Lebanon West Farms I and II

BRONX, NEW YORK

Site Management Plan

NYSDEC Site Number: C203060

Prepared for:

Lebanon West Farms Associates, L.P.
902 Broadway, 13th Floor
New York, NY 10010

Prepared by:

Nicholas A. Andrianas, P.E.
28 Henry Street
Kings Park, New York 11754

Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date

NOVEMBER 2014

CERTIFICATION

I, Nicholas A. Andrianas, P.E., certify that I am currently a NYS registered professional engineer and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Nicholas A. Andrianas, P.E. Date 11/26/14

TABLE OF CONTENTS

TABLES

FIGURES

10c. As Built Waterproofing / Sub-Slab Depressurization System Layout for Building 3

11. Elevation of Residuals Management Zone

12. Post remedial Groundwater Monitoring Well Locations & Concentrations in Groundwater above NYSDEC TOGS

13. As Built Composite Cover System

APPENDICES

A. Excavation Work Plan
B. Environmental Easement
C. Metes and Bounds
D. Waterproofing membrane/vapor barrier Specifications; SSDS As-Built Drawings and Specifications; NYSDEC/NYSDOH Passive System Confirmation
E. Generic Health and Safety Plan (HASP)/ Community Air Monitoring Plan (CAMP)
F. Monitoring Well Construction Logs
G. Quality Assurance Project Plan (QAPP)
H. Groundwater Sampling Log
I. Inspection Forms

SITE MANAGEMENT PLAN

1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

1.1 INTRODUCTION

This document is required as an element of the remedial program at Lebanon West Farms I and II (hereinafter referred to as the "Site") under the New York State (NYS) Brownfield Cleanup Program (BCP) administered by New York State Department of Environmental Conservation (NYSDEC). The Site was remediated in accordance with Brownfield Cleanup Agreement (BCA) Index# C203060-10-11 Site # C203060, which was executed in November 2011.

1.1.1 General

Lebanon West Farms Associates, L.P. entered into a BCA with the NYSDEC to remediate a 0.7808 acre property located in the Bronx, New York. This BCA required the Remedial Party, Lebanon West Farms Associates, L.P., to investigate and remediate contaminated media at the site. A figure showing the Site location and boundaries of this 0.7808-acre Site is provided in Figure 1. The boundaries of the Site are more fully described in the metes and bounds Site description that is part of the Environmental Easement in Appendix B.

After completion of the remedial work described in the Remedial Action Work Plan, some contamination was left in the subsurface at this Site, which is hereafter referred to as 'remaining contamination." This Site Management Plan (SMP) was prepared to manage remaining contamination at the Site until the Environmental Easement is extinguished in accordance with 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.

This SMP was prepared by Nicholas A. Andrianas, P.E., on behalf of Lebanon West Farms Associates, L.P., in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) and Engineering Controls (ECs) that are required by the Environmental Easement for the site.

1.1.2 Purpose

The Site contains contamination left after completion of the remedial action. Engineering Controls have been incorporated into the Site remedy to control exposure to remaining contamination during the use of the Site to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Office of the City Register, will require compliance with this SMP and all ECs and ICs placed on the Site. The ICs place restrictions on Site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary ensure compliance with all ECs and ICs required by the Environmental Easement for contamination that remains at the Site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the Site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; (3) operation and maintenance of all treatment, collection, containment, or recovery systems; (4) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports; and (5) defining criteria for termination of treatment system operations.

To address these needs, this SMP includes three plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) a Monitoring Plan for implementation of Site Monitoring; (3) an Operation and Maintenance Plan for implementation of remedial collection, containment, treatment, and recovery systems (including, where appropriate, preparation of an Operation and Maintenance Manual for complex systems).

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the environmental easement, which is grounds for revocation of the Certificate of Completion (COC);

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the BCA (Index # C203060-10-11; Site #C203060) for the Site, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. 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 in New York City, County of the Bronx, New York and is identified as Block: 4007; Lot: 15 and Block: 3909; Lot: 8 on the Bronx County Tax Map. The Site is an approximately 0.7808-acre area bounded by Lebanon Street to the north, East 178th Street to the south, a tire repair shop, vacant lots, residential and commercial buildings to the east, and vacant lots, and residential and commercial buildings to the west. The boundaries of the Site are more fully described in Appendix C – Metes and Bounds.

