	103 J	21.4 J		<u>345</u>	
Mercury	0.7	U	0.14 J		0.16 J	U	U	U		U	
Nickel	100	5.77 J	7.55 J		U	7.06 J	U	U		U	
Potassium		2,490	7,180		2,020	17,100	3,280	2,440		1,260	
Selenium	10	6.46 J	U		5.24 J	U	U	U		UJ	
Silver	50	U	U		U	U	U	U		U	
Sodium	20,000	<u>58,700</u> <u>J</u>	<u>227,000</u>		5,450 J	<u>300,000</u>	<u>51,700</u>	U		7,080 J	
Thallium	0.5	U	U		U	U	U	U		U	
Vanadium		U	U		U	U	U	U		U	
Zinc	2,000	9.28 J	UJ		9.94 J	UJ	UJ	UJ		24.3	
Total Cyanide	200	U	U	U	14	6	13	<u>972</u> <u>D</u>	<u>1,590</u>	17	27
Free Cyanide				5.68 J					46.4		5.94

ug/l: Micrograms per liter U: Not detected

J: Estimated value
D: Detected at a secondary dilution

--: Not available or not analyzed

Exceeds Glass GA Groundwater Standards and Guidance Values

TABLE F-18 NATIONAL GRID EAST GARDEN CITY FORMER HOLDER STATION SITE CHARACTERIZATION GROUNDWATER SAMPLE RESULTS POLYCHLORINATED BIPHENYLS (PCBs)

CONSTITUENT	Sample ID	EGCMW-01	EGCMW-02	EGCMW-03	EGCMW-04	EGCMW-05	EGCMW-06	EGCMW-07
in ug/l	Date Collected	6/8/2011	6/6/2011	6/7/2011	6/6/2011	6/6/2011	6/6/2011	6/7/2011
	New York State Class							
	GA Groundwater							
	Standards							
	and Guidance Values							
PCB-1016 (Aroclor 1016)	0.09	U	U	U	U	U	U	U
PCB-1221 (Aroclor 1221)	0.09	U	U	U	U	U	U	U
PCB-1232 (Aroclor 1232)	0.09	U	U	U	U	U	U	U
PCB-1242 (Aroclor 1242)	0.09	U	U	U	U	U	U	U
PCB-1248 (Aroclor 1248)	0.09	U	U	U	U	U	U	U
PCB-1254 (Aroclor 1254)	0.09	U	U	U	U	U	U	U
PCB-1260 (Aroclor 1260)	0.09	U	U	U	U	U	U	U
PCB-1262 (Aroclor 1262)	0.09	U	U	U	U	U	U	U
PCB-1268 (Aroclor 1268)	0.09	U	U	U	U	U	U	U
Total PCBs	0.09	0	0	0	0	0	0	0

ug/l: Micrograms per liter U: Not detected --: Not available

APPENDIX G

DATA VALIDATION CHECKLISTS



DATA VALIDATION CHECKLIST

Project Name:	National Grid-East Gard	en City	
Project Number:	3008-C04		
Sample Date(s):	September 9, 2011		
Sample Team:	Paul Barusich		
Matrix/Number of Samples:	Water: 3 Field Duplicates/ 0 Trip Blanks / 0 Field Blanks/ 0		
Analyzing Laboratory:	META Environmental, In	nc, Watertown, MA.	
Analyses:	Free and Total Cyanide b	y SW846 Method 9016C	
Laboratory Report No:	DB110913	Date:9/20/2011	

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Repo	orted		mance ptable	Not
	No	Yes	No	Yes	Required
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Sample collection date		X		X	
5. Laboratory sample received date		X		X	
6. Sample analysis date		X		X	-
7. Copy of chain-of-custody form signed by Lab sample custodian		Х		, X	
Narrative summary of QA or sample problems provided	• .	Х		Х	

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers: DB110913 SAMPLE AND ANALYSIS LIST

		Sample	Parent		Analysis								
Sample ID	Lab ID	Collection Date	Sample	Cyanide	SVOC	РСВ	MET	ТРН					
EGCMW-06	DB110913-01	9/9/2011		X									
EGCMW-07	DB110913-02	9/9/2011		X									
EGCMW-02	DB110913-03	9/9/2011		X									

INORGANIC ANALYSES

Metals & Cyanide

	Repo	orted	Perfor Acce	Not	
	No .	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Preparation and calibration blanks		X		X	
B. Field blanks					X
3. Spike sample %R		X		X	
4. Duplicate %RPD		X	X		

[%]R - percent recovery

RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

10. The free cyanide RPD was above QC limits in the duplicate sample associated with sample EGCMW-02 and was qualified as estimated (J) in the sample.

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers:DB110913

Sample ID	Analyte(s)	Qualifier	Reason(s)
<u>Cyanide</u>			
EGCMW-02	Free Cyanide	J	RPD was above QC limits in the
			duplicate sample

VALIDATION PERFORMED BY & DATE:	Donna M. Brown 06/30/2011
VALIDATION PERFORMED BY SIGNATURE:	16-7R

[%]D - percent difference

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City
Project Number:	3008-C04
Sample Date(s):	April 25, 2011
Sample Team:	Paul Barusich
Matrix/Number	Soil/ 13
of Samples:	Field Duplicates/ 1
	Trip Blanks / 0
	Field Blanks/ 1
Analyzing Laboratory:	Chemtech, Mountainside, New Jersey
Analyses:	Semi volatile organic compounds (<u>SVOCs</u>), by USEPA method SW846 8270C Polychlorinated biphenyl (<u>PCBs</u>) by USEPA SW846 Method 8082 Total petroleum hydrocarbons (<u>TPH</u>) by USEPA SW846 Method 8100 Metals by SW846 Method 6010B and mercury (Hg) by Method 7470A/7471A Cyanide by SW846 Method 9012
Laboratory Report No:	C1993 Date:5/11/2011

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Sample results		X		X	-	
2. Parameters analyzed		X	•	X		
3. Method of analysis		X		X		
4. Sample collection date		X		X		
5. Laboratory sample received date	·	X		X	·	
6. Sample analysis date		X		X		
7. Copy of chain-of-custody form signed by Lab sample custodian		х		X		
Narrative summary of QA or sample problems provided		Χ.		X		

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C1993 SAMPLE AND ANALYSIS LIST

		Sample	Sample Parent		A	nalysis		
Sample ID	Lab ID	Collection Date	Sample	VOC	SVOC	РСВ	MET	ТРН
EGCSS-01	C1993-01	4/25/2011			Х.	х	х	х
EGCSS-02	C1993-02	4/25/2011			x	х	х	х
EGCSS-03	C1993-05	4/25/2011			х	х	х	х
FIELD BLANK	C1993-06	4/25/2011			x	х	х	х
EGCSS-04	C1993-07	4/25/2011			х	х	х	х
EGCSS-05	C1993-08	4/25/2011			. x	х	х	х
EGCSS-06	C1993-09	4/25/2011			х	х	х	х
EGCSS-07	C1993-10	4/25/2011			х	Χ.	х	х
EGCSS-08	C1993-11	4/25/2011			х	х	х	х
FIELD DUPLICATE	C1993-12	4/25/2011	EGCSS-03		х	х	х	х
EGCSS-13	C1993-13	4/25/2011			х	х	х	х
EGCSS-09	C1993-14	4/25/2011			х	х	Х	х
EGCSS-11	C1993-15	4/25/2011			х	х	х	х
EGCSS-10	C1993-16	4/25/2011			х	х	х	х
EGCSS-12	C1993-17	4/25/2011			х	х	х	х

ORGANIC ANALYSES SVOCS

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		X	X			
B. Field blanks		X		X		
3. Matrix spike (MS) %R		X	X			
4. Matrix spike duplicate (MSD) %R		X	X			
5. MS/MSD precision (RPD)		X	X			
6. Laboratory Control Sample %R		X	X		-	
7. Surrogate spike recoveries		X	X			
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's		X		X		
12. Transcriptions – quant report vs. Form I		X		Х		
13. Field duplicates RPD		X		X		
14. Tentatively Identified Compounds (TICs)		X		X		

SVOCs – Semi- volatile organic compounds %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

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Comments:

- 2A. Dimethylphthalate was detected in the method blank associated with all samples.

 Dimethylphthalate was qualified as non-detect (U) in samples EGCSS-07 and EGCSS-12 (reanalysis).
- 3-6. The benzaldehyde %R was below the QC limit in the MS, MSD and laboratory control sample associated with all samples and the RPD was above the QC limit in the MS/MSD. The %Rs for 1,2,4,5-tetrachlorobenzene and 2,3,4,6-tetrachlorophenol and naphthalene were above the QC limit in the MS and /or MSD associated with all samples. Benzaldehyde was qualified as estimated (UJ) in all samples.
- 7. The following samples had surrogates below QC limits: EGCSS-02 (Nitrobenzene-d5), EGCSS-05(2-Fluorophenol and Nitrobenzene-d5) and EGCSS-12 (2-Fluorophenol, Nitrobenzene-d5, and Phenol-d5). Sample EGCSS-12 was reanalyzed and all surrogates were within QC limit, therefore, the reanalysis was reported. The following compounds were qualified as estimated (J/UJ) in EGCSS-02 and EGCSS-05: nitrobenzene, isophorone 2-nitrophenol, 2,4-dimethylphenol, bis(2-chloroethoxy)methane, 2,4-dichlorophenol, naphthalene, 4-chloroaniline, hexachlorobutadiene, caprolactam, 4-chloro-3-methylphenol, 2-methylnaphthalene, 1,2,4,5-tetrachlorobenzene and hexachlorocyclopentadiene.

ORGANIC ANALYSES

PCBs

÷ .	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		X		X		
B. Field blanks		· X		X		
3. Matrix spike (MS) %R		X		X		
4. Matrix spike duplicate (MSD) %R		X		X	-	
5. MS/MSD precision (RPD)	·	X	·	X		
6. Laboratory Control Sample %R		X	,	X		
7. Surrogate spike recoveries		X	X		-	
8. GC Surrogate retention time summary		X		X		
9. Initial calibration %RSD's		X		Х		
10. Continuing calibration %D's		X		X		
11. Transcriptions – quant report vs. Form I		X		Х		
12. Identification summary		X	Х			
13. Field duplicates RPD		X		Х		

PCBs – Polychlorinated Biphenyls %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

- 7. A surrogate %R was below QC limits associated with sample EGCSS-03. PCBs were qualified as estimated (UJ) in sample EGCSS-03.
- 12. Duel column conformation %D for Aroclor-1260 was above 25% and qualified by the laboratory with a "P" in sample EGCSS-12. Aroclor-1260 was qualified as estimated (J) in sample EGCSS-12.

ORGANIC ANALYSES

TPH

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks		X		X	
B. Field blank		X		X	
3. Matrix spike (MS) %R					X
4. Matrix spike duplicate (MSD) %R					X
5. MS/MSD precision (RPD)					X
6. Laboratory Control Sample %R		X	·	X	
7. Surrogate spike recoveries		X		X	
8. Initial calibration RRF's and %RSD's		X		X	
9. Continuing calibration RRF's and %D's		X		Х	
10. Transcriptions – quant report vs. Form I		X		X	
11. Field duplicates RPD		X	X		

[%]D - percent difference %R - percent recovery

RRF - relative response factor

%RSD - percent relative standard deviation

RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

11. Sample EGCSS-03 was field duplicated and labeled FIELD DUPLICATE. TPH was qualified as estimated (J) in samples EGCSS-03 and FIELD DUPLICATE due a high RPD.

INORGANIC ANALYSES

Metals & Cyanide

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks				1		
A. Preparation and calibration blanks		X	X			
B. Field blanks		X		X		
3. Initial calibration verification %R		X		X		
4. Continuing calibration verification %R		X		X		
5. CRDL standard %R		X		X		
6. Interference check sample %R		X		X		
7. Laboratory control sample %R		X		X		
8. Spike sample %R		X		X		
Post digestive spike sample %R					X	
10. Duplicate %RPD		X	X			
11. Serial dilution check %D		X	X			
12. Total verse dissolved results					X	
13. Field duplicates RPD		X		X		

%R - percent recovery

%D - percent difference

RPD - relative percent difference

Comments:

- 2A. Cyanide was detected in the preparation blanks. Cyanide was detected at less than ten times the concentration found in the blanks and less than the contract required detection limit, therefore, qualified as non-detect (U) in samples EGCSS-01, EGCSS-03, EGCSS-04, EGCSS-05, EGCSS-07, EGCSS-11 and EGCSS-12.
- 10. The mercury RPD was above QC limits in the duplicate sample associated with samples EGCSS-10 and EGCSS-12. The sodium RPD was above QC limits in the duplicate sample associated with all samples. These metals were qualified as estimated (J/UJ) in associated samples.
- 11. Chromium and mercury were above the QC limit of 10 % for the serial dilution check sample associated with samples EGCSS-09, EGCSS-10, EGCSS-11, EGCSS-12 and EGCSS-13. Manganese was above the QC limit of 10 % for the serial dilution check sample associated with samples EGCSS-01, EGCSS-02, EGCSS-03, EGCSS-04, EGCSS-05, EGCSS-06, EGCSS-07, EGCSS-08 and FIELD DUPLICATE. These metals were qualified as estimated (J/UJ) in associated samples.

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers:C1993

QUALIFICATION SUI			Numbers:C1993
Sample ID	Analyte(s)	Qualifier	Reason(s)
SVOCs			
EGCSS-07 and EGCSS-12 (reanalysis).	Dimethylphthalate	U	Detected in the method blank
All samples	Benzaldehyde	UJ	%R was below the QC limit in the MS, MSD and laboratory control sample
EGCSS-12	All SVOCs report from reanalysis		Surrogate below in original analysis all good in reanalysis.
EGCSS-02 and EGCSS-05	Nitrobenzene, isophorone 2- nitrophenol, 2,4-dimethylphenol, bis(2-chloroethoxy)methane, 2,4-dichlorophenol, naphthalene, 4-chloroaniline, hexachlorobutadiene, caprolactam, 4-chloro-3- methylphenol, 2- methylnaphthalene, 1,2,4,5- tetrachlorobenzene and hexachlorocyclopentadiene	J/UJ	Surrogates below QC limits
DCD _o	<u> </u>		
PCBs	111		
EGCSS-03	All PCBs	UJ	Surrogates below QC limits
EGCSS-12	Aroclor-1260 with "P" qualifier	J	Duel column conformation %D was above 25%
TPH EGCSS-03 and FIELD DUPLICATE	ТРН	J	Field duplicated high RPD
Metals & Cyanide			
EGCSS-01, EGCSS-03, EGCSS-04, EGCSS-05, EGCSS-07, EGCSS-11 and EGCSS-12.	Cyanide	U	Detected in the preparation blanks
EGCSS-10 and EGCSS-	Mercury	J/UJ	RPD was above QC limits in the duplicate sample

Sample ID	Analyte(s)	Qualifier	Reason(s)
Metals & Cyanide continued			
All samples	Sodium	J/UJ	RPD was above QC limits in the duplicate sample
EGCSS-09, EGCSS-10, EGCSS-11, EGCSS-12 and EGCSS-13	Chromium and mercury	J/UJ	%Ds were above the QC limit of 10% for the serial dilution check sample
EGCSS-01, EGCSS-02, EGCSS-03, EGCSS-04, EGCSS-05, EGCSS-06, EGCSS-07, EGCSS-08 and FIELD DUPLICATE	Manganese	J/UJ	%Ds were above the QC limit of 10% for the serial dilution check sample

VALIDATION PERFORMED BY & DATE:	Donna M. Brown 06/30	/2011
VALIDATION PERFORMED BY SIGNATURE:	10-R	

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City
Project Number:	3008-C04
Sample Date(s):	April 27, 2011
Sample Team:	Paul Barusich
Matrix/Number	Soil/ 2
of Samples:	Field Duplicates/ 0
	Trip Blanks / 0
	Field Blanks/ 0
Analyzing Laboratory:	Chemtech, Mountainside, New Jersey
Analyses:	Volatile organic compounds (<u>VOCs</u>), by USEPA method SW846 8260B Semi volatile organic compounds (<u>SVOCs</u>), by USEPA method SW846 8270C Polychlorinated biphenyl (<u>PCBs</u>) by USEPA SW846 Method 8082 Total petroleum hydrocarbons (<u>TPH</u>) by USEPA SW846 Method 8100 <u>Metals</u> by SW846 Method 6010B and mercury (Hg) by Method 7471A <u>Cyanide</u> by SW846 Method 9012
Laboratory Report No:	C2019 Date:5/13/2011

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Sample results		. X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Sample collection date		X		X	
5. Laboratory sample received date		X		X	·
6. Sample analysis date		X		X	-
7. Copy of chain-of-custody form signed by Lab sample custodian		Х		X	
8. Narrative summary of QA or sample problems provided		X		Х	· · · · · · · · · · · · · · · · · · ·

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2019 SAMPLE AND ANALYSIS LIST

	Sample Parent Analysis							
Sample ID	Sample [1] [ah []] Collection	Sample	VOC	SVOC	РСВ	мет	ТРН	
EGCTP-01(1-2)	C2019-01	4/27/2011		х	x	Х	X	х
EGCHFD-01(0-1)	C2019-02	4/27/2011		x ·	х	х	х	х

ORGANIC ANALYSES VOCS

	Reported		Perfo Acce	Not	
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					-
A. Method blanks		X	X		
B. Trip blanks					X
C. Field blanks					X
3. Matrix spike (MS) %R		X	X		
4. Matrix spike duplicate (MSD) %R		X		X	
5. MS/MSD precision (RPD)		X		X	
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X		X	
8. Instrument performance check		X		X	
9. Internal standard retention times and areas		X		X	
10. Initial calibration RRF's and %RSD's		X		X	
11. Continuing calibration RRF's and %D's		X	X		
12. Transcriptions – quant report vs. Form I		X		Х	, ,
13. Field duplicates RPD			,		X
14. Tentatively Identified Compounds (TICs)		X		Х	

VOCs - volatile organic compounds %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor

RPD - relative percent difference

Comments:

- 2A. Methylene chloride was detected in the method blank associated with all samples. Methylene chloride was qualified as non-detect (U) in all samples.
- 3. 1,4-Dioxane had %R below the QC in the MS and was not detected in the associated samples, therefore, qualification of the data was not necessary
- 11. The bromochloromethane %D was above QC limits in the continuing calibration and qualified as estimated (UJ) in all samples.