1.2.2 Site History

Historical records indicate that the Site was vacant in the 1800s and early 1900s. In 1908, part of the Site was developed with a dwelling. By 1918, the Site was developed with a structure and the New York Westchester and Boston Railway. The New York Westchester & Boston Railway was an interurban system that operated from 1912 to 1937. From 1928 to 1977, the Site was developed with the Westchester and Boston Railway, a structure, an office, automobile garages, shops, and a manufacturing office. In 1982, the Site was developed with the New York Westchester and Boston Railway, a vacant office, commercial buildings, a store, and automobile garages. From 1983 to 1996, the Site was developed with an automobile garage and the New York Westchester and Boston Railway. In 2003, the railroad tracks from the Railway were removed by the MTA, although portions of the steel infrastructure remained on the northern property line of the northern parcel and concrete piers remain throughout the Site.

1.2.3 Geologic Conditions

Based upon the Geology and Engineering Geology of the New York Metropolitan Area, Field Trip Guidebook T361, July 20 – 25, 1989, edited by Charles A. Baskerville for the 28th International Geologic Congress (Ref. 4), the Site is located in bedrock belonging to the Ordovician-Cambrian Inwood Marble Formation consisting of dolomite marble, calcschist, and grades to underlying patchy Lowerre Quartzite of early Cambrian age. Surficial geologic materials are characterized as ground moraine and/or urban fill consisting of sand, silt, clay and gravel. According to Site-specific geological data obtained during this RI, the upper five feet of the Site contains unconsolidated fill materials. Geologic sections are shown in Figures 2a and 2b.

According to recent survey measurements, the Site elevation ranges from 20 to 22 feet above mean sea level based on the Borough of the Bronx Datum (BBD). The on-site topography is relatively flat with a minimal slope towards the south. The uppermost groundwater surface occurs at 11.38 to 13.40 feet above mean sea level (BBD) within the unconsolidated materials. Based upon site-specific groundwater elevation data, groundwater flows in a south westerly direction. Underlying groundwater in this area of the South Bronx is not used for potable supply purposes. As such, no potable groundwater resources appear to be threatened by local groundwater quality. A groundwater table contour map is shown in Figure 3.

1.3 SUMMARY OF REMEDIAL INVESTIGATION FINDINGS

A Remedial Investigation (RI) was conducted at the Site in February and March 2011. The RI was completed as a further characterization of the Site based upon the results already reported from a Phase II Environmental Site Assessment (ESA) dated February 2009 conducted by ERM. The Phase II ESA included a Ground Penetrating Radar (GPR) survey, which identified a 15 feet by 2 feet metal anomaly along East Tremont Avenue on the southern portion of the Site. In addition, 11 soil and four groundwater samples were obtained from borings drilled across the Site. Soil samples were collected from the

zero to three feet and nine to 11 feet below grade intervals and groundwater samples were collected from interface, 12 to 16 feet below grade. The data developed by ERM were used as a point of departure for the RI to expand upon the available information. The Scope of Work of the RI included:

- Utility Clearance;
- Soil Vapor Sampling and Analysis;
- Soil Sampling and Analysis;
- Monitoring Well Installation, Surveying, Sampling and Analysis; and,
- Report Preparation.

Based on the analytical results obtained during the RI conducted in 2011 as well as the analytical data presented in the Phase II ESA dated February 2009, the RI concluded the following:

- The contaminants of concern at the Site include VOCs, SVOCs, pesticides, and metals.

- The subsurface soil encountered generally consisted of organic matter at the surface followed by dark brown medium grained sand with some brick, wood, and concrete, which was in turn underlain by clay and silt.

- The Ground Penetrating Survey (GPR) conducted in 2009 identified a 15 feet by two feet metal subsurface anomaly along East Tremont Avenue on the southern lot. This anomaly was not identified during excavation activities during the redevelopment of the site.

- Twenty-one soil samples were collected from the Site. The PAHs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene; the pesticides dieldrin, 4,4’-DDD, 4,4’-DDE, and

4,4'-DDT; and, the metals arsenic, barium, cadmium, trivalent and hexavalent chromium, copper, lead, mercury, nickel, and zinc were detected above 6 NYCRR Part 375 Unrestricted Use SCOs (Track 1). The same SVOCs and the metals barium and lead were also detected above the Part 375 Restricted Residential SCOs. VOCs and the PCB Aroclor 1260 were detected below 6 NYCRR Part 375 Unrestricted Use SCOs. The SVOC, pesticides, and metals detected above the Track 1 SCOs are attributed to oil and/or emissions related to the Site's historic auto and railway usage. Pre-remediation soil contaminants are illustrated on Figure 4.

- The shallow groundwater table was encountered from approximately elevation 11 to 13 feet above mean sea level (BBD). The direction of shallow groundwater flow based upon static water levels collected from the network of five newly installed monitoring wells (MW-1 through MW-5) is toward the southwest.

- The petroleum-related compound MTBE was detected above the NYSDEC TOGS class GA standard/guidance value in the groundwater sample collected from MW-1. In addition, the chlorinated solvents cis-1,2-Dichloroethene, and trichloroethene and tetrachloroethene were detected above their NYSDEC TOGS class GA standard/guidance value in the sample collected from MW-1 and MW-2, respectively. The presence of tetrachloroethene and its degradation products is attributed to the Site's historic auto and railway usage as tetrachloroethene was commonly used as a degreaser in the automobile and railway industries. As the Site was most recently used as maintenance and storage for the MTA, the detection of MTBE may be related to the presence of MTA vehicles on–site. Pre-remediation groundwater contaminants are illustrated on Figure 5.

- The dissolved metal manganese was detected above the NYSDEC TOGS class GA standard/guidance value in the samples obtained from wells MW-1, MW-3, and MW-5. Sodium was detected above the NYSDEC TOGS class GA standard/guidance value in all samples obtained. These metals are naturally occurring and are not believed to be related to a discrete spill or release.

- No SVOCs, pesticides, or PCBs were detected in the samples collected from the groundwater monitoring wells.

- Eight temporary soil vapor points (SVP-1 through SVP-8) were installed at the Site. Due to poor air volume recovery, only four of the eight samples were analyzed. The VOCs acetone, benzene, carbon disulfide, chloromethane, cyclohexane, dichlorodifluoromethane, ethanol, ethyl acetate, heptane, hexane, isopropyl alcohol, methylene chloride, methyl ethyl ketone, propylene, 2,2,4-trimethylpentane, tertiary butyl alcohol, tetrachloroethylene, tetrahydrofuran, toluene, trichloroethylene, m,p-Xylene, and total xylenes were detected in the soil vapor throughout the Site. The higher detections were found on the northern lot and the lower detections were found on the southern lot. The detections of VOCs in the soil vapor are related to off-gassing from the presence of VOCs in the soil and groundwater related to the Site's historic auto and railway usage. Pre-remediation soil vapor contaminants are illustrated on Figure 6.

1.4 SUMMARY OF REMEDIAL ACTIONS

The Site was remediated in accordance with the NYSDEC-approved Remedial Action Work Plan dated March 2012.

The following is a summary of the Remedial Actions performed at the Site:

1. Excavation of soil/fill exceeding Track 4 Site Specific Soil Cleanup Objectives (SSSCOs), plus additional soil as needed to install the foundation for the new buildings proposed for the Site. The SSSCOs for the Site are listed in Table 1.

2. Screening for indications of contamination (by visual means, odor, and monitoring with a PID) of all excavated soil during any intrusive Site work.

3. Appropriate off-site disposal of all material removed from the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal. A waste disposal facility was selected based on the data that was collected during the RI as well as from additional soil waste characterization samples that were analyzed as needed to obtain an approval for soil disposal.

4. Collection and analysis of end-point samples in accordance with DER-10 to evaluate the performance of the remedy with respect to attainment of SSSCOs.

5. In-Situ Chemical Oxidation (ISCO) was used to treat chlorinated volatile organic compounds identified in groundwater at the Site.