ORGANIC ANALYSES SVOCS

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		X	X			
B. Field blanks					X	
3. Matrix spike (MS) %R		X	X.			
4. Matrix spike duplicate (MSD) %R		X	X			
5. MS/MSD precision (RPD)		X	X			
6. Laboratory Control Sample %R		X	X			
7. Surrogate spike recoveries		X	X			
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		X.		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's		X		Х		
12. Transcriptions – quant report vs. Form I	,	X		X		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		X		X		

SVOCs - Semi- volatile organic compounds %R - percent recovery %D - percent difference %RSD - percent relative standard deviation RRF - relative response factor RPD - relative percent difference

Comments:

- 2A. Dimethylphthalate were detected in the method blank and was not detected in the associated samples, therefore, qualification of the data was not necessary.
- 3-6. The benzaldehyde %R was below the QC limit in the MS, MSD and laboratory control sample associated with all samples and the RPD was above the QC limit in the MS/MSD. The RPD for 2,4-dinitrophenol was above the QC limit in the MS/MSD associated with all samples and not detected. Benzaldehyde was qualified as estimated (UJ) in all samples.
- 7. Numerous surrogates were above the QC limits in EGCHFD-01(0-1) dilution. Only phenanthrene was reported from sample EGCHFD-01(0-1) dilution and it was qualified as estimated (J).
- 12. Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
EGCHFD-01(0-1)	Phenanthrene	960000 E	2000000 D	2000000 D

ORGANIC ANALYSES

PCBs

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks	·]		
A. Method blanks		X		X	
B. Field blanks					X
3. Matrix spike (MS) %R		X	X		
4. Matrix spike duplicate (MSD) %R		X		X	
5. MS/MSD precision (RPD)		X	X		
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X	X		
8. GC Surrogate retention time summary		X		X	
9. Initial calibration %RSD's		X		X	
10. Continuing calibration %D's		X		X	
11. Transcriptions – quant report vs. Form I		X		Х	
12. Identification summary		X		X	
13. Field duplicates RPD					X

PCBs - Polychlorinated Biphenyls %R - percent recovery

%D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

- 3&5. The Aroclor 1260 %R was below the QC limit in the MS and RPD was above the QC limits in the MS/MSD and was not detected in the associated samples, therefore, qualification of the data was not necessary.
- 7. A surrogate %R was above QC limits associated with sample EGCHDP-01(0-1) and the reanalysis. PCBs were not detected in either analysis for sample EGCHDP-01(0-1) and the original analysis was reported with no qualification of the data necessary.

ORGANIC ANALYSES

TPH

	Re	Reported		rmance eptable	Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks		X		X	
B. Field blank					X
3. Matrix spike (MS) %R					X
4. Matrix spike duplicate (MSD) %R					X
5. MS/MSD precision (RPD)					X
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X		X	
8. Initial calibration RRF's and %RSD's		X		X	
9. Continuing calibration RRF's and %D's		X		X	
10. Transcriptions – quant report vs. Form I		X		X	
11. Field duplicates RPD					X

[%]D - percent difference %R - percent recovery

RRF - relative response factor %RSD - percent relative standard deviation

RPD - relative percent difference

Comments:

Performance was acceptable.

INORGANIC ANALYSES

Metals & Cyanide

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Preparation and calibration blanks		X		X		
B. Field blanks					X	
3. Initial calibration verification %R		X		X		
4. Continuing calibration verification %R		X		X		
5. CRDL standard %R		X		X		
6. Interference check sample %R		X		X		
7. Laboratory control sample %R		X		X		
8. Spike sample %R		X		X		
9. Post digestive spike sample %R					X	
10. Duplicate %RPD		X		X		
11. Serial dilution check %D		X		·X		
12. Total verse dissolved results			-		Х	
13. Field duplicates RPD					X	

[%]R - percent recovery

RPD - relative percent difference

Comments:

Performance was acceptable.

[%]D - percent difference

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers:C2019

QUALIFICATION 301	AIRAIVAI Z. I.	Laboratory Numbers:02019				
Sample ID	Analyte(s)	Qualifier	Reason(s)			
<u>VOCs</u>						
All samples	Methylene chloride	U	Detected in the method blank			
All samples	Bromochloromethane	UJ	%D was above QC limits in the continuing calibration			
SVOCs						
All samples	Benzaldehyde	UJ	%R was below the QC limit in the MS, MSD and laboratory control sample			
EGCHFD-01(0-1)	Phenanthrene	DJ	Report dilution and qualified (J) based on surrogates			
PCBs						
No qualification of the data was necessary.						
TPH						
No qualification of the data was necessary.						
Metals & Cyanide		-				
No qualification of the data was necessary.						

VALIDATION PERFORMED BY & DATE:	Donna M. Brown 07/5/2011	
VALIDATION PERFORMED BY SIGNATURE:	12-2-	

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City
Project Number:	3008-C04
Sample Date(s):	May 10, 2011
Sample Team:	Paul Barusich
Matrix/Number	Soil/ 1
of Samples:	Field Duplicates/ 0
•	Trip Blanks / 0
	Field Blanks/ 0
Analyzing	Chemtech, Mountainside, New Jersey
Laboratory:	Chomicon, Froundhiblec, 110W 301309
Analyses:	Volatile organic compounds (VOCs), by USEPA method SW846 8260B
	Semi volatile organic compounds (SVOCs), by USEPA method SW846 8270C
	Polychlorinated biphenyl (PCBs) by USEPA SW846 Method 8082
	Total petroleum hydrocarbons (TPH) by USEPA SW846 Method 8100
	Metals by SW846 Method 6010B and mercury (Hg) by Method 7470A/7471A
•	Cyanide by SW846 Method 9012
Laboratory	C2201 Date:5/26/2011
Report No:	

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Reported		Performance Acceptable		Not	
·	No	Yes	No	Yes	Required	
1. Sample results		X		X		
2. Parameters analyzed		X		X		
3. Method of analysis		X		X		
4. Sample collection date		X		X		
5. Laboratory sample received date		X		X		
6. Sample analysis date		X		X		
7. Copy of chain-of-custody form signed by Lab sample custodian		Х		X		
8. Narrative summary of QA or sample problems provided		Х		Х		

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2201 SAMPLE AND ANALYSIS LIST

		Sample	Parent		A	nalysis		
Sample ID	Lab ID	Collection Date	Sample	voc	SVOC	РСВ	MET	ТРН
EGCTP-02(1-2)	C2201-01	· 5/10/2011		х	х	Х	х	· x

ORGANIC ANALYSES VOCS

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X	-	
2. Blanks						
A. Method blanks		Х		X		
B. Trip blanks					X	
C. Field blanks					X	
3. Matrix spike (MS) %R		X		X		
4. Matrix spike duplicate (MSD) %R		X		X		
5. MS/MSD precision (RPD)		X		X		
6. Laboratory Control Sample %R		X		X		
7. Surrogate spike recoveries		X		X		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		Х		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's		X		Х	-	
12. Transcriptions – quant report vs. Form I		X		Х		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		X		X		

VOCs - volatile organic compounds %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable.

ORGANIC ANALYSES SVOCS

	Reported		Perfo Acce	Not	
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks		X	X		
B. Field blanks					X
3. Matrix spike (MS) %R		X	X		
4. Matrix spike duplicate (MSD) %R		X	X		
5. MS/MSD precision (RPD)		X	X		
6. Laboratory Control Sample %R		X	X		
7. Surrogate spike recoveries		X		X	
8. Instrument performance check		X		X	
9. Internal standard retention times and areas		X		X	
10. Initial calibration RRF's and %RSD's		X		X	
11. Continuing calibration RRF's and %D's		X		X	
12. Transcriptions – quant report vs. Form I		X		X	
13. Field duplicates RPD					X
14. Tentatively Identified Compounds (TICs)				-	X

SVOCs - Semi- volatile organic compounds %R - percent recovery

RRF - relative response factor RPD - relative percent difference

Comments:

- 2A. Dimethylphthalate was detected in the method blank associated with all samples. Dimethylphthalate was qualified as non-detect (U) in sample EGCTP-02(1-2).
- 3-6. The benzaldehyde %R was below the QC limit in the MS, MSD and laboratory control sample associated with all samples and the RPD was above the QC limit in the MS/MSD. The RPD for 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, 4-chloroaniline, benzaldehyde, fluoranthene and pyrene were above the QC limit in the MS/MSD associated with all samples and not detected. Benzaldehyde, fluoranthene and pyrene was qualified as estimated (J/UJ) in sample EGCTP-02(1-2).
- 12. Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Sample ID Compound		Diluted Analysis	Reported Analysis
EGCTP-02(1-2)	Pyrene	21000 E	24000 D	24000 D

[%]D - percent difference %RSD - percent relative standard deviation

ORGANIC ANALYSES

PCBs

	Re	Reported		rmance eptable	Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks		X		X	
B. Field blanks		•			X
3. Matrix spike (MS) %R		X		Х	
4. Matrix spike duplicate (MSD) %R		X		Х	-
5. MS/MSD precision (RPD)		X	X		
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X	X		
8. GC Surrogate retention time summary		X		X	
9. Initial calibration %RSD's		X		. X	
10. Continuing calibration %D's		X		X	
11. Transcriptions – quant report vs. Form I		X		X	
12. Identification summary		X		X	
13. Field duplicates RPD					X

PCBs - Polychlorinated Biphenyls %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

- 5. The Aroclor 1016 RPD was above the QC limits in the MS/MSD and was not detected in the associated sample, therefore, qualification of the data was not necessary.
- 7. A surrogate %R was above QC limits associated with sample EGCTP-02(1-2). PCBs were not detected in sample EGCTP-02(1-2), therefore, no qualification of the data necessary.

ORGANIC ANALYSES

TPH

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks	-				
A. Method blanks		· X		X	
B. Field blank					X
3. Matrix spike (MS) %R		X		X	
4. Matrix spike duplicate (MSD) %R		X		X	
5. MS/MSD precision (RPD)		X		X	
6. Laboratory Control Sample %R	-	X		X	
7. Surrogate spike recoveries		X		X	
8. Initial calibration RRF's and %RSD's		X	-	X	
9. Continuing calibration RRF's and %D's		X		X	
10. Transcriptions – quant report vs. Form I		X		Χ.	
11. Field duplicates RPD					X

[%]D - percent difference %R - percent recovery

RRF - relative response factor %RSD - percent relative standard deviation

RPD - relative percent difference

Comments:

Performance was acceptable.

INORGANIC ANALYSES

Metals & Cyanide

	Repo	Reported		Performance Acceptable	
	No	Yes	No	Yes	Required
1. Holding times		X		· X	
2. Blanks					
A. Preparation and calibration blanks		Χ.		X	
B. Field blanks					X
3. Initial calibration verification %R		X		X	
4. Continuing calibration verification %R		X		X	
5. CRDL standard %R		X	X		
6. Interference check sample %R		X		X	
7. Laboratory control sample %R		X		X	
8. Spike sample %R		X		X	
9. Post digestive spike sample %R					X
10. Duplicate %RPD		X	X		
11. Serial dilution check %D		X		X	
12. Total verse dissolved results					X
13. Field duplicates RPD					X

[%]R - percent recovery

RPD - relative percent difference

Comments:

- 5. The arsenic %R was below and lead and selenium %Rs were above the QC limits in the CRDL standard. Arsenic was qualified as estimated (J) in sample EGCTP-02(1-2).
- 10. The sodium RPD was above the QC limit of 20% for the laboratory duplicate associated the sample. Sodium was qualified as estimated (J) in sample EGCTP-02(1-2).

[%]D - percent difference

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers:C2201

QUALIFICATION SC	DIVIDART	Laboratory Numbers: C2201			
Sample ID	Analyte(s)	Qualifier	Reason(s)		
VOCs					
No qualification of the					
data was necessary.					
OT IO C		1			
SVOCs					
EGCTP-02(1-2)	Dimethylphthalate	U	Detected in the method blank		
EGCTP-02(1-2)	Fluoranthene and pyrene	J	RPDs were above the QC limit in the MS/MSD		
EGCTP-02(1-2)	Benzaldehyde	UJ	%R was below the QC limit in the MS, MSD and laboratory control sample		
EGCTP-02(1-2)	Pyrene	D	Report dilution		
PCBs					
No qualification of the data was necessary.			·		
ТРН					
No qualification of the data was necessary.					
Metals & Cyanide	· · · · · · · · · · · · · · · · · · ·				
EGCTP-02(1-2)	Arsenic	J	%R was below in the CRDL standard		
EGCTP-02(1-2)	Sodium	J	RPD was above the QC limit of 20% for the laboratory duplicate		

VALIDATION PERFORMED BY & DATE:	Donna M. Brown	07/5/2011
VALIDATION PERFORMED BY SIGNATURE:	10~~	2

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City
Project Number:	3008-C04
Sample Date(s):	May 12, 2011
Sample Team:	Paul Barusich
Matrix/Number	<u>Soil/ 4</u>
of Samples:	Field Duplicates/ 1
	Trip Blanks / 0
	Field Blanks/ 1
Analyzing Laboratory:	Chemtech, Mountainside, New Jersey
Analyses:	Volatile organic compounds (<u>VOCs</u>), by USEPA method SW846 8260B Semi volatile organic compounds (<u>SVOCs</u>), by USEPA method SW846 8270C Polychlorinated biphenyl (<u>PCBs</u>) by USEPA SW846 Method 8082 Total petroleum hydrocarbons (<u>TPH</u>) by USEPA SW846 Method 8015B and Fingerprint by USEPA SW846 Method 8015 <u>Metals</u> by SW846 Method 6010B and mercury (Hg) by Method 7470A/7471A <u>Cyanide</u> by SW846 Method 9012
Laboratory Report No:	C2222 Date:5/31/2011

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Sample results		X		X		
2. Parameters analyzed		X		X		
3. Method of analysis		X		X		
4. Sample collection date		X		X		
5. Laboratory sample received date		X		X		
6. Sample analysis date		X		X		
7. Copy of chain-of-custody form signed by Lab sample custodian		Х	· · · · · · · · · · · · · · · · · · ·	X		
8. Narrative summary of QA or sample problems provided		X		X		

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2222 SAMPLE AND ANALYSIS LIST

		Sample	Parent	Analysis					
Sample ID	Lab ID	b ID Collection Parent Sample		VOC	SVOC	РСВ	MET	ТРН	
EGCSB-03(14-16)	C2222-01	5/12/2011		x	х	х	х	х	
EGCSB-04(14-16)	C2222-02	5/12/2011		х	x	x	X	х	
EGCSB-04(12-14)	C2222-03	5/12/2011		x	x	X	х	Х	
EGCSB-03(23-25)	C2222-04	5/12/2011		х	x	х	х	х.	
FIELDBLANK2	C2222-05	5/12/2011		х	х	X .	х	х	
FIELDDUPLICATE			EGCSB-						
2	C2222-06	5/12/2011	03(14-16)	x	x	х	х	х	

ORGANIC ANALYSES VOCS

	Reported		Performance Acceptable		Not	
,	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks		•				
A. Method blanks		X		X		
B. Trip blanks					X	
C. Field blanks		X		X		
3. Matrix spike (MS) %R		X		X		
4. Matrix spike duplicate (MSD) %R		X		X		
5. MS/MSD precision (RPD)	1	X	X			
6. Laboratory Control Sample %R		X	X			
7. Surrogate spike recoveries		X		X .		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's]	X		X		
12. Transcriptions – quant report vs. Form I		X		X		
13. Field duplicates RPD		X		Х	**************************************	
14. Tentatively Identified Compounds (TICs)		X		X		

VOCs - volatile organic compounds %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

- 5. The methyl acetate RPD was above the QC in the MS/MSD associated with the soil samples. The 1,1,2-trichlorotrifluoroethane, 1,2,3-trichlorobenzene, 1,4-dioxane, 2-butanone, acetone and methyl acetate RPD were above the QC in the MS/MSD associated with the field blank. They were not detected in the associated samples; therefore, qualification of the data was not necessary.
- 6. The 1,4-dioxane had %R above the QC in the laboratory control sample associated with the field blank and was not detected in the associated sample, therefore, qualification of the data was not necessary.

ORGANIC ANALYSES SVOCS

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		X		X		
B. Field blanks		X		X		
3. Matrix spike (MS) %R		X	Х		*****	
4. Matrix spike duplicate (MSD) %R		X	X			
5. MS/MSD precision (RPD)		X	X			
6. Laboratory Control Sample %R		X	Х			
7. Surrogate spike recoveries		X		X		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's		X		Х		
12. Transcriptions – quant report vs. Form I		X		X		
13. Field duplicates RPD		X		X		
14. Tentatively Identified Compounds (TICs)		Χ :		X		

SVOCs – Semi-volatile organic compounds %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

3-6. The benzaldehyde %R was below the QC limit in the MS, MSD and laboratory control sample associated with all samples and the RPD was above the QC limit in the MS/MSD. Benzaldehyde was qualified as estimated (UJ) in all samples.

ORGANIC ANALYSES

PCBs

	Reported			rmance eptable	Not	
	No	Yes	No	Yes	Required	
Holding times		X		X		
2. Blanks						
A. Method blanks		X		X		
B. Field blanks		X		X		
3. Matrix spike (MS) %R	-	X	X			
4. Matrix spike duplicate (MSD) %R		X	X			
5. MS/MSD precision (RPD)		X		X		
6. Laboratory Control Sample %R		X		X		
7. Surrogate spike recoveries	1	X	·	X		
8. GC Surrogate retention time summary		X		X		
9. Initial calibration %RSD's		X		X		
10. Continuing calibration %D's		X		X		
11. Transcriptions – quant report vs. Form I		X		X		
12. Identification summary		X		X		
13. Field duplicates RPD		X		. X		

PCBs – Polychlorinated Biphenyls %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

3&4. The %R for aroclor 1016 was above the QC limit in the MS and MSD associated with the field blank and was not detected in the associated sample, therefore, qualification of the data was not necessary.

ORGANIC ANALYSES

TPH &Fingerprint

	Re	Reported		rmance eptable	Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks		X		X	
B. Field blank		X		X	
3. Matrix spike (MS) %R		X		X	
4. Matrix spike duplicate (MSD) %R		X		X	
5. MS/MSD precision (RPD)		X		X	
6. Laboratory Control Sample %R		X		X.	
7. Surrogate spike recoveries		X		X	
8. Initial calibration RRF's and %RSD's		X		X	
9. Continuing calibration RRF's and %D's		X		X	
10. Transcriptions – quant report vs. Form I		X		X	
11. Field duplicates RPD		X		X	

[%]D - percent difference %R - percent recovery

RRF - relative response factor %RSD - percent relative standard deviation

RPD - relative percent difference

Comments:

Performance was acceptable.