6. Import of all materials to be used for fill were in compliance with (1) the soil cleanup objectives outlined in 6 NYCRR Part 375-6.7(d); and (2) all Federal, State and local rules and regulations for handling and transport of material.

7. Construction of an engineered composite cover consisting of: (1) a minimum two-foot clean fill buffer with demarcation barrier in all landscaped and non-covered areas; and (2) concrete building foundations, sidewalks/pathways, and asphalt covered parking areas to prevent human exposure to residual contaminated soil remaining under the Site.

8. A waterproofing membrane/vapor barrier and a sub-slab depressurization system (SSDS) were incorporated into the foundation of the three buildings as illustrated on Figure 10. The waterproofing membrane/vapor barrier specifications and SSDS as-built drawings and specifications are enclosed as Appendix D.

9. Collection and analysis of post-remedial groundwater samples to evaluate the performance of the remedy. Post-remedial groundwater monitoring well locations are illustrated on Figure 12.

10. Recording of an Environmental Easement, including ICs, to prevent future exposure to any residual contamination remaining at the Site. A copy of the Environmental Easement is included as Appendix B.

11. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting;

Remedial activities were completed at the Site in July 2014.

1.4.1 Removal of Contaminated Materials from the Site

The removal of materials from the Site included: 1) the demolition of concrete piers; 2) the excavation and removal of subsurface soils; and, 3) excavation and removal of construction and demolition debris. The full extent of excavation is illustrated on Figure 7.

1.4.1.1 Soil Cleanup Objectives

The remedy selected for this Site included a Track 4 cleanup with SSSCOs and implementation of certain IC/ECs. Although some endpoint samples exceeded the Track 4 SSSCOs, the top two feet of all exposed soil meets the SCOs, as required for a Track 4 cleanup. An endpoint sample location map is provided as Figure 9. A list of the SSSCOs for the primary contaminants of concern (COCs) and applicable land use for this Site is provided in Table 1.

1.4.1.2 Removal Quantities

During the remedial action, a total of 10,984.47 tons of soil were removed from the Site. A total of 4,141.22 tons of soil were disposed of at the Clean Earth of Carteret facility in Carteret, NJ; 935.35 tons of soil/fill were disposed of at the Teterboro Landing Development Project in Teterboro, NJ; and, 5,907.90 tons of soil were disposed of at the Soil Safe Facility in Logan Township, NJ. A summary of soil disposal (including disposal dates) is enclosed as Table 2. The volume of construction and demolition debris removed from the Site during demolition/excavation was 2,325 cubic yards. The construction and demolition debris was disposed of at Tilcon New York, Inc. of Bronx, NY.

1.4.1.3 Location of Materials Removed

To comply with the Track 4 SSSCOs, the excavation of soil site-wide to 2, 5 or 10 feet below grade was required. A figure showing areas where excavation was performed as well as the final excavation depths is shown in Figure 7. Tables 3 through 7 include the analytical results from the endpoint soil sampling.

1.4.2 Site-Related Treatment Systems

1.4.2.1 In-Situ Chemical Oxidation

Based upon the detection and distribution of groundwater contaminants, treatment including in-situ chemical oxidation and natural attenuation was performed in the northern portion of the Site. From June 29 through July 6, 2012 Regenox™ (ISCO treatment) was injected into the shallow groundwater. The locations of the injections are illustrated on Figure 8. ISCO injection was performed at injection points IP-1 through IP-18 from a depth of nineteen feet up to nine feet below grade; at a dosage rate of 160-pounds of Regenox™ per point and a water/chemical ratio of one to one.

1.4.2.2 Sub-Slab Depressurization System (SSDS)

To prevent infiltration of vapor from residual VOCs dissolved in groundwater into the new buildings' interior, installation of an SSDS was included in the construction of the new buildings' foundation. The SSDS passively maintains a vacuum underneath the slab while allowing the vapors below the concrete slab to vent outdoors without intruding into the building. The SSDS consists of horizontal trenches filled with perforated pipe. The horizontal pipes are connected to vertical risers that are connected to six-inch headers that extend above the roof of the building. Based on the findings from the post-remedial sub-slab vapor sampling (Table 8) it was determined acceptable by the NYSDEC and NYSDOH that the SSDS remain passive. All pipe penetrations through the waterproofing membrane/vapor barrier were sealed in accordance with the

manufacturer's recommendations. The SSD layout, vent, roof, and trench detail are illustrated on Figure 10. The as-built drawings and specifications for the SSDSs as well as the documentation of the approval to have a passive system are included in Appendix D.

1.4.3 Remaining Contamination

To comply with the SSSCOs, soil was excavated down to depths required for the foundations of the buildings. After completion of soil excavation activities, the top of the residual contaminated zone was surveyed. The elevation of the residual contaminated zone is illustrated on Figure 11. The residual contamination zone beneath the building's foundation was covered with a physical demarcation barrier/layer consisting of a Stego™ 15-mil vapor barrier. The vapor barrier was laid at the final excavation depth, beneath all of the building slabs. This demarcation layer constitutes the top of the 'Residuals Management Zone', the zone that requires adherence to special conditions for disturbance of contaminated residual soils defined in this SMP. Included within this zone are the utilities for the new building as well as the piping and gravel that were installed as part of the SSDS. Exposure to residual contaminated soils will be prevented by the composite cover system.. This composite cover system is comprised of (1) a two-foot clean fill buffer in all landscaped areas. The two-foot thick cover consists of clean soil/sand underlain by the demarcation barrier (orange snow fence) to demarcate the cover soil from the residual soil. Clean soil meets the soil cleanup objectives outlined in 6 NYCRR Part 375-6.7(d); and, (2) impermeable areas (concrete building foundations (slab/walls), aphalt parking lot, and sidewalks/pathways) to prevent human exposure to residual contaminated soil remaining under the Site. The waterproofing membrane/vapor barrier and the composite cover system are shown on Figure 13.

Soil excavation endpoint samples were collected from the final excavation depths. The analytical results from the samples illustrated that the remaining contamination consists of the polyaromatic hydrocarbons benzo(a)anthracene, benzo(k)fluoranthene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene, the pesticides 4,4'-DDE, 4,4'-DDT, Dieldrin, and 4,4'-DDD, and the metals arsenic, barium, chromium, copper, lead, nickel, zinc and mercury in limited areas throughout the Site at levels above Track 1 UUSCOs.

Tables 3 through 7 summarize the results of all soil samples remaining at the Site that exceed Track 1 (unrestricted) SCOs after completion of the Remedial Action. Tables 3 through 7 also summarize the results of all soil samples that meet the SCOs for unrestricted use of the Site. It is noted that the SVOCs data summarized on Table 4 details compounds benzo(a)pyrene and dibenzo(a,h)anthracene, contain concentrations in select end-points above the SSSCOs. Additionally, the metals data summarized on Table 7 details compounds arsenic, barium, and copper contain concentrations in select end-points above the SSSCOs. It is important to note, that for a Track 4 remedy, the SSSCOs must be achieved in the top two feet of exposed surface soils. SVOCs and metals remaining in the soil do not represent contaminant source material. End-point sample locations are illustrated on Figure 9.

2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

2.1 INTRODUCTION

2.1.1 General

Since remaining contaminated soil and groundwater/soil vapor exists beneath the Site, Engineering Controls and Institutional Controls (EC/ICs) are required 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 NYSDEC.

2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the Site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the features to be evaluated during each required inspection and periodic review;
- 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 proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC.

2.2 ENGINEERING CONTROLS

2.2.1 Engineering Control Systems

2.2.1.1 Composite Cover System

Exposure to remaining contamination in soil at the Site is prevented by a composite cover system placed over the Site. This cover system is comprised of a minimum of 24 inches of clean soil with demarcation barrier in all landscaped and non-covered areas, asphalt parking areas, concrete-covered sidewalks/pathways, and concrete building slabs/walls. The Excavation Work Plan that appears in Appendix A outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection and maintenance of this cover are provided in the Monitoring Plan included in Section 4 of this SMP.