INORGANIC ANALYSES

Metals & Cyanide

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks		1			
A. Preparation and calibration blanks		X	X		
B. Field blanks		X	X		
3. Initial calibration verification %R		X		X	
4. Continuing calibration verification %R		X		X	
5. CRDL standard %R		X	X		
6. Interference check sample %R		X		X	
7. Laboratory control sample %R		X		X	
8. Spike sample %R		X		X	
9. Post digestive spike sample %R					X
10. Duplicate %RPD		X,	X		
11. Serial dilution check %D		X	Х		
12. Total verse dissolved results			-		X
13. Field duplicates RPD		X		X	

[%]R - percent recovery

RPD - relative percent difference

Comments:

- 2A&B. Aluminum, magnesium, thallium and zinc were detected in the preparation and/or field blank and were not detected in the associated samples; therefore, qualification of the data was not necessary.
- 5. The copper %R was below the QC limits in the CRDL standard. Copper was qualified as estimated (J) in all soil samples.
- 10. The chromium and sodium RPDs were above the QC limit of 20% for the laboratory duplicate associated with the soil samples. They were qualified as estimated (J) in the soil samples.
- 11. Copper was above the QC limit of 10 % for the serial dilution check sample associated with the soil samples and were qualified as estimated (J) in associated samples.

[%]D - percent difference

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory	Numbers:C2222
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QUALII IOATION 30	INITIAL I	Laboratory Numbers: CZZZZ			
Sample ID	Analyte(s)	Qualifier	Reason(s)		
VOCs					
No qualification of the					
data was necessary.					
SVOCs					
All soil samples	Benzaldehyde	UJ	%R was below the QC limit in		
1			the MS, MSD and laboratory		
			control sample		
PCBs					
No qualification of the					
data was necessary.					
dua was necessary.					
TPH& Fingerprint			100000000000000000000000000000000000000		
No qualification of the					
data was necessary.					
Metals & Cyanide					
All soil samples	Copper	J	%R was below in the CRDL		
•			standard and serial dilution above		
	,		QC limits		
All soil samples	Chromium and sodium	J	RPD was above the QC limit of		
			20% for the laboratory duplicate		

VALIDATION PERFORMED BY & DATE:	Donna M. Brown	07/11/2011
VALIDATION PERFORMED BY SIGNATURE:	10-	R

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City
Project Number:	3008-C04
Sample Date(s):	May 13, 2011
Sample Team:	Paul Barusich
Matrix/Number	Soil/4
of Samples:	Field Duplicates/ 0
	Trip Blanks / 0
•	Field Blanks/ 0
Analyzing	Chemtech, Mountainside, New Jersey
Laboratory:	Chemicen, Mountainside, New Jersey
Analyses:	Volatile organic compounds (VOCs), by USEPA method SW846 8260B
	Semi volatile organic compounds (SVOCs), by USEPA method SW846 8270C
	Polychlorinated biphenyl (PCBs) by USEPA SW846 Method 8082
	Total petroleum hydrocarbons (TPH) by USEPA SW846 Method 8015B
	Metals by SW846 Method 6010B and mercury (Hg) by Method 7470A/7471A
	Cyanide by SW846 Method 9012
Laboratory	C2241 Date:6/01/2011
Report No:	C2241 Date:6/01/2011

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Repo	orted		mance ptable	Not
	No	Yes	No	Yes	Required
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Sample collection date		X		X	
5. Laboratory sample received date		X		X	
6. Sample analysis date		X		X	
7. Copy of chain-of-custody form signed by Lab sample custodian		Х		Х	:
8. Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2241 SAMPLE AND ANALYSIS LIST

		Sample Collection	Parent		Analysis			
Sample ID	Lab ID	Date	Sample	VOC	SVOC	Pest	MET	TPH
EGCSB-05(14-16)	C2241-01	5/13/2011		х	х	х	х	х
EGCSB-05(12-14)	C2241-02	5/13/2011		x	х	x	х	X ·
EGCSB-07(14.5- 16.5)	C2241-03	5/13/2011		х	х	x	x	х
EGCSB-07(10-12)	C2241-04	5/13/2011		X	Х	х	X	х

ORGANIC ANALYSES VOCS

	Reported		1	rmance eptable	Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks	Ţ,				
A. Method blanks		X		X	
B. Trip blanks					X
C. Field blanks					X
3. Matrix spike (MS) %R		X		X	
4. Matrix spike duplicate (MSD) %R		X		X	
5. MS/MSD precision (RPD)		X	X		
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X		X	
8. Instrument performance check		X		X	
9. Internal standard retention times and areas		X		X	
10. Initial calibration RRF's and %RSD's		X		Х	
11. Continuing calibration RRF's and %D's		X		Х	,
12. Transcriptions – quant report vs. Form I		X		Х	
13. Field duplicates RPD					X
14. Tentatively Identified Compounds (TICs)		X		Х	

VOCs - volatile organic compounds %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable with the following exception:

5. The acetone RPD was above the QC in the MS/MSD associated with all the samples and was not detected in the associated samples; therefore, qualification of the data was not necessary.

ORGANIC ANALYSES SVOCS

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks	1					
A. Method blanks		X	X		-	
B. Field blanks					X	
3. Matrix spike (MS) %R		X	X			
4. Matrix spike duplicate (MSD) %R		X	X			
5. MS/MSD precision (RPD)		X	X			
6. Laboratory Control Sample %R		X	X			
7. Surrogate spike recoveries		X		X		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's		X		X		
12. Transcriptions – quant report vs. Form I		X		Х		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		X		Х		

SVOCs -- Semi- volatile organic compounds %R - percent recovery

%D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor

RPD - relative percent difference

Comments:

- 2A. Dimethylphthalate was detected in the method blank associated with all samples. Dimethylphthalate was qualified as non-detect (U) in all samples.
- 3-6. The benzaldehyde %R was below the QC limit in the MS, MSD and laboratory control sample associated with all samples. The RPD for 4-chloroaniline was above the QC limit in the MS/MSD associated with all samples and not detected. Benzaldehyde was qualified as estimated (UJ) in all samples.
- 12. Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
EGCSB-07(10-12)	Fluoranthene	3100 E	3500 D	3500 D

ORGANIC ANALYSES PCBs

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks		*			
A. Method blanks		X		X	
B. Field blanks			·		X
3. Matrix spike (MS) %R		X		X	
4. Matrix spike duplicate (MSD) %R		X		X	
5. MS/MSD precision (RPD)		X		X	
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X	X		
8. GC Surrogate retention time summary		X		· X	
9. Initial calibration %RSD's		X		X	
10. Continuing calibration %D's		X		X	
11. Transcriptions – quant report vs. Form I		X		X	
12. Identification summary		X		X	
13. Field duplicates RPD					X

PCBs – Polychlorinated Biphenyls %R - percent recovery

%D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

7. A surrogate %R was above QC limits associated with sample EGCSB-07(14.5-16.5) and the reanalysis. PCBs were not detected in either analysis for sample EGCSB-07(14.5-16.5) and the original analysis was reported with no qualification of the data necessary.

ORGANIC ANALYSES

TPH

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks		X		X	
B. Field blank					X
3. Matrix spike (MS) %R		X		X	
4. Matrix spike duplicate (MSD) %R		X	X		
5. MS/MSD precision (RPD)		X	X		
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X		X	
8. Initial calibration RRF's and %RSD's		X		X	
9. Continuing calibration RRF's and %D's		X		X	
10. Transcriptions – quant report vs. Form I		X		X	
11. Field duplicates RPD					X

[%]D - percent difference %R - percent recovery

RPD - relative percent difference

Comments:

Performance was acceptable, with the following exceptions:

The %R for TPH was below QC limits in the MSD and the RPD was above the QC in the 4-5. MS/MSD and TPH was qualified as estimated (J) in all samples.

RRF - relative response factor %RSD - percent relative standard deviation

INORGANIC ANALYSES

Metals & Cyanide

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Preparation and calibration blanks		X	X		
B. Field blanks					Х
3. Initial calibration verification %R		X		X	
4. Continuing calibration verification %R		X		X	
5. CRDL standard %R		X	X		
6. Interference check sample %R		Х		X	
7. Laboratory control sample %R		Х		X	
8. Spike sample %R		X		X	
9. Post digestive spike sample %R					X
10. Duplicate %RPD		X	X	j	
11. Serial dilution check %D		X	X		<u></u>
12. Total verse dissolved results					X
13. Field duplicates RPD		X	,	Х	

[%]R - percent recovery

%D - percent difference

RPD - relative percent difference

Comments:

- 2A. Aluminum, cyanide, magnesium and thallium were detected in the preparation blank. Cyanide was qualified as non-detect (U) for all samples.
- 5. The copper %R was below the QC limits in the CRDL standard. Copper was qualified as estimated (J) in all the samples.
- 10. The chromium and sodium RPDs were above the QC limit of 20% for the laboratory duplicate associated with the soil samples. They were qualified as estimated (J) in the soil samples.
- 11. Copper was above the QC limit of 10 % for the serial dilution check sample associated with the soil samples and were qualified as estimated (J) in associated samples.

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers:C2241

QUALIFICATION SUI	MMARY	Laboratory Numbers:C2241			
Sample ID	Analyte(s)	Qualifier	Reason(s)		
VOCs					
No qualification of the					
data was necessary.					
GVOC					
SVOCs					
All samples	Dimethylphthalate	U	Detected in method blank		
All samples	Benzaldehyde	UJ	%R was below the QC limit in the MS, MSD and laboratory control sample		
EGCSB-07(10-12)	Fluoranthene	D	Report from secondary dilution		
PCBs					
EGCSB-07(14.5-16.5)	Original analysis		Surrogate above QC		
TPH					
All samples	ТРН	J	%R was below QC limits in the MSD and the RPD was above the QC		
Metals & Cyanide	· · · · · · · · · · · · · · · · · · ·				
All samples	Cyanide	U	Detected in preparation blank		
All samples	Copper	J	%R was below in the CRDL standard and serial dilution above QC limits		
All samples	Chromium and sodium	J	RPD was above the QC limit of 20% for the laboratory duplicate		

VALIDATION PERFORMED BY & DATE:	Donna M. Brown	07/11/2011
VALIDATION PERFORMED BY SIGNATURE:	10-	- P

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City
Project Number:	3008-C04
Sample Date(s):	May 17, 2011
Sample Team:	Paul Barusich
Matrix/Number	Soil/ 4
of Samples:	Field Duplicates/ 0
•	Trip Blanks / 0
	Field Blanks/ 0
Analyzing	Chemtech, Mountainside, New Jersey
Laboratory:	Chemicon, Moditaniside, New Jersey
Analyses:	Volatile organic compounds (VOCs), by USEPA method SW846 8260B
•	Semi volatile organic compounds (SVOCs), by USEPA method SW846 8270C
	Polychlorinated biphenyl (PCBs) by USEPA SW846 Method 8082
	Total petroleum hydrocarbons (TPH) by USEPA SW846 Method 8015B
	Metals by SW846 Method 6010B and mercury (Hg) by Method 7470A/7471A
	Cyanide by SW846 Method 9012
Laboratory	C2263 Date:6/02/2011
Report No:	C2263 Date:6/02/2011

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Rep	orted	Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Sample results		X		X		
2. Parameters analyzed		X		X		
3. Method of analysis		X		X		
4. Sample collection date		X		X		
5. Laboratory sample received date		X		X		
6. Sample analysis date		X		X		
7. Copy of chain-of-custody form signed by Lab sample custodian		X		Х		
8. Narrative summary of QA or sample problems provided		X		X		

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2263 SAMPLE AND ANALYSIS LIST

		Sample	Parent	Analysis					
Sample ID	Lab ID	Collection Date	Sample	VOC	SVOC	РСВ	MET	ТРН	
EGCSB-10(17.5- 19.5)	C2263-01	5/17/2011		x	х	х	x	х	
EGCSB-10(8-10)	C2263-02	5/17/2011		х	х	х	х	х	
EGCSB-01(18-20)	C2263-03	5/17/2011		х	х	X	х	х	
EGCSB-01(8-10)	C2263-04	5/17/2011	· · · · · · · · · · · · · · · · · · ·	х	x	х	х	х	

ORGANIC ANALYSES VOCS

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X	-	
2. Blanks						
A. Method blanks		X	X			
B. Trip blanks					X	
C. Field blanks					X	
3. Matrix spike (MS) %R		X	X			
4. Matrix spike duplicate (MSD) %R		X	X			
5. MS/MSD precision (RPD)		X	Х			
6. Laboratory Control Sample %R		X		Х		
7. Surrogate spike recoveries		X		Х		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's		X		Х		
11. Continuing calibration RRF's and %D's		X		Х	÷	
12. Transcriptions – quant report vs. Form I		X		X		
13. Field duplicates RPD					Х	
14. Tentatively Identified Compounds (TICs)		X		х		

VOCs - volatile organic compounds %R - percent recovery

%D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

- 2A. Methylene chloride was detected in the method blank associated with all samples. Methylene chloride was qualified as non-detect (U) in EGCSB-01(8-10).
- 3-5. The methylene chloride %R was above the QC limit in the MS and MSD and the RPD was above the QC limits. The RPD for methyl acetate was above the QC limit in the MS/MSD associated with all samples and not detected. Methylene chloride was qualified as estimated (J) only if detected in all samples.

ORGANIC ANALYSES SVOCS

	Reported		Performance Acceptable		Not	
·	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks	,					
A. Method blanks		X	X			
B. Field blanks					X	
3. Matrix spike (MS) %R		X	X			
4. Matrix spike duplicate (MSD) %R		X	X		•	
5. MS/MSD precision (RPD)		X	X			
6. Laboratory Control Sample %R		X	X			
7. Surrogate spike recoveries		X		X		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's		X		X		
12. Transcriptions – quant report vs. Form I		X		X		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		X		Х		

SVOCs -Semi-volatile organic compounds

%R - percent recovery

%D - percent difference %RSD - percent relative standard deviation RRF - relative response factor

RPD - relative percent difference

Comments:

- 2A. Dimethylphthalate were detected in the method blank and was not detected in the associated samples, therefore, qualification of the data was not necessary.
- 3-6. The benzaldehyde %R was below the QC limit in the MS, MSD and laboratory control sample associated with all samples. The RPD was above the QC limit in the MS/MSD for 2,2-oxybis(1-chloropropane), 2-chlorophenol, 3-nitroaniline, 4-chloroaniline, benzaldehyde, bis(2-chloroethyl)ether, hexachlorobutadiene, hexachloroethane, naphthalene and phenol associated with all samples. These compounds were not detected in the associated samples, therefore, only benzaldehyde was qualified as estimated (UJ) in all samples.

ORGANIC ANALYSES PCBs

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		X		X		
B. Field blanks					X	
3. Matrix spike (MS) %R		X	X			
4. Matrix spike duplicate (MSD) %R		X	X			
5. MS/MSD precision (RPD)		X		X		
6. Laboratory Control Sample %R		X		X		
7. Surrogate spike recoveries		X		X		
8. GC Surrogate retention time summary		X		X		
9. Initial calibration %RSD's		X		X		
10. Continuing calibration %D's		X		X		
11. Transcriptions – quant report vs. Form I		Х		X		
12. Identification summary		X		X		
13. Field duplicates RPD					Y	

PCBs - Polychlorinated Biphenyls %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

3&4. The Aroclor 1016 and Aroclor 1260 %Rs were above the QC limit in the MS and MSD and was not detected in the associated samples, therefore, qualification of the data was not necessary.

ORGANIC ANALYSES

TPH

	Re	ported		rmance eptable	Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks	1	X		X	
B. Field blank	1				X
3. Matrix spike (MS) %R		X		Х	
4. Matrix spike duplicate (MSD) %R		X		Х	-
5. MS/MSD precision (RPD)		Х	X		
6. Laboratory Control Sample %R		X		Х	
7. Surrogate spike recoveries		Х		х	
8. Initial calibration RRF's and %RSD's		Х		Х	
9. Continuing calibration RRF's and %D's		X		Х	
10. Transcriptions – quant report vs. Form I		X		Х	
11. Field duplicates RPD					X

[%]D - percent difference %R - percent recovery

RPD - relative percent difference

Comments:

Performance was acceptable with the following exception:

The TPH RPD was above the QC in the MS/MSD and was qualified as estimated (J) in all 5. samples.

RRF - relative response factor %RSD - percent relative standard deviation

INORGANIC ANALYSES

Metals & Cyanide

	Reported			mance ptable	Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Preparation and calibration blanks		X	X			
B. Field blanks					Х	
3. Initial calibration verification %R		X		X		
4. Continuing calibration verification %R		Х		X		
5. CRDL standard %R		Х		X		
6. Interference check sample %R		X		X		
7. Laboratory control sample %R		X	X			
8. Spike sample %R		X		X		
9. Post digestive spike sample %R					X	
10. Duplicate %RPD		X		X		
11. Serial dilution check %D		X	X	·	-	
12. Total verse dissolved results					Х	
13. Field duplicates RPD					X	

[%]R - percent recovery

RPD - relative percent difference

Comments:

- 2A. Cyanide was detected in the preparation blank. Cyanide was qualified as non-detect (U) for all samples.
- 7. Thallium %R was below QC limits in the laboratory control sample. The thallium results were qualified as estimated (J/UJ) in all samples.
- 11. Chromium was above the QC limit of 10 % for the serial dilution check sample associated with the samples. It was qualified as estimated (J/UJ) in the samples.