2.2.1.2 In-Situ Chemical Oxidation

Based upon the detection and distribution of groundwater contaminants, treatment including in-situ chemical oxidation and monitored natural attenuation was performed in the northern portion of the Site. From June 29 through July 6, 2012 Regenox™(ISCO treatment) was injected into the shallow groundwater.. The locations of the injections are illustrated on Figure 8. ISCO injection was performed at injection points IP-1 through IP-18 from a depth of nineteen feet up to nine feet below grade; at a dosage rate of 160-pounds of Regenox™ per point and a water/chemical ratio of one to one.

This treatment constitutes a one-time injection via temporary injection points utilizing direct-push drilling. As such, no system operation or maintenance is required. Groundwater monitoring activities to assess the effectiveness of the ISCO injections will continue, as determined by the NYSDEC, until residual groundwater concentrations are

found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. System monitoring will include quarterly groundwater monitoring utilizing four newly-installed monitoring wells. The first round of post remedial monitoring was performed in July 2014 and results are summarized on Table 14. Procedures for the maintenance of the monitoring well network and the quarterly monitoring are outlined in the Monitoring Plan (Section 3 of this SMP).

2.2.1.3 Sub-slab Depressurization (SSD) System

Based on the results of the sub-slab vapor sampling, a passive SSDS was installed at the Site for additional protection in preventing the off-gassing of any residual VOCs in the groundwater. The SSDS passively maintains a vacuum underneath the slab while allowing the vapors below the concrete slab to vent outdoors without intruding into the building. The SSDS consists of horizontal trenches with perforated pipe, a filter sock, and gravel. The horizontal pipes are connected to vertical risers that connect to a header, which extends above the roof of the building. Any pipe penetrations through the waterproofing membrane/vapor barrier were sealed in accordance with the manufacturer's recommendations. The SSD layout, vent, roof, and trench detail is illustrated on Figure 10. The as-built drawings and specifications for the SSDS are included in Appendix D.

Procedures for operating and maintaining the SSDS are documented in the Operation and Maintenance Plan (Section 4 of this SMP). Procedures for monitoring the system are included in the Monitoring Plan (Section 3 of this SMP). The Monitoring Plan also addresses severe condition inspections in the event that a severe condition, which may affect controls at the site, occurs.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

2.2.2.1 Composite Cover System

The composite cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity.

2.2.2.2 Sub-slab Depressurization System (SSDS)

Based on the results of the post-remedial sub-slab vapor sampling, written approval was granted by the NYSDEC to have a passive SSDS at the site as opposed to an active SSDS which was originally proposed in the approved RAWP. However, an additional round of soil vapor sampling will be performed.

2.2.2.3 In-Situ Chemical Oxidation/Monitored Natural Attenuation

Groundwater monitoring activities to assess the effectiveness of the ISCO injections will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If conditions warrant, additional treatment will be completed. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

2.3 INSTITUTIONAL CONTROLS

A series of Institutional Controls is required by the Decision Document to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the Site to restricted residential, commercial and/or industrial uses only. Adherence to these Institutional Controls on the Site is required by the Environmental Easement and will be implemented under this Site Management Plan.

These Institutional Controls are:

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns;
- All Engineering Controls must be operated and maintained as specified in this SMP;
- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP;

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

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

- The property may only be used for restricted residential, commercial, and/or industrial uses provided that the long-term Engineering and Institutional Controls included in this SMP are employed;
- The property may not be used for a higher level of use, such as unrestricted use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use;
- Vegetable gardens and farming on the property are prohibited (this does not include raised bed gardens with imported clean soil or green roofs);
- 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

The Site has been remediated for restricted residential use. Any future intrusive work that will penetrate the composite cover system, or encounter or disturb the remaining contamination, including any modifications or repairs to the existing cover system will be performed in compliance with the Excavation Work Plan (EWP) that is attached as

Appendix A to this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the Site (see Appendix E). A sample HASP is attached as Appendix E to this SMP that is in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section A-1 of the EWP. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5).

The Site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and bridge footings). The Site owner will ensure that Site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in this SMP.

2.4 INSPECTIONS AND NOTIFICATIONS

2.4.1 Inspections

Inspections of all remedial components installed 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, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;

- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If Site records are complete and up to date; and,
- Changes, or needed changes, to the remedial or monitoring system;

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 5).

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 effectiveness of the EC/ICs implemented at the Site by a qualified environmental professional as determined by NYSDEC.