[%]D - percent difference

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory No	umbers:C2263
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Laboratory Warmbers.02203					
Sample ID	Analyte(s)	Qualifier	Reason(s)		
<u>VOCs</u>					
EGCSB-01(8-10)	Methylene chloride	U	Detected in the method blank		
· · ·					
All samples	Methylene chloride	J if detected	%R was above the QC limit in the MS and MSD and the RPD was above the QC limits		
SVOCs					
All samples	Benzaldehyde	UJ	%R was below the QC limit in the MS, MSD and laboratory control sample		
PCBs	·				
No qualification of the data was necessary.					
TPH					
All samples	ТРН	J	RPD was above the QC in the MS/MSD		
Man of the					
Metals & Cyanide					
All samples	Cyanide	U.	Detected in preparation blank		
All samples	Thallium	J/UJ	%R was below QC limits in the laboratory control sample		
All samples	Chromium	J/UJ	Serial dilution above QC limits		

Donna M. Brown 07/11/2011	VALIDATION PERFORMED BY & DATE:
10 mp	VALIDATION PERFORMED BY SIGNATURE:
10	

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City
Project Number:	3008-C04
Sample Date(s):	May 18, 2011
Sample Team:	Paul Barusich
Matrix/Number	Soil/ 2
of Samples:	Field Duplicates/ 0
	Trip Blanks / 0
	Field Blanks/ 0
Analyzing	Chemtech, Mountainside, New Jersey
Laboratory:	Chemicen, Wouldaniside, New Jersey
Analyses:	Volatile organic compounds (<u>VOCs</u>), by USEPA method SW846 8260B
	Semi volatile organic compounds (SVOCs), by USEPA method SW846 8270C
	Polychlorinated biphenyl (PCBs) by USEPA SW846 Method 8082
	Total petroleum hydrocarbons (TPH) by USEPA SW846 Method 8015B
	Metals by SW846 Method 6010B and mercury (Hg) by Method 7471A
	Cyanide by SW846 Method 9012
Laboratory	C2293 Date:6/03/2011
Report No:	52275 5445.0107£011

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Repo	orted		mance ptable	Not
	No	Yes	No	Yes	Required
1. Sample results		X		X	
2. Parameters analyzed		Х		X	
3. Method of analysis	-	X		X	
4. Sample collection date		X		X	
5. Laboratory sample received date		X		X	
6. Sample analysis date		X		X	
7. Copy of chain-of-custody form signed by Lab sample custodian	100	Х		Х	
Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2293 SAMPLE AND ANALYSIS LIST

		Sample	Parent .		A	nalysis		
Sample ID	Lab ID	Collection Date	Sample	voc	SVOC	РСВ	MET	ТРН
EGCSB-02(15.5- 17.5)	C2293-01	5/18/2011		x	x	х	x	х
EGCSB-02(9-11)	C2293-02	5/18/2011	·	х	х	х	х	х

ORGANIC ANALYSES VOCS

	Reported		Performance Acceptable		Not	
·	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		X		X		
B. Trip blanks					X	
C. Field blanks					X	
3. Matrix spike (MS) %R		X		X		
4. Matrix spike duplicate (MSD) %R		X		X		
5. MS/MSD precision (RPD)		X	X			
6. Laboratory Control Sample %R		X	,	X		
7. Surrogate spike recoveries		X		X		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's	· .	X		X		
11. Continuing calibration RRF's and %D's		X		X		
12. Transcriptions – quant report vs. Form I		X		X		
13. Field duplicates RPD					Х	
14. Tentatively Identified Compounds (TICs)	<u> </u>	X		X		

VOCs - volatile organic compounds %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor

RPD - relative percent difference

Comments:

Performance was acceptable with the following exception:

5. The methyl acetate RPD was above the QC in the MS/MSD and was not detected in the associated samples, therefore, qualification of the data was not necessary.

ORGANIC ANALYSES SVOCS

	Reported		l	rmance eptable	Not	
	No	Yes	No	Yes	Required	
1. Holding times		X	· .	X		
2. Blanks						
A. Method blanks		X	X	·		
B. Field blanks					X	
3. Matrix spike (MS) %R		X	X			
4. Matrix spike duplicate (MSD) %R		. X	X			
5. MS/MSD precision (RPD)		X	X			
6. Laboratory Control Sample %R		X	X			
7. Surrogate spike recoveries	1	X	·	X		
8. Instrument performance check	1	X		X.	-	
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's		X		X		
12. Transcriptions – quant report vs. Form I		X		X		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		X		X		

SVOCs -Semi-volatile organic compounds %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

- 2A. Dimethylphthalate were detected in the method blank and was not detected in the associated samples, therefore, qualification of the data was not necessary.
- 3-6. The benzaldehyde %R was below the QC limit in the MS, MSD and laboratory control sample associated with all samples. The RPD was above the QC limit in the MS/MSD for 2,2-oxybis(1-chloropropane), 2-chlorophenol, 3-nitroaniline, 4-chloroaniline, benzaldehyde, bis(2-chloroethyl)ether, hexachlorobutadiene, hexachloroethane, naphthalene and phenol associated with all samples. These compounds were not detected in the associated samples, therefore, only benzaldehyde was qualified as estimated (UJ) in all samples.

ORGANIC ANALYSES PCBs

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks		X .		X	
B. Field blanks					X
3. Matrix spike (MS) %R		X	X		
4. Matrix spike duplicate (MSD) %R		X	X		
5. MS/MSD precision (RPD)		X ·		X	
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X		X	
8. GC Surrogate retention time summary		X		X	
9. Initial calibration %RSD's	1	X		X	
10. Continuing calibration %D's		X		X	
11. Transcriptions – quant report vs. Form I		X		X	
12. Identification summary		X		Х	
13. Field duplicates RPD					X

PCBs - Polychlorinated Biphenyls %R - percent recovery

%D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor

RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

3&4. The Aroclor 1016 and Aroclor 1260 %Rs were above the QC limit in the MS and /or MSD and was not detected in the associated samples, therefore, qualification of the data was not necessary.

ORGANIC ANALYSES

TPH

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks		X		X	
B. Field blank					X
3. Matrix spike (MS) %R		X		X	
4. Matrix spike duplicate (MSD) %R		X		X	
5. MS/MSD precision (RPD)		X	X		
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X		Х	
8. Initial calibration RRF's and %RSD's		X		X	
9. Continuing calibration RRF's and %D's		X		X	
10. Transcriptions – quant report vs. Form I		X		X	
11. Field duplicates RPD					X

[%]D - percent difference %R - percent recovery

RRF - relative response factor

%RSD - percent relative standard deviation

RPD - relative percent difference

Comments:

Performance was acceptable with the following exception:

5. The TPH RPD was above the QC in the MS/MSD and was qualified as estimated (J) in all samples.

INORGANIC ANALYSES

Metals & Cyanide

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		Х	Ī
2. Blanks					
A. Preparation and calibration blanks		X	X		
B. Field blanks				1	X
3. Initial calibration verification %R		X		X	
4. Continuing calibration verification %R		X		X	
5. CRDL standard %R		X	X		
6. Interference check sample %R		X		X	
7. Laboratory control sample %R		X		X	
8. Spike sample %R	.]	X	X		
9. Post digestive spike sample %R		X	X		
10. Duplicate %RPD	1	X	X		
11. Serial dilution check %D		X	X		
12. Total verse dissolved results					X
13. Field duplicates RPD]	X

[%]R - percent recovery

RPD - relative percent difference

Comments:

- 2A. Cyanide was detected in the preparation blanks. Cyanide was detected at less than ten times the concentration found in the blanks and less than the contract required detection limit and qualified as non-detect (U) in sample EGCSB-02(15.5-17.5).
- 5,8&9. The copper %R was below the QC limits in the CRDL standard and above the QC limits of in the spike and post digest spike associated with all samples. Copper was qualified as estimated (J) in all samples.
- 10. The arsenic, barium, cadmium, calcium, chromium, copper, iron, lead, manganese, nickel, sodium, vanadium and zinc RPDs were above the QC limit of 20% for the laboratory duplicate associated with all samples. The above metals were qualified as estimated (J/UJ) in all samples.
- 11. The iron %D was above the QC limit of 10% for the serial dilution check sample associated with all samples. Iron was qualified as estimated (J) in all samples.

[%]D - percent difference

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers:C2293

QUALIFICATION SU	JMMARY	Laboratory Numbers:C2293			
Sample ID	Analyte(s)	Qualifier	Reason(s)		
<u>VOCs</u>					
No qualification of the					
data was necessary.					
SVOCs		1			
All samples	Benzaldehyde	UJ	%R was below the QC limit in the MS, MSD and laboratory control sample		
PCBs					
No qualification of the					
data was necessary.					
ТРН		-			
All samples	ТРН	J	RPD was above the QC in the MS/MSD		
Metals & Cyanide					
EGCSB-02(15.5-17.5)	Cyanide	U	Detected in the preparation blanks		
All samples	Copper	J	%R was above the QC limits of in the spike and post digest spike		
All samples	Arsenic, barium, cadmium, calcium, chromium, copper, iron, lead, manganese, nickel, sodium, vanadium and zinc	J/UJ	RPDs were above the QC limit of 20% for the laboratory duplicate		
All samples	Iron	J.	%Ds were above the QC limit of 10% for the serial dilution check sample		

VALIDATION PERFORMED BY & DATE:	Donna M. Brown 06/29/2011
VALIDATION PERFORMED BY SIGNATURE:	le-R

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City
Project Number:	3008-C04
Sample Date(s):	May 19, 2011
Sample Team:	Paul Barusich
Matrix/Number	<u>Soil/ 4</u>
of Samples:	Field Duplicates/ 0
	Trip Blanks / 0
•	Field Blanks/ 0
Analyzing Laboratory:	Chemtech, Mountainside, New Jersey
Analyses:	Volatile organic compounds (<u>VOCs</u>), by USEPA method SW846 8260B Semi volatile organic compounds (<u>SVOCs</u>), by USEPA method SW846 8270C Polychlorinated biphenyl (<u>PCBs</u>) by USEPA SW846 Method 8082 Total petroleum hydrocarbons (<u>TPH</u>) by USEPA SW846 Method 8100 <u>Metals</u> by SW846 Method 6010B and mercury (Hg) by Method 7470A/7471A <u>Cyanide</u> by SW846 Method 9012
Laboratory Report No:	C2317 Date:6/6/2011

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Den	net ad	Performance Acceptable		Mot
	Repo	Yes	No	Yes	Not Required
1. Sample results		X		X	
2. Parameters analyzed		·X		X	
3. Method of analysis		X		X	
4. Sample collection date		X		X	
5. Laboratory sample received date		X		X	
6. Sample analysis date		X	•	Χ.	
7. Copy of chain-of-custody form signed by Lab sample custodian	-	Х		X	
8. Narrative summary of QA or sample problems provided		Х		X	

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2317 SAMPLE AND ANALYSIS LIST

		Sample	Parent		A	nalysis		
Sample ID	Lab ID	Collection Date	Sample	VOC	SVOC	РСВ	MET	ТРН
EGCMW-07(16- 18)	C2317-01	5/19/2011	·	x	x	X	х	X
EGCMW-07(9.5- 11-5)	C2317-02	5/19/2011		x	x	x	x	x
EGCSB-18(16-18)	C2317-03	5/19/2011		х	X	X	x	х
EGCSB-18(8-10)	C2317-04	5/19/2011	·	X .	X	х	х	х

ORGANIC ANALYSES VOCS

	Reported			Performance Acceptable	
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks		X	X		
B. Trip blanks					X
C. Field blanks					X
3. Matrix spike (MS) %R		X		X	
4. Matrix spike duplicate (MSD) %R		X		X	-
5. MS/MSD precision (RPD)		X		X	
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X		X	
8. Instrument performance check		X		X	
9. Internal standard retention times and areas		·X		X	
10. Initial calibration RRF's and %RSD's		X		X	
11. Continuing calibration RRF's and %D's		X		X	
12. Transcriptions – quant report vs. Form I		X		X	
13. Field duplicates RPD					X.
14. Tentatively Identified Compounds (TICs)		X		X	

VOCs - volatile organic compounds %R - percent recovery %D - percent difference %RSD - percent relative standard deviation RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable with the following exception:

2A. Methylene chloride was detected in the method blank associated with all samples. Methylene chloride was qualified as non-detect (U) in all samples.

ORGANIC ANALYSES SVOCS

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks	·	X	X		
B. Field blanks					X
3. Matrix spike (MS) %R		X	X	·	
4. Matrix spike duplicate (MSD) %R		X	X		
5. MS/MSD precision (RPD)		X	X		
6. Laboratory Control Sample %R		X	X		
7. Surrogate spike recoveries		X		X	
8. Instrument performance check		X		X	
9. Internal standard retention times and areas		X		X	
10. Initial calibration RRF's and %RSD's		X		X	
11. Continuing calibration RRF's and %D's		X		X	
12. Transcriptions – quant report vs. Form I		X		X	
13. Field duplicates RPD					X
14. Tentatively Identified Compounds (TICs)		X		X	

SVOCs – Semi-volatile organic compounds %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation RRF - relative response factor RPD - relative percent difference

Comments:

- 2A. Dimethylphthalate was detected in the method blank and was not detected in the associated samples, therefore, qualification of the data was not necessary.
- 3-6. The benzaldehyde %R was below the QC limit in the MS, MSD and laboratory control sample associated with all samples. The RPD was above the OC limit in the MS/MSD for 1,1biphenyl, 1,2,4,5-tetrachlorobenzene, 2,2-oxybis(1-chloropropane), 2,3,4,6tetrachlorophenol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, 2,4-dichlorophenol, 2,4-dimethylphenol, 2,4-dinitrophenol, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 2chloronaphthalene, 2-methylnaphthalene, 2-nitroaniline, 2-nitrophenol, 3,3dichlorobenzidine, 3+4-methylphenols, 3-nitroaniline, 4,6-dinitro-2-methylphenol, 4bromophenylphenylether, 4-chloro-3-methylphenol, 4-chloroaniline, 4-chlorophenylphenylether, 4-nitroaniline, 4-nitrophenol, acenaphthene, acenaphthylene, acetophenone, anthracene, atrazine, benzaldehyde, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, bis(2-chloroethoxy)methane, bis(2-ethylhexyl)phthalate, caprolactam, carbazole, chrysene, dibenz(a,h)anthracene, dibenzofuran, diethylphthalate, dimethylphthalate, di-nbutylphthalate, di-n-octyl phthalate, fluorene, hexachlorobenzene, hexachlorobutadiene, hexachlorocyclopentadiene, isophorone, naphthalene, nitrobenzene, n-nitroso-di-n-propylamine, n-nitrosodiphenylamine, pentachlorophenol, phenanthrene and pyrene associated with all samples. These

compounds were not detected in the associated samples, therefore, only benzaldehyde was qualified as estimated (UJ) in all samples.

ORGANIC ANALYSES PCBs

	Reported		1	rmance eptable	Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks				, , , ,	-	
A. Method blanks		X		X		
B. Field blanks						
3. Matrix spike (MS) %R	-	X		X		
4. Matrix spike duplicate (MSD) %R		X		X		
5. MS/MSD precision (RPD)		X		X		
6. Laboratory Control Sample %R		X		X		
7. Surrogate spike recoveries		X		X		
8. GC Surrogate retention time summary		X		X		
9. Initial calibration %RSD's		X		X		
10. Continuing calibration %D's		X		X		
11. Transcriptions – quant report vs. Form I		X		X		
12. Identification summary		X		X		
13. Field duplicates RPD					X	

PCBs – Polychlorinated Biphenyls %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable.

ORGANIC ANALYSES

TPH

	Reported			rmance eptable	Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		X		X		
B. Field blank					X	
3. Matrix spike (MS) %R		X		X		
4. Matrix spike duplicate (MSD) %R		X		X		
5. MS/MSD precision (RPD)		X		X	-	
6. Laboratory Control Sample %R		X		X		
7. Surrogate spike recoveries		X		X		
8. Initial calibration RRF's and %RSD's		X		X		
9. Continuing calibration RRF's and %D's		X		X		
10. Transcriptions – quant report vs. Form I		X		X		
11. Field duplicates RPD		:			X	

%D - percent difference %R - percent recovery

RRF - relative response factor %RSD - percent relative standard deviation

RPD - relative percent difference

Comments:

Performance was acceptable.

INORGANIC ANALYSES

Metals & Cyanide

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Preparation and calibration blanks		X	X			
B. Field blanks					X	
3. Initial calibration verification %R		X		X		
4. Continuing calibration verification %R		X		X		
5. CRDL standard %R		X	X			
6. Interference check sample %R		X		X		
7. Laboratory control sample %R		X		X		
8. Spike sample %R		X		X		
9. Post digestive spike sample %R					X	
10. Duplicate %RPD		X	X			
11. Serial dilution check %D		X		X		
12. Total verse dissolved results					X	
13. Field duplicates RPD					· X	

%R - percent recovery

%D - percent difference

RPD - relative percent difference

Comments:

- 2a. Cyanide was detected in the preparation blank. Cyanide was detected at less than ten times the concentration found in the blanks and less than the contract required detection limit, therefore, qualified as non-detect (U) in all sample if detected.
- 5. The aluminum, arsenic, iron, nickel and selenium %Rs were above the QC limits in the CRDL standard. The arsenic, nickel and selenium results were qualified as estimated (J) in all samples.
- 10. The sodium RPD was above the QC limit of 20% for the laboratory duplicate associated with all samples. Sodium was qualified as estimated (J) in all samples.

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers:C2317

QUALIFICATION SUMM	ART	Laboratory Numbers: C2317				
Sample ID	Analyte(s)	Qualifier	Reason(s)			
<u>VOCs</u>						
All sample	Methylene chloride	U	Detected in the method blank			
	-					
SVOCs						
All samples	Benzaldehyde	UJ	%R was below the QC limit in the MS, MSD and laboratory control sample			
PCBs						
No qualification of the data was necessary.			·			
			·			
TPH						
No qualification of the data was necessary.						
		·				
Metals & Cyanide						
All samples if detected	Cyanide	U	Detected in the preparation blanks			
All samples	Arsenic, nickel and selenium	J	%Rs were above the QC limits in the CRDL standard			
All samples	Sodium	J	DDDa wore shows the OC limit			
zzu sampies	Sodium	J	RPDs were above the QC limit of 20% for the laboratory duplicate			

VALIDATION PERFORMED BY & DATE:	Donna M. Brown 07/5/2011	
VALIDATION PERFORMED BY SIGNATURE:	12 m R-	-

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City
Project Number:	3008-C04
Sample Date(s):	May 20, 2011
Sample Team:	Paul Barusich
Matrix/Number	Soil/ 8
of Samples:	Field Duplicates/ 0
	Trip Blanks / 0
•	Field Blanks/ 0
Analyzing Laboratory:	Chemtech, Mountainside, New Jersey
Analyses:	Volatile organic compounds (<u>VOCs</u>), by USEPA method SW846 8260B Semi volatile organic compounds (<u>SVOCs</u>), by USEPA method SW846 8270C Polychlorinated biphenyl (<u>PCBs</u>) by USEPA SW846 Method 8082 Total petroleum hydrocarbons (<u>TPH</u>) by USEPA SW846 Method 8100 <u>Metals</u> by SW846 Method 6010B and mercury (Hg) by Method 7471A <u>Cyanide</u> by SW846 Method 9012
Laboratory Report No:	C2341 Date:6/7/2011

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Performance				
	Repo	orted	Acceptable		Not
	No.	Yes	No	Yes	Required
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Sample collection date		X		X	
5. Laboratory sample received date		X	•	X	
6. Sample analysis date		X		X	
7. Copy of chain-of-custody form signed by Lab sample custodian		X		х	
8. Narrative summary of QA or sample problems provided		X,		X	·

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2341 SAMPLE AND ANALYSIS LIST

		Sample	Parent	Parent Analysis					
Sample ID	Lab ID	Collection Date	Sample	VOC	SVOC	РСВ	MET	ТРН	
EGCSB-19(16-18)	C2341-01	5/20/2011		х	x	х	х	Х	
EGCSB-19(8-10)	C2341-02	5/20/2011		x	x	х	х	x	
EGCSB-13(16-18)	C2341-03	5/20/2011		x	х	X	X	х	
EGCSB-13(8-10)	C2341-04	5/20/2011		х	x	X	X	X	
EGCSB-08(15-17)	C2341-05	5/20/2011		x	x	X	X	х	
EGCSB-08(8-10)	C2341-06	5/20/2011		. x	х	х	X	х	
EGCSB-09(15-17)	C2341-07	5/20/2011		х	х	х	х	х	
EGCSB-09(8-10)	C2341-08	5/20/2011		х	X	х	Х	х	

ORGANIC ANALYSES VOCS

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		X		X		
B. Trip blanks					X	
C. Field blanks					X	
3. Matrix spike (MS) %R		X		X		
4. Matrix spike duplicate (MSD) %R		X		X		
5. MS/MSD precision (RPD)		X		X		
6. Laboratory Control Sample %R	,	X	X			
7. Surrogate spike recoveries		X		X		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's	1	X		X		
12. Transcriptions – quant report vs. Form I		X		Х		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		X		X		

VOCs - volatile organic compounds %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor

RPD - relative percent difference

Comments:

Performance was acceptable with the following exception:

6. The 1,1,1-trichloroethane, carbon tetrachloride, and methyl cyclohexane had %Rs above the QC in the laboratory control sample and were not detected in the associated samples, therefore, qualification of the data was not necessary.

ORGANIC ANALYSES SVOCS

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		X	X			
B. Field blanks					X	
3. Matrix spike (MS) %R		X	X			
4. Matrix spike duplicate (MSD) %R		X	X			
5. MS/MSD precision (RPD)		X	X			
6. Laboratory Control Sample %R		X	X		-	
7. Surrogate spike recoveries]	X		X		
8. Instrument performance check		X	·	X		
9. Internal standard retention times and areas		X	,	X		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's		X		X		
12. Transcriptions – quant report vs. Form I		X		X		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		X		X		

SVOCs -Semi-volatile organic compounds %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation RRF - relative response factor

RPD - relative percent difference

Comments:

- 2A. Dimethylphthalate were detected in the method blank and was not detected in the associated samples, therefore, qualification of the data was not necessary.
- 3-6. The benzaldehyde %R was below the QC limit in the MS, MSD and laboratory control sample associated with all samples. The RPD was above the OC limit in the MS/MSD for 1.1biphenyl, 1,2,4,5-tetrachlorobenzene, 2,2-oxybis(1-chloropropane), 2,3,4,6tetrachlorophenol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, 2,4-dichlorophenol, 2,4-dimethylphenol, 2,4-dinitrophenol, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 2chloronaphthalene, 2-methylnaphthalene, 2-nitroaniline, 2-nitrophenol, 3,3dichlorobenzidine, 3+4-methylphenols, 3-nitroaniline, 4,6-dinitro-2-methylphenol, 4bromophenylphenylether, 4-chloro-3-methylphenol, 4-chloroaniline, 4-chlorophenylphenylether, 4-nitroaniline, 4-nitrophenol, acenaphthene, acenaphthylene, acetophenone, anthracene, atrazine, benzaldehyde, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, bis(2-chloroethoxy)methane, bis(2-ethylhexyl)phthalate, caprolactam, carbazole, chrysene, dibenz(a,h)anthracene, dibenzofuran, diethylphthalate, dimethylphthalate, di-nbutylphthalate, di-n-octyl phthalate, fluorene, hexachlorobenzene, hexachlorobutadiene, hexachlorocyclopentadiene, isophorone, naphthalene, nitrobenzene, n-nitroso-di-n-propylamine, n-nitrosodiphenylamine, pentachlorophenol, phenanthrene and pyrene associated with all samples. These

compounds were not detected in the associated samples, therefore, only benzaldehyde was qualified as estimated (UJ) in all samples.

ORGANIC ANALYSES

PCBs

	Reported		Performance acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
a. Method blanks		X		X	
B. Field blanks					X
3. Matrix spike (MS) %R		X		X	
4. Matrix spike duplicate (MSD) %R		X		X	
5. MS/MSD precision (RPD)		X		X	
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X		X	
8. GC Surrogate retention time summary		X		X	
9. Initial calibration %RSD's		X		X	
10. Continuing calibration %D's		X		X	
11. Transcriptions – quant report vs. Form I		X		X	-
12. Identification summary		X		·X	
13. Field duplicates RPD					X

PCBs - Polychlorinated Biphenyls %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable.

ORGANIC ANALYSES

TPH

	Re	Reported		Performance acceptable	
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
a. Method blanks		X		X	
B. Field blank					X
3. Matrix spike (MS) %R		X		Х	***************************************
4. Matrix spike duplicate (MSD) %R		X		Х	
5. MS/MSD precision (RPD)		X	X		
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X		X	
8. Initial calibration RRF's and %RSD's		X		X	* .
9. Continuing calibration RRF's and %D's		X		X	
10. Transcriptions – quant report vs. Form I		X		X	
11. Field duplicates RPD					Х

[%]D - percent difference %R - percent recovery

RRF - relative response factor %RSD - percent relative standard deviation

RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

5. The TPH RPD was above the QC in the MS/MSD and was qualified as estimated (J) in all samples.

INORGANIC ANALYSES

Metals & Cyanide

	Reported		Performance acceptable		Not
	No	Yes	No	Yes	Required
Holding times		X		X	
2. Blanks			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
a. Preparation and calibration blanks	·	X	X		
B. Field blanks					X
3. Initial calibration verification %R		X		X	
4. Continuing calibration verification %R		X		X	
5. CRDL standard %R		X	X		
6. Interference check sample %R		X		X	
7. Laboratory control sample %R		X		X	
8. Spike sample %R		X		X	
9. Post digestive spike sample %R					X
10. Duplicate %RPD		X	X		
11. Serial dilution check %D		X		X	
12. Total verse dissolved results					X
13. Field duplicates RPD					X

%R - percent recovery

%D - percent difference

RPD - relative percent difference

Comments:

- 2a. Cyanide was detected in the preparation blank. Cyanide was detected at less than ten times the concentration found in the blanks and less than the contract required detection limit, therefore, qualified as non-detect (U) in all sample if detected.
- 5. The aluminum, arsenic, iron, nickel and selenium %Rs were above the QC limits in the CRDL standard. The following metals were qualified as estimated (J): arsenic in samples EGCSB-19(16-18) and EGCSB-13(8-10) and selenium in samples EGCSB-19(16-18).
- 10. The sodium RPD was above the QC limit of 20% for the laboratory duplicate associated with all samples. Sodium was qualified as estimated (J) in all samples.

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers:C2341

QUALIFICATION 30	IAIIAI\VIV I	Laboratory Numbers: C2341			
Sample ID	Analyte(s)	Qualifier	Reason(s)		
VOCs					
No qualification of the					
data was necessary.					
SVOCs					
All samples	Benzaldehyde	UJ	%R was below the QC limit in the MS, MSD and laboratory control sample		
<u>PCBs</u>					
No qualification of the					
data was necessary.					
<u>TPH</u>	,				
All samples	ТРН	J	RPD was above the QC in the MS/MSD		
Metals & Cyanide					
All samples if detected	Cyanide	U	Detected in the preparation blanks		
EGCSB-19(16-18) and	Arsenic	J	%Rs were above the QC limits in		
EGCSB-13(8-10)	7 HSCINC		the CRDL standard		
			The second secon		
EGCSB-19(16-18)	Selenium	J	%Rs were above the QC limits in the CRDL standard		
All samples	Sodium	J	RPDs were above the QC limit of 20% for the laboratory duplicate		

VALIDATION PERFORMED BY & DATE:	Donna M. Brown 06/30/2011
VALIDATION PERFORMED BY SIGNATURE:	12-2

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City
Project Number:	3008-C04
Sample Date(s):	May 23, 2011
Sample Team:	Paul Barusich
Matrix/Number	Soil/4
of Samples:	Field Duplicates/ 0
	Trip Blanks / 0
	Field Blanks/ 0
Analyzing	Chemtech, Mountainside, New Jersey
Laboratory:	Chemicen, iviountamside, new Jersey
Analyses:	Volatile organic compounds (VOCs), by USEPA method SW846 8260B
	Semi volatile organic compounds (SVOCs), by USEPA method SW846 8270C
	Polychlorinated biphenyl (PCBs) by USEPA SW846 Method 8082
	Total petroleum hydrocarbons (TPH) by USEPA SW846 Method 8100
	Metals by SW846 Method 6010B and mercury (Hg) by Method 7471A
	Cyanide by SW846 Method 9012
Laboratory	C2361 Date:6/8/2011
Report No:	C2501 Date:0/8/2011

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Sample collection date		X		X	
5. Laboratory sample received date		X		X	
6. Sample analysis date		X		X	
7. Copy of chain-of-custody form signed by Lab sample custodian		Х		х	
8. Narrative summary of QA or sample problems provided		Х		X	

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2361 SAMPLE AND ANALYSIS LIST

		Sample	Parent		Α	nalysis		
Sample ID	Lab ID	Collection Date	Sample	voc	SVOC	РСВ	MET	TPH
EGCMW-05(15- 17)	C2361-01	5/23/2011		x	х	x	х	х
EGCMW-05(8- 10)	C2361-02	5/23/2011		х	x	x	х	х
EGCSB-11(14.5- 16.5)	C2361-03	5/23/2011	·	x	x	X	X	х
EGCSB-11(8-10)	C2361-04	5/23/2011		х	х	х	X	х

ORGANIC ANALYSES VOCS

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		X		X		
B. Trip blanks					X	
C. Field blanks					X	
3. Matrix spike (MS) %R		X	X			
4. Matrix spike duplicate (MSD) %R		X	X			
5. MS/MSD precision (RPD)		X		X		
6. Laboratory Control Sample %R		X	X			
7. Surrogate spike recoveries		X		X		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's		X		X		
12. Transcriptions – quant report vs. Form I		X		Х		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		· X		X		

VOCs - volatile organic compounds %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor

RPD - relative percent difference

Comments:

Performance was acceptable with the following exceptions:

3,4&6. The 1,1,1-trichloroethane, bromomethane and carbon tetrachloride %R were above the QC limits in the MS and/or MSDs. The 1,1,1-trichloroethane, carbon tetrachloride, dichlorodifluoromethane, methylcyclohexane, o-xylene and trichlorofluoromethane had %Rs above the QC in the laboratory control sample and were not detected in the associated samples, therefore, qualification of the data was not necessary.

ORGANIC ANALYSES SVOCS

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		X		X		
B. Field blanks					X	
3. Matrix spike (MS) %R		X	X			
4. Matrix spike duplicate (MSD) %R		X	X			
5. MS/MSD precision (RPD)		X	X			
6. Laboratory Control Sample %R		X	X			
7. Surrogate spike recoveries		X		X		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's		X		X		
12. Transcriptions – quant report vs. Form I		X		X		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		X		X		

SVOCs – Semi- volatile organic compounds %R - percent recovery

%D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

3-6. The benzaldehyde %R was below the QC limit in the MS, MSD and laboratory control sample associated with all samples and the RPD was above the QC limit in the MS/MSD. Benzaldehyde was qualified as estimated (UJ) in all samples.

ORGANIC ANALYSES

PCBs

	Re	ported	ı	ormance eptable	Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
a. Method blanks		X		X	
B. Field blanks					X
3. Matrix spike (MS) %R		X		X	
4. Matrix spike duplicate (MSD) %R		X		X	
5. MS/MSD precision (RPD)		X		X	
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X	X	·	
8. GC Surrogate retention time summary		X		X	
9. Initial calibration %RSD's		X		X	
10. Continuing calibration %D's		X		X	
11. Transcriptions – quant report vs. Form I		X		X	
12. Identification summary		X		X	
13. Field duplicates RPD					X

PCBs - Polychlorinated Biphenyls %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

7. A surrogate %R was below QC limits associated with sample EGCSB-11(8-10). PCBs were qualified as estimated (UJ) in EGCSB-11(8-10).

ORGANIC ANALYSES

TPH

	Reported		Performance acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
a. Method blanks		X		X	
B. Field blank					X
3. Matrix spike (MS) %R		Х	Х		
4. Matrix spike duplicate (MSD) %R		X		X	
5. MS/MSD precision (RPD)		X	X		
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X		X	
8. Initial calibration RRF's and %RSD's		X		X	
9. Continuing calibration RRF's and %D's		X		X	
10. Transcriptions – quant report vs. Form I		X		X	
11. Field duplicates RPD					X

[%]D - percent difference %R - percent recovery

RRF - relative response factor

%RSD - percent relative standard deviation

RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

3&5. The TPH %R was below QC limits in the MS and RPD was above the QC in the MS/MSD and was qualified as estimated (J) in all samples.

INORGANIC ANALYSES

Metals & Cyanide

	Reported		Performance acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X	1	
2. Blanks						
A. Preparation and calibration blanks		X	X			
B. Field blanks					Х	
3. Initial calibration verification %R		X		X		
4. Continuing calibration verification %R		X		X		
5. CRDL standard %R		X		X		
6. Interference check sample %R		X		X		
7. Laboratory control sample %R		X		X		
8. Spike sample %R		X		X		
9. Post digestive spike sample %R					X	
10. Duplicate %RPD		X	X			
11. Serial dilution check %D		X		X		
12. Total verse dissolved results					X	
13. Field duplicates RPD					X	

[%]R - percent recovery

RPD - relative percent difference

Comments:

- 2a. Cyanide was detected in the preparation blank. Cyanide was detected at less than ten times the concentration found in the blanks and less than the contract required detection limit, therefore, qualified as non-detect (U) in all sample if detected.
- 10. The calcium RPD was above the QC limit of 20% for the laboratory duplicate associated with all samples. Calcium was qualified as estimated (J) in all samples.

[%]D - percent difference

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers:C2361

QUALIFICATION SUM	IAIVI / I	Laboratory Numbers:02301				
Sample ID	Analyte(s)	Qualifier	Reason(s)			
<u>VOCs</u>						
No qualification of the						
data was necessary.		· .				
SVOCs						
All samples	Benzaldehyde	UJ	%R was below the QC limit in the MS, MSD and laboratory control sample and the RPD was above the QC limit in the MS/MSD			
PCBs						
EGCSB-11(8-10)	PCBs	UJ	A surrogate %R was below QC limits			
TPH						
All samples	TPH	J	%R was below QC limits in the			
7 m camples	****	,	MS and RPD was above the QC in the MS/MSD			
Metals & Cyanide						
All samples if detected	Cyanide	U	Detected in the preparation blanks			
All samples	Calcium	J	RPDs were above the QC limit			
			of 20% for the laboratory			
		•	duplicate			

VALIDATION PERFORMED BY & DATE:	Donna M. Brown 07/12/2011
VALIDATION PERFORMED BY SIGNATURE:	le-Q-

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City	
Project Number:	3008-C04	
Sample Date(s):	May 24 &25, 2011	
Sample Team:	Paul Barusich	
Matrix/Number	<u>Soil/ 8</u>	
of Samples:	Field Duplicates/ 1	
	<u>Trip Blanks / 0</u>	
	Field Blanks/ 1	
Analyzing	Chemtech, Mountainside, New Jersey	
Laboratory:	Chemican, Mountainside, New Jersey	
Analyses:	Volatile organic compounds (VOCs), by USEPA method SW846 8260B	
	Semi volatile organic compounds (SVOCs), by USEPA method SW846 8	270C
	Polychlorinated biphenyl (PCBs) by USEPA SW846 Method 8082	
	Total petroleum hydrocarbons (TPH) by USEPA SW846 Method 8100	
	Metals by SW846 Method 6010B and mercury (Hg) by Method 7471A	
	Cyanide by SW846 Method 9012	
Laboratory Report No:	C2375 Date:6/13/2011	

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Reno	Reported		mance ptable	Not
	No	Yes	No	Yes	Required
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Sample collection date		X		X	
5. Laboratory sample received date		X		X	
6. Sample analysis date		X		X	
7. Copy of chain-of-custody form signed by Lab sample custodian		Х		Х	
Narrative summary of QA or sample problems provided		Х		X	

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2375 SAMPLE AND ANALYSIS LIST

		Sample	Parent		A	nalysis		
Sample ID	Lab ID	Collection Date	Sample	VOC	SVOC	PCB	MET	ТРН
EGCSB-15(14.5-								
16.5)	C2375-01	5/24/2011		х	х	х	х	х
EGCSB-15(8.5-								
10.5)	C2375-02	5/24/2011		х	х	х	х	х
EGCSB-16(15-17)	C2375-03	5/24/2011		х	х	х	x	·x
EGCSB-16(8-10)	C2375-06	5/24/2011		х	x	х	х	X
EGCSB-17(14-16)	C2375-07	5/24/2011		x	x	х	х	х
EGCSB-17(9-11)	C2375-08	5/24/2011		X	x	х	х	х
FIELDBLANK3	C2375-09	5/24/2011		X	х	X	х	х
FIELD			EGCSB-					
DUPLICATE3	C2375-10	5/24/2011	15(14.5-16.5)	Х	х	х	х	х
EGCSB-14(14-16)	C2375-11	5/25/2011		х	х	X	х	Х
EGCSB-14(8.5-								
10.5)	C2375-12	5/25/2011		х	х	х	x	x

ORGANIC ANALYSES VOCS

	Rep	orted	1	rmance eptable	Not
•	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks		X		X	
B. Trip blanks					X
C. Field blanks		X		X	
3. Matrix spike (MS) %R		X	X		
4. Matrix spike duplicate (MSD) %R		X	X		
5. MS/MSD precision (RPD)		. X	X	•	
6. Laboratory Control Sample %R		X	X		
7. Surrogate spike recoveries		X		X	• .
8. Instrument performance check		·X		X	
9. Internal standard retention times and areas		X		X	
10. Initial calibration RRF's and %RSD's		. X		X	
11. Continuing calibration RRF's and %D's		Χ.		X	
12. Transcriptions – quant report vs. Form I		X		Х	
13. Field duplicates RPD		X		X	
14. Tentatively Identified Compounds (TICs)		X		X	

VOCs - volatile organic compounds %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor

RPD - relative percent difference

Comments:

Performance was acceptable with the following exceptions:

3-6. The 1,1,1-trichloroethane, methyl acetate, bromomethane, 1,2,3-trichlorobenzene, 1,2-dibromo-3-chloropropane and 1,4-dioxane %Rs were above the QC limits in the MS and/or MSDs. The 2-butanone, 2-hexanone and 4-methyl-2-pentaone RPDs were above the QC limit in the MS/MSD. The 1,1,1-trichloroethane, carbon tetrachloride, dichlorodifluoromethane, methylcyclohexane and trichlorofluoromethane had %Rs above the QC in the laboratory control sample. They were not detected in the associated samples, therefore, qualification of the data was not necessary.

ORGANIC ANALYSES

SVOCS

	Re	ported		rmance eptable	Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks		X		X	
B. Field blanks		X		X	
3. Matrix spike (MS) %R		Χ .	X	,	
4. Matrix spike duplicate (MSD) %R		X	X		
5. MS/MSD precision (RPD)		X	X		
6. Laboratory Control Sample %R		X	X		
7. Surrogate spike recoveries		X		X	
8. Instrument performance check		X		X	
9. Internal standard retention times and areas		X		X	
10. Initial calibration RRF's and %RSD's		X		X	
11. Continuing calibration RRF's and %D's		X		X	
12. Transcriptions – quant report vs. Form I		X		X	
13. Field duplicates RPD		X		X	
14. Tentatively Identified Compounds (TICs)		X		X	

SVOCs -Semi- volatile organic compounds %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation RRF - relative response factor RPD - relative percent difference

Comments:

- 3-6. The benzaldehyde %R was below the QC limit in the MS, MSD and laboratory control sample associated with all samples and the RPD was above the QC limit in the MS/MSD. Benzaldehyde was qualified as estimated (UJ) in all samples.
- 12. Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
	Phenanthrene	3700 E	5000 D	5000 D
EGCSB-16(8-10)	Fluoranthene	3700 E	4500 D	4500 D
	Pyrene	3100 E	4300 D	4300 D

ORGANIC ANALYSES PCBs

	Re	ported	l	ormance eptable	Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					•
a. Method blanks		X		X	•
B. Field blanks		X		X	
3. Matrix spike (MS) %R		X		X	
4. Matrix spike duplicate (MSD) %R		X		X	
5. MS/MSD precision (RPD)		X		X	
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries		X		Χ.	-
8. GC Surrogate retention time summary		X		X	
9. Initial calibration %RSD's		X		X	
10. Continuing calibration %D's		X		X	
11. Transcriptions – quant report vs. Form I		X		X	
12. Identification summary		X		X	
13. Field duplicates RPD		X	·	X	

PCBs – Polychlorinated Biphenyls %R - percent recovery %D - percent difference %RSD - percent relative standard deviation RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable.

ORGANIC ANALYSES

TPH

	Reported		Performance acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
a. Method blanks		X		X	
B. Field blank		X		X	
3. Matrix spike (MS) %R		X		Х	
4. Matrix spike duplicate (MSD) %R		X		X	
5. MS/MSD precision (RPD)		X		X	
6. Laboratory Control Sample %R		X		X	
7. Surrogate spike recoveries	1	X		X	
8. Initial calibration RRF's and %RSD's		X		X	
9. Continuing calibration RRF's and %D's		X		Х	
10. Transcriptions – quant report vs. Form I		X		Х	
11. Field duplicates RPD		X		X	

[%]D - percent difference %R - percent recovery

RRF - relative response factor %RSD - percent relative standard deviation

RPD - relative percent difference

Comments:

Performance was acceptable.

INORGANIC ANALYSES

Metals & Cyanide

	Repo	Reported		Performance acceptable	
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Preparation and calibration blanks		X	X		
B. Field blanks		X	· X		
3. Initial calibration verification %R		X		X	
4. Continuing calibration verification %R		X		X	
5. CRDL standard %R		X	X		
6. Interference check sample %R		X		X	
7. Laboratory control sample %R		X		X	
8. Spike sample %R		X	X		
9. Post digestive spike sample %R		Х	X		
10. Duplicate %RPD		X		X	
11. Serial dilution check %D		X		X	
12. Total verse dissolved results					X
13. Field duplicates RPD		X		X	

%R - percent recovery

%D - percent difference

RPD - relative percent difference

Comments:

- 2A&B. Calcium, iron, lead, cyanide, magnesium, potassium, selenium, sodium, zinc and thallium were detected in the preparation and/or field blanks. The following were detected at less than ten times the concentration found in the blanks and qualified as non-detect (U): cyanide in EGCSB-16(15-17) and EGCSB-14(8.5-10.5); lead in FIELD DUPLICATE 3; all selenium results; and calcium in EGCSB-15(14.5-16.5), EGCSB-17(14-18), EGCSB-14(14-16) and FIELD DUPLICATE 3.
- 5. The aluminum, iron and selenium %R were above the QC limits in the CRDL standard. Qualification of the data was not necessary.
- 8&9. The antimony, arsenic and mercury %Rs were above the QC limit for the spike sample associated with the FIELD BLANK. Qualification of the data was not necessary.

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers:C2375

QUALIFICATION SUMMAN		ory Numbers.C2375	
Sample ID	Analyte(s)	Qualifier	Reason(s)
<u>VOCs</u>			
No qualification of the data was necessary.			
SVOCs			
All samples	Benzaldehyde	UJ	%R was below the QC limit in the MS, MSD and laboratory control sample and the RPD was above the QC limit in the MS/MSD
EGCSB-16(8-10)	Phenanthrene, Fluoranthene and Pyrene	D	Report secondary dilution, original exceeded calibration
PCBs			
No qualification of the data was necessary.			
ТРН			
No qualification of the data was necessary.			
Metals & Cyanide	///////////////////////////////////////		
EGCSB-16(15-17) and EGCSB-14(8.5-10.5)	Cyanide	U	Detected in the preparation blanks
FIELD DUPLICATE 3	Lead	U	Detected in the preparation or field blanks
All samples	Selenium	U	Detected in the preparation or field blanks
EGCSB-15(14.5-16.5), EGCSB-17(14-16), EGCSB- 14(14-16) and FIELD DUPLICATE 3	Calcium	U	Detected in the preparation or field blanks

VALIDATION PERFORMED BY & DATE:	Donna M. Brown 07/12/2011
VALIDATION PERFORMED BY SIGNATURE:	12-2-

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City
Project Number:	3008-C04
Sample Date(s):	May 26, 2011
Sample Team:	Paul Barusich
Matrix/Number	Soil/2
of Samples:	Waste Characterzation/ 1
	Trip Blanks / 0
	Field Blanks/ 0
Analyzing Laboratory:	Chemtech, Mountainside, New Jersey
Analyses:	Volatile organic compounds (VOCs) by USEPA method SW846 8260B
	Semi volatile organic compounds (SVOCs), by USEPA method SW846 8270C
	Metals by SW846 Method 6010B and mercury (Hg) by Method 7470A
Maria de la companya	TCLP VOCs, SVOCs and Metals were also analyzed by the above method and prepared by method 1311
	Pesticides (PEST) by USEPA SW846 Method 8081A
	Polychlorinated biphenyl (PCBs) by USEPA SW846 Method 8082
	Herbicides (HERB) by USEPA SW846 Method 8151A
	Total petroleum hydrocarbons (TPH) by USEPA SW846 Method 8100
	Gasoline and Diesel Range Organics (GRO & DRO) by USEPA SW846
	Method 8015B
•	Other: Ignitability by SW846 Method 1030; Cyanide by SW846 Method 9010C;
	Reactive Cyanide by SW846 Method 9014; Corrosivity by SW846 Method
	9045C; and Reactive Sulfide by SW846 Method 9034.
Laboratory Report No:	C2430 Date:6/15/2011

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Performance					
	Reported		Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Sample results		X		X		
2. Parameters analyzed		X		X		
3. Method of analysis		X		X		
4. Sample collection date		X		X		
5. Laboratory sample received date		X		X		
6. Sample analysis date		X		X		
7. Copy of chain-of-custody form signed by Lab sample custodian		х		X		
8. Narrative summary of QA or sample problems provided		Х		х		
A - quality assurance						

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2430 SAMPLE AND ANALYSIS LIST

					Ana	lysis		· · · · · · · · · · · · · · · · · · ·
Sample ID	Lab ID	Sample Collection Date	VOC/ TCLP	SVOC/ TCLP	PCB/ PEST& HERB	MET/ TCLP	TPH/ GRO& DRO	Cyanide /Other
EGCMW-03(15.5-17.5)	C2430-01	5/26/2011	x/	x/	x/	x/	x/	x/
EGCMW-03(8.5-10.5)	C2430-02	5/26/2011	x/	x/	x/	x/	x/	x/
WASTE	C2430-03 /	5/06/0011	,			,	,	,
CHARACTERIZATION	-04	5/26/2011	/x	/x	x/x	x/x	x/x	/x

ORGANIC ANALYSES VOCs / TCLP VOCs

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X	-	
2. Blanks						
A. Method blanks		X	,	X		
B. Trip blanks					X	
C. Field blanks			1		X	
3. Matrix spike (MS) %R		X		X		
4. Matrix spike duplicate (MSD) %R		X		X		
5. MS/MSD precision (RPD)		X	X			
6. Laboratory Control Sample %R		X	X			
7. Surrogate spike recoveries		X		X		
8. Instrument performance check		·X		X	,	
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's]	X		X		
12. Transcriptions – quant report vs. Form I		X	·	X		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		X		X		

VOCs - volatile organic compounds %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor

RPD - relative percent difference

Comments:

- 5. The acetone RPD was above the QC in the MS/MSD and was not detected in the associated samples, therefore, qualification of the data was not necessary.
- 6. The acetone,1,1,1-trichloroethane, carbon tetrachloride, dichlorodifluoromethane, methylcyclohexane and trichlorofluoromethane %Rs were above the QC limit in the laboratory control sample associated with all samples. None of these compounds were detected in the samples and qualification of the data was not necessary.

ORGANIC ANALYSES SVOCs / TCLP SVOCs

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		· X		X		
B. Field blanks					X	
3. Matrix spike (MS) %R		X	·X		•	
4. Matrix spike duplicate (MSD) %R		X	X	-		
5. MS/MSD precision (RPD)		X	X			
6. Laboratory Control Sample %R	1	X	X			
7. Surrogate spike recoveries		X		X		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's		X		X	, ,	
11. Continuing calibration RRF's and %D's		X		X		
12. Transcriptions – quant report vs. Form I		Χ .		X		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		• X		X		

SVOCs –Semi- volatile organic compounds %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation RRF - relative response factor RPD - relative percent difference

Comments:

- 3-6. The benzaldehyde %R was below the QC limit in the MS, MSD and laboratory control sample associated with all samples and the RPD was above the QC limit in the MS/MSD. The RPD for numerous SVOCs were above the QC limit in the MS/MSD associated with all samples and not detected. Benzaldehyde was qualified as estimated (UJ) in all samples.
- 5. The MS/MSD TCLP RPDs were above QC limits for pentachlorophenol and pyridine and were not detected in the associated samples; therefore, qualification of the data was not necessary.

INORGANIC ANALYSES Metals / TCPL Metals

			Performance		
	Reported		acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Preparation and calibration blanks		X	X		
B. Field blanks			,		X
3. Initial calibration verification %R		X		X	
4. Continuing calibration verification %R		X		X	
5. CRDL standard %R		X	X		
6. Interference check sample %R		X		X	
7. Laboratory control sample %R		X		X	
8. Spike sample %R		X		X	
9. Post digestive spike sample %R					X
10. Duplicate %RPD		Χ.		X	
11. Serial dilution check %D		X	X		
12. Total verse dissolved results					X
13. Field duplicates RPD					X

[%]R - percent recovery

RPD - relative percent difference

Comments:

- 2A. TCLP barium was detected in the preparation blank. TCLP barium was detected at less than ten times the concentration found in the blanks and less than the contract required detection limit and qualified as non-detect (U) in sample WASTECHARACTERIZATION.
- 5. The cadmium %R was above and chromium %R was below the QC limits in the CRDL standard and no qualification of the data was necessary.
- 11. The total chromium and zinc %Ds were above the QC limit of 10% for the serial dilution check sample associated with all samples. Total chromium and zinc were qualified as estimated (J/UJ) in all samples.

[%]D - percent difference

ORGANIC ANALYSES PEST / PCBs / HERB

	Reported		Performance acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times	1	X		X		
2. Blanks						
a. Method blanks	1	X		X		
B. Field blanks					X	
3. Matrix spike (MS) %R		X		X		
4. Matrix spike duplicate (MSD) %R		X		X		
5. MS/MSD precision (RPD)		X	X	. "		
6. Laboratory Control Sample %R		X		X		
7. Surrogate spike recoveries		X	X			
8. GC Surrogate retention time summary		X		X		
9. Initial calibration %RSD's		X		X		
10. Continuing calibration %D's		X	X			
11. Transcriptions – quant report vs. Form I		X		X		
12. Identification summary		X		X		
13. Field duplicates RPD					X	

PCBs - Polychlorinated Biphenyls %R - percent recovery

%D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

- The herbicide RPD for 2,4-DB and dinoseb were above the QC limit in the MS/MSD associated with all samples and not detected. No qualification of the data was necessary.
- 7. Due to the second column herbicide surrogate being outside QC limits for 2,4-DCAA, WASTECHARACTERIZATION was reanalyzed. No herbicides were detected in the original and the reanalysis. The reanalyzed was reported with no qualification of the data necessary.
- 10. Due to the continuing calibration %D being outside QC limits for several pesticides, WASTECHARACTERIZATION was reanalyzed. No pesticides were detected in the original and the reanalysis. The reanalysis was reported with no qualification of the data necessary.

ORGANIC ANALYSES TPH / GRO / DRO

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		X	1	X		
B. Field blank					X	
3. Matrix spike (MS) %R		X	X	-		
4. Matrix spike duplicate (MSD) %R		X	X			
5. MS/MSD precision (RPD)		X	X			
6. Laboratory Control Sample %R]	X		X		
7. Surrogate spike recoveries		X	X			
8. Initial calibration RRF's and %RSD's		X		X		
9. Continuing calibration RRF's and %D's		X		X		
10. Transcriptions – quant report vs. Form I		X		X		
11. Field duplicates RPD					X	

[%]D - percent difference %R - percent recovery

RRF - relative response factor

%RSD - percent relative standard deviation

RPD - relative percent difference

Comments:

- 3&5. The DRO %R was below QC limits in the MS and MSD and RPD was above the QC in the MS/MSD. DRO was qualified as estimated (J) in WASTECHARACTERIZATION.
- 7. A DRO surrogate %R was above QC limits associated with WASTECHARACTERIZATION. DRO was qualified as estimated (J) in WASTECHARACTERIZATION.

INORGANIC ANALYSES

Other

	Reported		Performance acceptable		Not
•	No	Yes	No	Yes	Required
Holding times		X		X	
2. Blanks		1			
A. Preparation, initial and continuing calibration blanks		X	Х		
B. Field blanks					Х
3. Initial calibration verification %R		X		X	
4. Continuing calibration verification %R		X		X	
5. Laboratory control sample %R		X		X	
6. Spike sample %R		X		Х	
7. Duplicate %RPD		Х		X	
8. Field duplicates RPD					X

[%]R - percent recovery

RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

2a. Cyanide was detected in the preparation blank. Cyanide was detected at less than ten times the concentration found in the blanks and less than the contract required detection limit, therefore, qualified as non-detect (U) in EGCMW-03(8.5-10.5).

[%]D - percent difference

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers:C2430

QUALIFICATION SUMMARY	·	Laboratory Numbers: C2430			
Sample ID	Analyte(s)	Qualifier	Reason(s)		
VOCs / TCLP VOCs					
No qualification of the data was necessary.					
SVOCs					
All samples	Benzaldehyde	UJ	%R was below the QC limit in the MS, MSD and laboratory control sample		
TCLP SVOCs					
No qualification of the data was necessary.					
Metals					
All samples	Chromium and zinc	J/UJ	%Ds were above the QC limit of 10% for the serial dilution check		
TCLP Metals					
WASTECHARACTERIZATION	Barium	U	Detected in the preparation blank		
PEST/PCBs/HERB					
WASTECHARACTERIZATION	PEST / HERB	Report reanalysis	Surrogates / continuing calibration outside QC limits		
TPH/GRO/DRO					
WASTECHARACTERIZATION	DRO	J	%R was below QC limits in the MS and MSD and RPD was above the QC in the MS/MSD and surrogate %R was above QC limits		

VALIDATION PERFORMED BY & DATE:	Donna M. Brown	07/14/2011
VALIDATION PERFORMED BY SIGNATURE:	111-	Qu

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City	,
Project Number:	3008-C04	
Sample Date(s):	June 6, 2011	
Sample Team:	Paul Barusich	
Matrix/Number	Water/ 4	
of Samples:	Field Duplicates/ 1	
	Trip Blanks / 1	
	Field Blanks/ 1	
Analyzing	Character Manageria ide Nicor	T
Laboratory:	Chemtech, Mountainside, New	Jersey
Analyses:		OCs), by USEPA method SW846 8260B
		ls (<u>SVOCs</u>), by USEPA method SW846 8270C
) by USEPA SW846 Method 8082
	Metals by SW846 Method 6010	B and mercury (Hg) by Method 7470A
•	Cyanide by SW846 Method 901	2B
Laboratory Report No:	C2522	Date:6/22/2011

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

Reported		Performance Acceptable		Not	
No	Yes	No	Yes	Required	
	X		X		
	X		X		
	X		X		
	X		X		
	X		X		
	X		X		
	X		Х		
	X		X		
		X X X X X X	No Yes No X X X X X X X X X	No Yes No Yes X X X X X X X X X X X X X X X X X X	

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2522 SAMPLE AND ANALYSIS LIST

		Sample	Parent Analysis					
Sample ID	Lab ID	Collection Date	Sample	VOC	SVOC	РСВ	МЕТ	ТРН
EGCMW-05	C2522-01	6/6/2011		х	х	X	х	
EGCMW-06	C2522-04	6/6/2011		x	х	х	х	,
EGCMW-04	C2522-05	6/6/2011		х	x	х	х	
EGCMW-02	C2522-06	6/6/2011		X .	x	х	х	
FIELDBLANK	C2522-07	6/6/2011		х	х	х	х	
FIELD DUPLICATE	C2522-08	6/6/2011	EGCMW-04	х	х	х	х	
TRIPBLANK	C2522-09	6/6/2011		х				

ORGANIC ANALYSES vocs

	Rep	orted		rmance eptable	Not
	No	Yes	No-	Yes	Required
1. Holding times		X		X	
2. Blanks				,	
A. Method blanks		X		X	
B. Trip blanks		X		X	
C. Field blanks		X		X	
3. Matrix spike (MS) %R		X		X	
4. Matrix spike duplicate (MSD) %R		X		X	
5. MS/MSD precision (RPD)		X		X	
6. Laboratory Control Sample %R		X		·X	
7. Surrogate spike recoveries	1	X		X	
8. Instrument performance check		X		X	
9. Internal standard retention times and areas		X		X	
10. Initial calibration RRF's and %RSD's		X		X	
11. Continuing calibration RRF's and %D's		X		X	
12. Transcriptions – quant report vs. Form I		X		X	
13. Field duplicates RPD		X		X	
14. Tentatively Identified Compounds (TICs)		X		X	

VOCs - volatile organic compounds %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable.

ORGANIC ANALYSES SVOCS

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		Χ		X	
2. Blanks					
A. Method blanks		X		X	
B. Field blanks		X		X	
3. Matrix spike (MS) %R		X	X		
4. Matrix spike duplicate (MSD) %R		·X	X		
5. MS/MSD precision (RPD)		X	X		
6. Laboratory Control Sample %R		X	X		
7. Surrogate spike recoveries		X		X	
8. Instrument performance check		X		X	
9. Internal standard retention times and areas		X		X	
10. Initial calibration RRF's and %RSD's		X		X	
11. Continuing calibration RRF's and %D's		. X		X	
12. Transcriptions – quant report vs. Form I		X		Х	
13. Field duplicates RPD		X		Х	
14. Tentatively Identified Compounds (TICs)		X	"	X	

SVOCs – Semi-volatile organic compounds %R - percent recovery

%D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable, with the following exceptions:

3-6. The 1,2,4,5-tetrachlorobenzene, 2,3,4,6-tetrachlorophenol and benzaldehyde %Rs were below the QC limit in the MS, MSD and/or laboratory control sample associated with all samples. The pentachlorophenol R% was above the QC limit in the MSD. All SVOC RPDs were above the QC limit in the MS/MSD. SVOCs were not detected in the associated samples, therefore only 1,2,4,5-tetrachlorobenzene, 2,3,4,6-tetrachlorophenol and benzaldehyde were qualified as estimated (UJ) in all samples.

ORGANIC ANALYSES

PCBs

	Reported		Performance acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
a. Method blanks		X		X		
B. Field blanks		X		X		
3. Matrix spike (MS) %R	. ,	X		X		
4. Matrix spike duplicate (MSD) %R		X		X		
5. MS/MSD precision (RPD)		X		X		
6. Laboratory Control Sample %R		X		X		
7. Surrogate spike recoveries		X		X		
8. GC Surrogate retention time summary		X		X		
9. Initial calibration %RSD's		X		Χ.		
10. Continuing calibration %D's		X		Х	-	
11. Transcriptions – quant report vs. Form I		X		X		
12. Identification summary	•	X		X		
13. Field duplicates RPD		X	•	X		

PCBs - Polychlorinated Biphenyls %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable.

INORGANIC ANALYSES

Metals & Cyanide

	Reported		Performance acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Preparation and calibration blanks		X	X			
B. Field blanks		X	X	1.		
3. Initial calibration verification %R		X		X		
4. Continuing calibration verification %R		X		X		
5. CRDL standard %R		X	X			
6. Interference check sample %R		X		X		
7. Laboratory control sample %R		X		X		
8. Spike sample %R		X	X			
9. Post digestive spike sample %R		X	X			
10. Duplicate %RPD		X		X		
11. Serial dilution check %D		X	X			
12. Total verse dissolved results					X	
13. Field duplicates RPD		X		X		

[%]R - percent recovery

%D - percent difference

RPD - relative percent difference

Comments:

Performance was acceptable, with the following exceptions:

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
EGCMW-06	Cyanide	0.972 OR	0.972 D	0.972 D

- 2A&B. Aluminum, calcium, copper, iron, cyanide, magnesium, potassium, zinc and thallium were detected in the preparation and/or field blanks. The following metals were detected at less than ten times the concentration found in the blanks, less than the CRDL and were qualified as non-detect (U): copper in EGCMW-04, EGCMW-05, EGCMW-06 and FIELD DUPLICATE; sodium in EGCMW-06; thallium in EGCMW-02, EGCMW-04, EGCMW-05 and FIELD DUPLICATE; and all zinc results.
- 5. The chromium and iron %R were above the QC limits in the CRDL standard. Qualification of the data was not necessary.
- 8&9. The magnesium and zinc %Rs were above the QC limit for the spike sample and were qualified as estimated (J/UJ) in all samples.
- 11. Aluminum and manganese %D was above the QC limit of 10 % for the serial dilution check sample and were qualified as estimated (J) in all samples.

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers:C252	Labo	ratory	Numbe	ers:C2522
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Sample ID	Analyte(s)	Qualifier	Pancan(s)
VOCs	Allalyte(s)	Quanner	Reason(s)
		-	
No qualification of the data			
was necessary.			
SVOC			
SVOCs			
All samples	Benzaldehyde,1,2,4,5-	UJ	%R was below the QC limit in
	tetrachlorobenzene, and		the MS, MSD and laboratory
	2,3,4,6-tetrachlorophenol		control sample and the RPD was
•			above the QC limit in the
			MS/MSD
DCD			
PCBs			
No qualification of the data			·
was necessary.			
Madala C Carrilla			
Metals & Cyanide			
EGCMW-04, EGCMW-	Copper	U	Detected in the preparation or
05, EGCMW-06 and			field blanks
FIELD DUPLICATE			
EGCMW-06	Sodium	TT	D-4-4-1:-d-
EGCMW-00	Sodium	U	Detected in the preparation or
			field blanks
EGCMW-02, EGCMW-04,	Thallium	U	Detected in the properties or
EGCMW-02, EGCMW-04,	1 Hallium	U	Detected in the preparation or field blanks
DUPLICATE			Held blanks
DUFLICATE			
All samples	Zinc	U	Detected in the preparation or
in bampios	Zine	U	field blanks
			HOLU UIAHKS
All samples	Aluminum and manganese	J	%D was above the QC limit of
		J	10 % for the serial dilution check
			10 70 for the serial dilution check
All samples	Magnesium and zinc	J/UJ	%Rs were above the QC limit for
.			the spike sample
			are spine sample

VALIDATION PERFORMED BY & DATE:	Donna M. Brown 07/13/2011	
VALIDATION PERFORMED BY SIGNATURE:	10-0	

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City
Project Number:	3008-C04
Sample Date(s):	June 7, 2011
Sample Team:	Paul Barusich
Matrix/Number	Water/ 2
of Samples:	Field Duplicates/ 0
	Trip Blanks / 1
	Field Blanks/ 0
Analyzing	Chemtech, Mountainside, New Jersey
Laboratory:	Chemicen, Mountainside, New Jersey
Analyses:	Volatile organic compounds (VOCs), by USEPA method SW846 8260B
	Semi volatile organic compounds (SVOCs), by USEPA method SW846 8270C
	Polychlorinated biphenyl (PCBs) by USEPA SW846 Method 8082
	Metals by SW846 Method 6010B and mercury (Hg) by Method 7470A
	Cyanide by SW846 Method 9012B
Laboratory	C2567 Date:6/22/2011
Report No:	

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Repo	orted		mance ptable	Not
	No	Yes	No	Yes	Required
1. Sample results		X	,	X	
2. Parameters analyzed		X		X.	
3. Method of analysis		X		X	
4. Sample collection date		X		X	
5. Laboratory sample received date		X		X	
6. Sample analysis date		X		X	
7. Copy of chain-of-custody form signed by Lab sample custodian		Х		X	
8. Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2567 SAMPLE AND ANALYSIS LIST

		Sample Parent			A	nalysis		
Sample ID	Lab ID	Collection Date	Sample	VOC	SVOC	РСВ	MET	ТРН
TRIPBLANK	C2567-01	6/7/2011		х				
EGCMW-03	C2567-02	6/7/2011		x	x	х	х	
EGCMW-07	C2567-03	6/7/2011		x	х	x	х	

ORGANIC ANALYSES VOCS

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks		X		X		
B. Trip blanks		X		X		
C. Field blanks					X	
3. Matrix spike (MS) %R					X	
4. Matrix spike duplicate (MSD) %R					X	
5. MS/MSD precision (RPD)				-	X	
6. Laboratory Control Sample %R		X	X			
7. Surrogate spike recoveries		X		X		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		X		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's		X		X		
12. Transcriptions – quant report vs. Form I		X		X		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		X		X		

VOCs - volatile organic compounds %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

6. The acetone and 14-dioxane %Rs were below the QC limit in the laboratory control sample associated with all samples. The 1,2,4-trichlorobenzene and 1,2,3-trichlorobenzene %Rs were above the QC limit in the laboratory control sample duplicate associated with all samples. The RPD for numerous VOCs were above the QC limit in the laboratory control sample associated with all samples and not detected above the method detection limit. Acetone and 14-dioxane were qualified as estimated (UJ) in all samples.

ORGANIC ANALYSES SVOCS

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
A. Method blanks	·	X		X	-	
B. Field blanks					X	
3. Matrix spike (MS) %R		X	X			
4. Matrix spike duplicate (MSD) %R		. X	X			
5. MS/MSD precision (RPD)	1	X	. X			
6. Laboratory Control Sample %R		X	X			
7. Surrogate spike recoveries		X		X.		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		Х		
10. Initial calibration RRF's and %RSD's		X		X		
11. Continuing calibration RRF's and %D's		X	,	X		
12. Transcriptions – quant report vs. Form I		X		X		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		X		X		

SVOCs - Semi- volatile organic compounds %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable, with the following exceptions:

3-6. The 1,2,4,5-tetrachlorobenzene, 2,3,4,6-tetrachlorophenol and benzaldehyde %Rs were below the QC limit in the MS, MSD and/or laboratory control sample associated with all samples. The pentachlorophenol R% was above the QC limit in the MSD. All SVOC RPDs were above the QC limit in the MS/MSD. SVOCs were not detected in the associated samples, therefore only 1,2,4,5-tetrachlorobenzene, 2,3,4,6-tetrachlorophenol and benzaldehyde were qualified as estimated (UJ) in all samples.

ORGANIC ANALYSES PCBs

	Re	Reported		rmance eptable	Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
a. Method blanks		X		X		
B. Field blanks					X	
3. Matrix spike (MS) %R		X		X		
4. Matrix spike duplicate (MSD) %R		X		X		
5. MS/MSD precision (RPD)		X		· X		
6. Laboratory Control Sample %R		X	"	X		
7. Surrogate spike recoveries		X		X		
8. GC Surrogate retention time summary		X		X		
9. Initial calibration %RSD's		X		X		
10. Continuing calibration %D's		X		X		
11. Transcriptions – quant report vs. Form I	,	X		X		
12. Identification summary		X		X		
13. Field duplicates RPD					X	

PCBs - Polychlorinated Biphenyls %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable.

INORGANIC ANALYSES

Metals & Cyanide

	Reported		Performance		Not	
				acceptable		
	No	Yes	No	Yes	Required	
1. Holding times		X		X	*	
2. Blanks						
A. Preparation and calibration blanks		X		X		
B. Field blanks					Х	
3. Initial calibration verification %R		X		X		
4. Continuing calibration verification %R		X		X		
5. CRDL standard %R		X	X			
6. Interference check sample %R		X		X		
7. Laboratory control sample %R		X		X		
8. Spike sample %R		X	X			
9. Post digestive spike sample %R		X		X		
10. Duplicate %RPD		X		X		
11. Serial dilution check %D		X		X		
12. Total verse dissolved results					X	
13. Field duplicates RPD					X	

[%]R - percent recovery

RPD - relative percent difference

Comments:

Performance was acceptable, with the following exceptions:

- 5. The selenium %R was below the QC limits in the CRDL standard and was qualified as estimated (J/UJ) in all samples.
- 8. The sodium %R was above the QC limit for the spike sample and were qualified as estimated (J/UJ) in all samples.

[%]D - percent difference

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers: C2567

COVER FOUNDING	71/ XI X I	Laboratory Numbers.C2307			
Sample ID	Analyte(s)	Qualifier	Reason(s)		
<u>VOCs</u>					
All samples	Acetone and 1,4-dioxane	UJ	%R was below the QC limit in the laboratory control sample		
SVOCs					
All samples	Benzaldehyde,1,2,4,5- tetrachlorobenzene, and 2,3,4,6- tetrachlorophenol	UJ	%R was below the QC limit in the MS, MSD and laboratory control sample and the RPD was above the QC limit in the MS/MSD		
PCBs		*			
No qualification of the data was necessary.			·		
Metals & Cyanide					
All samples	Selenium	J/UJ	%R was below the QC limits in the CRDL standard		
All samples	Sodium	J/UJ	%R was above the QC limit for the spike sample		

VALIDATION PERFORMED BY & DATE:	Donna M. Brown 07/13/2011
VALIDATION PERFORMED BY SIGNATURE:	10-72

DATA VALIDATION CHECKLIST

Project Name:	National Grid- East Garden City
Project Number:	3008-C04
Sample Date(s):	June 8, 2011
Sample Team:	Paul Barusich
Matrix/Number	Water/ 1
of Samples:	Waste Characterzation/ 1
	Trip Blanks / 0
	Field Blanks/ 0
Analyzing Laboratory:	Chemtech, Mountainside, New Jersey
Analyses:	Volatile organic compounds (VOCs), by USEPA method SW846 8260B
	Semi volatile organic compounds (SVOCs), by USEPA method SW846 8270C
	Polychlorinated biphenyl (PCBs) by USEPA SW846 Method 8082
	Metals by SW846 Method 6010B and mercury (Hg) by Method 7470A
	Cyanide by SW846 Method 9012B
E	Flash Point by SW846 Method 1010A
Laboratory Report No:	C2585 Date:6/23/2011

ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Sample results		X		X		
2. Parameters analyzed		X		X		
3. Method of analysis		X		X		
4. Sample collection date		X		X		
5. Laboratory sample received date		X		X		
6. Sample analysis date	_	X		X		
7. Copy of chain-of-custody form signed by Lab sample custodian		Х		Х		
8. Narrative summary of QA or sample problems provided		X		X		

QA - quality assurance

Comments:

The data packages have been reviewed in accordance with the NYSDEC 6/05 ASP Quality Assurance/ Quality Control (QA/QC) requirements. A validation was conducted on the data package and any applicable qualification of the data was determined using the USEPA National Functional Guidelines of June 2008, or USEPA National Functional Guidelines of Inorganic Data Review, January 2010, method performance criteria, and Dvirka and Bartilucci Consulting Engineers, a Division of William F. Cosulich Associates, P.C. professional judgment. The qualification of data discussed within this data validation checklist did not impact the usability of the sample results.

Custody Numbers:C2585 SAMPLE AND ANALYSIS LIST

		Sample				Analysis	3	
Sample ID	Lab ID	Collection Date	Parent Sample	VOC	svoc	РСВ	MET	Flash Point
EGCMW-01	C2585-01	6/8/2011		х	х	х	х	·
WASTE CHARACTERIZATION	C2585-02	6/8/2011		х	X	X	x	х

ORGANIC ANALYSES VOCS

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Blanks					
A. Method blanks		X		X	
B. Trip blanks					X
C. Field blanks					X
3. Matrix spike (MS) %R					X
4. Matrix spike duplicate (MSD) %R					X
5. MS/MSD precision (RPD)					X
6. Laboratory Control Sample %R		X	X		
7. Surrogate spike recoveries		X		X	
8. Instrument performance check		X		X	
9. Internal standard retention times and areas		X		X	
10. Initial calibration RRF's and %RSD's		X		Х	
11. Continuing calibration RRF's and %D's		X		X	
12. Transcriptions – quant report vs. Form I		X		X	
13. Field duplicates RPD					X
14. Tentatively Identified Compounds (TICs)		X		Х	

VOCs - volatile organic compounds %R - percent recovery %D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable, with the following exception:

6. The chloroethane, acetone, methyl tert-butyl ether, bromodichloromethane, 1,2-dibromoethane and 1,2-dichlorobenzene %Rs were above the QC limit in the laboratory control sample associated with all samples. The RPD for numerous VOCs were above the QC limit in the laboratory control sample associated with all samples. None of these compounds were detected in the samples and qualification of the data was not necessary.

ORGANIC ANALYSES SVOCS

	Reported		Performance Acceptable		Not	
	No	Yes	No	Yes	Required	
1. Holding times	,	X		X		
2. Blanks						
A. Method blanks		X		X		
B. Field blanks					X	
3. Matrix spike (MS) %R		X	X			
4. Matrix spike duplicate (MSD) %R		X	X			
5. MS/MSD precision (RPD)		X	X			
6. Laboratory Control Sample %R		X	X			
7. Surrogate spike recoveries		X		X		
8. Instrument performance check		X		X		
9. Internal standard retention times and areas		X		Х		
10. Initial calibration RRF's and %RSD's		X		Χ.		
11. Continuing calibration RRF's and %D's		X		Х		
12. Transcriptions – quant report vs. Form I		X		X		
13. Field duplicates RPD					X	
14. Tentatively Identified Compounds (TICs)		X		X		

SVOCs – Semi- volatile organic compounds %R - percent recovery

%D - percent difference

%RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable, with the following exceptions:

- 3-5. The pentachlorophenol %R was above the QC limit in the MS and MSD associated with all samples. The 3,3-dichlorobenzidine RPD was above the QC limit in the MS/MSD. SVOCs were not detected in the associated samples, therefore no qualification was necessary.
- 6. The 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol %Rs were below the QC limit in the laboratory control sample and were qualified as estimated (UJ) in all samples.

ORGANIC ANALYSES

PCBs

	Re	Reported		ormance eptable	Not	
	No	Yes	No	Yes	Required	
1. Holding times		X		X		
2. Blanks						
a. Method blanks		X		X		
B. Field blanks					X	
3. Matrix spike (MS) %R		X		X		
4. Matrix spike duplicate (MSD) %R		X		X		
5. MS/MSD precision (RPD)		X		. X		
6. Laboratory Control Sample %R		X		X		
7. Surrogate spike recoveries		X		X		
8. GC Surrogate retention time summary		X		X		
9. Initial calibration %RSD's		X		X		
10. Continuing calibration %D's		X		X		
11. Transcriptions – quant report vs. Form I		X		X		
12. Identification summary	1	X	· · · · · · · · · · · · · · · · · · ·	Х	•	
13. Field duplicates RPD					X	

PCBs - Polychlorinated Biphenyls %R - percent recovery

%D - percent difference %RSD - percent relative standard deviation

RRF - relative response factor RPD - relative percent difference

Comments:

Performance was acceptable.

INORGANIC ANALYSES

Metals & Cyanide & Flash Point

·	Reported		Performance acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times	1.0	X	110	X	Required
2. Blanks				 	
A. Preparation and calibration blanks		X		X	
B. Field blanks					Х
3. Initial calibration verification %R		X		X	
4. Continuing calibration verification %R		X		X	
5. CRDL standard %R		X	X		
6. Interference check sample %R		X		X	
7. Laboratory control sample %R		Х		X	
8. Spike sample %R		X	X		
9. Post digestive spike sample %R		Х		X	
10. Duplicate %RPD		X		X	
11. Serial dilution check %D		X		X	
12. Total verse dissolved results					X
13. Field duplicates RPD					X

%R - percent recovery

%D - percent difference

RPD - relative percent difference

Comments:

Performance was acceptable, with the following exceptions:

- 5. The selenium and lead %R was above the QC limits in the CRDL standard and no qualification of the data was necessary.
- 8. The sodium %R was above the QC limit for the spike sample and were qualified as estimated (J/UJ) in all samples.

DATA VALIDATION AND QUALIFICATION SUMMARY

Laboratory Numbers: C2585

Sample ID	Analyte(s)	Qualifier	Reason(s)
<u>VOCs</u>			
No qualification of the data was necessary.			
SVOCs			
All samples	2,4-Dinitrophenol and 4,6-dinitro-2- methylphenol	UJ	%R was below the QC limit in the laboratory control sample
PCBs			
No qualification of the data was necessary.			
Metals & Cyanide & Flash Point			
All samples	Sodium	J/UJ	%R was above the QC limit for the spike sample

VALIDATION PERFORMED BY & DATE:	Donna M. Brown	07/13/2011
VALIDATION PERFORMED BY SIGNATURE:	10-	-P

APPENDIX D

EXCAVATION WORK PLAN





EXCAVATION WORK PLAN

Notification

At least 15 days prior to the start of any intrusive activity that is anticipated to penetrate the soil or ground cover or encounter remaining contamination, the Site owner or their representative will notify National Grid of Hicksville, New York, who will, in turn, notify and submit a task-specific Excavation Work Plan (EWP) to the New York State Department of Environmental Conservation (NYSDEC) for review and approval. Currently, this notification will be made to Mr. Scott Deyette.

The EWP will include the following:

- 1. A detailed description of the work to be performed, including the location and areal extent, plans for Site regrading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact a Site engineering control (EC).
- 2. A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, and plans for any pre-construction sampling.
- 3. A schedule for the work, detailing the start and completion of all intrusive activities.
- 4. A summary of the applicable components of this EWP.
- 5. A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120.
- 6. A copy of the contractor's Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP).
- 7. Identification of disposal facilities for potential waste streams.
- 8. Identification of sources of any anticipated backfill, along with all required chemical testing results.





Prior to mobilization, the Long Island Power Authority (LIPA) or their representative will prepare and submit all required documents identified in this EWP for review and approval by the NYSDEC. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures in the HASP and CAMP discussed in the SMP. Any work conducted in the active electric substation or gas gate station must be performed in accordance with LIPA and National Grid standard operating procedures.

Project/Site Preparation

Personnel training records will be submitted to National Grid for review and approval prior to performing any intrusive work activities. In addition, site preparation activities including clearing and grubbing, if necessary, and the installation of appropriate temporary security and silt fencing in and around any established work areas will be completed by the Contractor prior to performing any intrusive activities. Any installed temporary and silt fencing will remain in place throughout the duration of the work, as needed.

Site Security

The Contractor will prepare and submit a Site Security Plan to National Grid for review and approval prior to performing any intrusive work activities. The objectives of the Site Security Plan are to prevent the vandalism and/or destruction of any construction equipment, to prevent public and/or unauthorized worker access to any established work zone, as well as to minimize health and safety concerns for the surrounding neighborhood.





On-Site Personnel

LIPA will maintain an on-site representative during the completion of all intrusive work within the active electric substation. No intrusive work will be conducted on-site without a LIPA representative.

National Grid may maintain a representative on-site for the duration of the work. National Grid, or its representative, will ensure that a qualified environmental professional, meeting the requirements of DER-10, is on-site for all intrusive activities at the Site.

The Contractor will maintain a full-time Competent Person for the duration of the work. The Competent Person will have at least 5 years cumulative experience of work within energized electrical substations, and/or in close proximity to energized underground and overhead high voltage electrical lines. The Contractor must submit the Competent Person's resume, detailing such work experience, to LIPA for review and approval prior to performing any intrusive work activities.

A dedicated full-time Health and Safety officer will be on-site during all intrusive work activities. The Health and Safety officer may or may not have other on-site responsibilities outside of health and safety, depending on the size of the job.

Utility Markouts

Utility markouts will be maintained for the duration of the work. Copies of all one-call numbers/tickets/utilities plates/private utility location information/test pit logs will be submitted to National Grid and the qualified environmental professional prior to performing any intrusive activities. The qualified environmental professional will maintain copies on-site in a clearance package.





A utility search and identification will be conducted prior to performing any intrusive activities and all potential conflicts will be resolved. All existing on-site underground electrical utilities will be marked-out by LIPA. In addition, a private utility locating service will survey all areas where intrusive activities are planned to be completed and all suspected utility locations will be marked-out. All suspected utility locations will be confirmed with LIPA prior to performing any intrusive activities.

A safe off-set distance, as determined by LIPA, will be marked-out for electrical facilities, substation equipment and utility poles prior to beginning intrusive activities.

Any underground 13 kV electrical cables located within 5 feet of any proposed excavation area will be marked-out prior to performing any intrusive activities. In addition, cables and conduits will be visually located to confirm these markouts. Locations will be permanently marked at the surface following hand clearing. No mechanical intrusive activities will be performed within 3 feet of the underground 13 kV electrical cables.

Any proposed monitoring wells or soil boring locations will be hand-cleared to a depth of 5 feet below ground surface prior to initiating mechanical intrusive activities. All hand clearing will be performed using fiberglass non-conductive tools, vacuum extraction methods and/or air knife.

Vehicle and Equipment Grounding Requirements

All equipment involved in intrusive activities will be grounded using LIPA-approved grounding cables. Grounding cables will be a minimum of 100 feet long and have an ampacity equal to or greater than 4 AWG copper wire and be constructed in accordance with LIPA specifications (CS-3575).





Whenever possible, the grounding cables will be connected to a known ground point at the substation. If the activities are located too far from a known ground point, a temporary ground rod will be installed in a nearby location clear of underground utilities and the equipment or vehicle will be attached to the rod with the same 4 AWG ground.

All equipment requiring grounding will be equipped with a LIPA-approved ground connection welded to the frame of the vehicle. This weld will be metal-to-metal contact only (i.e. all paint must be scraped off of the equipment in the location of the ground).

Working Restrictions – Overhead Electrical Utilities

The electric substation contains several energized overhead distribution and transmission lines. Extreme care will be used during the implementation of intrusive activities so as to not damage or interfere with these utilities. Minimum setbacks, as directed by LIPA, for all booms and trucks operating in the vicinity of energized overhead lines will be maintained at all times. The minimum physical clearance of 5 feet will be maintained for personnel working within close proximity of energized conductors.

Intrusive activities will be coordinated with National Grid and LIPA to ensure that overhead electrical lines are de-energized prior to working beneath the electrical lines, as directed by LIPA. Intrusive activities will be sequenced so that no intrusive work that can potentially interrupt, damage or interfere with the overhead electrical utilities is performed during peak summer months (i.e., June 15th to September 1st), unless otherwise approved in writing by LIPA.

Trucks will not be loaded or emptied/dumped under any overhead electrical utilities, unless approved by National Grid and LIPA. Truck covers will not be opened under the overhead electrical utilities. Warning signs indicating the presence of energized overhead lines and associated allowable clearances for trucks will be posted at the Site entrance.





Excavation

At a minimum, the following requirements apply to excavations within the areas of remaining contamination at the Site. Methods for compliance with these requirements will be addressed in the EWP:

- 1. A qualified environmental professional or person under their supervision will oversee all intrusive activities and "load-out" of any excavated material.
- 2. All excavations will be made in the dry, unless otherwise approved by LIPA and National Grid.
- 3. Excavated materials will be transported to a designated staging area such that they may be tested and properly managed.
- 4. Excavated materials will be staged on polyethylene sheeting to prevent contact with undisturbed soil.
- 5. Excavation will be performed in a manner that will prevent spills and the potential for potentially contaminated soil to be mixed with uncontaminated material.
- 6. Excavation will be accomplished by methods which preserve the undisturbed state of sub-grade soil.
- 7. Mobilization of the excavated soil will be prevented through the use of polyethylene sheeting to cover any soil stockpiles or by using appropriate soil erosion control methods at the end of each day of excavation activities.

Material Storage/Stockpile Methods

At a minimum, the following requirements apply to the storage of materials excavated from areas where remaining contamination has been identified at the Site. Methods for compliance with these requirements will be addressed in the EWP:

1. Excavated material will be placed in temporary storage.





- 2. Soil stockpiles will be encircled with a berm and/or silt fence. Hay bales will be used, as needed, near catch basins and other discharge points.
- 3. Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers shall be promptly replaced.
- 4. In the unlikely event that soil must be stockpiled for extended lengths of time, stockpiles will be inspected at a minimum of once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC.
- 5. Roll-off or equivalent units used to store any contaminated material will be water tight.
- 6. Storage and handling of contaminated soil will comply with all applicable NYSDEC regulations.

Waste Transportation and Disposal

The following requirements apply to the transportation and disposal of excavated contaminated material from the Site. Methods for compliance with these requirements will be addressed in the EWP:

- 1. Sampling, classification, manifesting, labeling, transporting and disposal of waste will be performed in accordance with all applicable federal, state, and local laws and regulations.
- 2. Materials removed from the Site will be transported directly to the disposal facility.
- 3. All transport of materials will be performed by licensed transporters in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Transporters will be appropriately licensed and trucks will be properly placarded.
- 4. Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).





- 5. Locations where vehicles enter or exit the Site will be inspected daily for evidence of off-site soil tracking.
- 6. Sampling frequency, analysis methods, and analytical laboratory will be approved by the NYSDEC prior to removal of any material from the Site.
- 7. Letters of commitment will be obtained from disposal facilities to be used during the project. The letters will state that the disposal facility is permitted to accept and has the available capacity to receive the waste.
- 8. All vehicles shall be decontaminated prior to leaving the Site, if necessary.

If excavated soil loads contain wet material capable of producing free liquid, all trucks utilized to transport such material will be made watertight with plastic truck liners before loading occurs. Care will be exercised when loading trucks so as to not spill material on the outside of the trucks. In addition, an amendment will be used to reduce the moisture content prior to shipment off-site.

Once a truck is filled with excavated material, spray-on odor suppressing materials such as Rusmar Foam or Biosolve® may be used to reduce potential volatile organic compound (VOC) emissions during transit, if necessary. A plastic tarp will then be used to cover the excavated materials.

The truck will then exit the excavation area and proceed immediately to a decontamination pad. Trucks will be visually inspected (i.e., box sidewalls, box tailgate, and tires, etc.), cleaned with brushes/brooms and decontaminated with pressure sprayers, if necessary, prior to leaving the Site. The qualified environmental professional will be responsible for ensuring that all outbound trucks are decontaminated in accordance with the National Grid-approved Decontamination Plan before leaving the Site.

Locations where vehicles enter or exit the Site will be inspected daily for evidence of off-site soil tracking. Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during completion of all excavation and subsequent





restoration activities. The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport are clean of dirt and other materials derived from the Site during the completed intrusive activities. Cleaning of the adjacent streets will be performed, as needed, to maintain a clean condition with respect to Site-derived materials.

Backfill

The following requirements apply to the fill material used to restore the Site after excavation activities have been completed. Methods for compliance with these requirements will be addressed in the EWP:

- 1. Fill material used to restore the Site will be similar in physical properties to the material removed. Fill used for building foundations or other construction is exempt from this requirement.
- 2. The fill material will be of equal or less permeability than the native soil in or adjacent to the excavated area.
- 3. Backfill will meet the requirements of the lower of the Protection of Groundwater or the Protection of Public Health Soil Cleanup Objectives for Commercial Use, as specified in 6 NYCRR Part 375, Subpart 6.7 (d)(1)(iv)(c).
- 4. Documentation of the quality of the fill will be provided by a certification stating that it is virgin material from a commercial or noncommercial source.
- If documentation of the quality of the fill material can not be provided, a backfill evaluation proposal, which identifies material characterization protocols, will be submitted to and approved by the NYSDEC prior to the use of any backfill material.

Fluids Management

Based on the depth to groundwater beneath the Site (approximately 17 feet below grade), groundwater is not expected to be encountered during any future excavation activities





at the Site. As such, dewatering activities are not expected to be necessary at the Site. In addition, based on the low contaminant concentrations detected in Site groundwater, any purge water from future groundwater sampling activities will not require off-site disposal.

Cover System Restoration

After the completion of soil removal and any other intrusive activities, any disturbed or removed cover material will be restored in-kind. If the type of cover system changes from that which exists prior to the excavation (i.e., crushed stone is replaced by asphalt), this will constitute a modification of that Site EC. A figure showing the modified soil cover component will be included in the subsequent Periodic Review Report and in any updates to the Site Management Plan.

Storm Water Pollution Prevention

If excavation will disturb more than 1 acre of the Site, the contractor performing the excavation work will be responsible for preparing a Storm Water Pollution Prevention Plan (SWPPP), which meet all NYSDEC requirements. A copy of the SWPPP shall be submitted as part of the EWP.

Contingency Plan

If underground tanks or other previously unidentified contaminant sources are encountered during any intrusive activities or Site development-related construction, excavation activities will be suspended until sufficient equipment is mobilized to address such conditions.

Sampling will be performed on product, sediment and surrounding soil, etc., as necessary, to determine the nature of the material and develop proper disposal methods.





Chemical analysis will be performed for a full list of analytes (TAL metals; TCL volatiles and semivolatiles, TCL pesticides and PCBs), unless the Site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during intrusive activities will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report prepared pursuant to Section 5.0 of the SMP.

Community Air Monitoring Plan

The contractor performing the excavation work will be responsible for preparing a CAMP as part of the EWP. Guidance can be obtained in Appendix 1A of DER-10, Generic Community Air Monitoring Plan. At a minimum, the CAMP will include the following:

- Details of the perimeter air monitoring program;
- Action levels to be used:
- Methods for air monitoring;
- Analytes measured and instrumentation to be used;
- A map of the location(s) of all air monitoring instrumentation. A map showing specific locations must be presented for monitoring stations based on generally prevailing wind conditions, with a note that the exact locations to be monitored on a given day will be established based on the daily wind direction.

Exceedances of action levels listed in the CAMP will be reported to the NYSDEC and NYSDOH Project Managers.





Odor Control Plan

The contractor performing the excavation work shall be responsible for preparing an Odor Control Plan, as part of the EWP. This odor control plan is capable of controlling emissions of nuisance odors off-site. If nuisance odors are identified at the Site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. The NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halting of any work, is the responsibility of the property owner's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on and off-site odor nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soil. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soil to trucks for off-site disposal; (e) use of chemical deodorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive activities that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.





<u>Dust Control Plan</u>

A dust control plan that addresses dust management during intrusive activities will be prepared as part of the EWP, and shall include, at a minimum, the following:

- 1. Dust suppression will be achieved though the use of a dedicated on-site water trucks. The trucks will be equipped with water cannons capable of spraying water directly onto excavations and stockpiles.
- 2. The removal of Site cover systems will be done in stages to limit the area of exposed soil, vulnerable to dust production.
- 3. Gravel will be used on roadways to provide a clean and dust-free road surface, if necessary.



APPENDIX E

ENGINEERING AND INSTITUTIONAL CONTROL INSPECTION FORM



ENGINEERING AND INSTITUTIONAL CONTROL INSPECTION FORM

I. Site Background Information

A.	Site Name and Location:
	Site name as it appears on the Environmental Easement:
	Name of the current property owner(s):
	Site Street Address:
	Municipality (-ies): County (-ies):
	Blocks:
	Lots:
	Source information obtained from:
В.	Person responsible for preparing Engineering and Institutional Control Evaluation Form:
	Person's Name:
	Person's Title:
	Company Name:
	Relationship to the Site (check as appropriate): Owner Operator
	Lessee Person Who Conducted the Cleanup Other (describe)
	Street Address:
	City: State:
	Telephone Number: ()
	Fax Number: ()
	E-mail Address:

1

C. (Case Specific Information (Complete all that apply)
•	Site Name:
•	Site Registry Number:
•	Date of final Remediation Report and/or Certificate of Completion:
•	Name and program of assigned Project Manager at issuance of Environmental Easement:
D. I	Existing Site Conditions
	 Describe the physical characteristics of the site (features, topography, drainage, vegetation, access, etc.). If necessary, attach additional sheets.
,	Describe the current site operations/use. If necessary, attach additional sheets.

•	Describe visual integrity/condition engineering control. If necessary, attach additional sheets.
II.	Protectiveness Evaluation
	vironmental Easement and Engineering Control Information (Complete low)
•	Provide the following information for the recorded Environmental Easement:
	Book Number:
	Page Number:
	Date the date the Environmental Easement was filed in the office of the county recording officer:
•	Have any amendments and/or additional filings been recorded that may modify or supersede the Environmental Easement?

s No
If "Yes", provide an explanation. If necessary, attach additional sheets.
luation of Engineering and Institutional Controls
1. Zoning or Land Use Changes (Complete below)
 a. Land use at the time the Environmental Easement was filed (check all the apply):
Non-Residential Residential Agricultural Other
b. Current land use (check all that apply):
Non-Residential Residential Agricultural Other
c. Has there been an actual or pending zoning or land-use change?
Yes No
2. Inspections (Complete below)
Have periodic inspections of the site identified any excavation or other disturbance activities that have taken place within the restricted areas?
YesNo
Date(s) of Disturbance:
Duration of Disturbance: Years Months Days
Date the NYSDEC was notified:
Date Work Plan Approved:

B.

(disturbance. If necessary, attach additional sheets.
-	
:	Name of Contact Person Relative to the Disturbance:
,	Γitle:
;	Street Address:
	City: State: Zip Code:
,	Telephone Number:
]	Email Address:
a. Are	Laws and Regulations (Complete below) there any subsequently promulgated or modified environmental
YesNo	s or regulations, which apply to the site?
Ease	Yes", has the evaluation also determined that the Environmental ement and engineering control, as applicable, meets the tirements of the new laws and regulations?
YesNo	
that did been ad	Environmental Easement and engineering control, as applicable not meet the requirements of the new laws and regulations has dressed in the following manner to bring them into compliance. If ry, attach additional sheets.

Description of the disturbance and methods to address the