2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in Site use that are required under the terms of the BCA, 6NYCRR Part 375, and/or Environmental Conservation Law.
- 7-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.
- Notice within 24-hours of any damage or defect to the foundations structures that reduces or has the potential to reduce the effectiveness of other Engineering Controls and likewise any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of

Engineering Controls in place at the Site, with written confirmation within 7 days that includes 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:

- 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 BCA, 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 below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to CA RICH. These emergency contact lists must be maintained in an easily accessible location at the Site.

Table 2: Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center:	**(800) 272-4480** **(3 day notice required for utility markout)**
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362
CA RICH CONSULTANTS, INC.	(516) 576-8844
Lebanon West Farms Associates, L.P.	(646) 388-8216
Remedial Engineer (Nicholas A. Andrianas, P.E.)	(631)-269-2680
NYSDEC Project Manager (Dana Kaplan)	(718)-482-7541.

* Note: Contact numbers subject to change and should be updated as necessary

2.5.2 Map and Directions to Nearest Health Facility

Site Location: 1160 Lebanon Street, Bronx, New York

Nearest Hospital Name: East Tremont Medical Center

Hospital Location: 930 East Tremont Avenue, Bronx, NY 10460

Hospital Telephone: (718) 860-1111

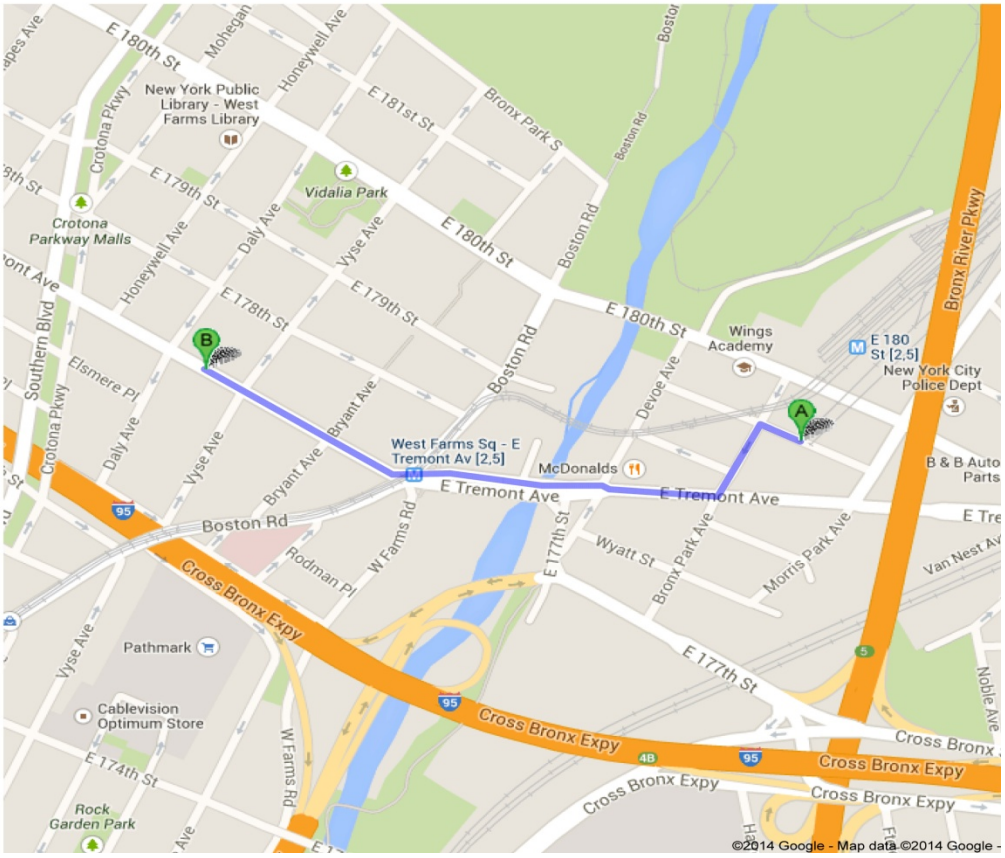
Directions to the Hospital:

1. Head northwest on Lebanon St toward Bronx Park Ave
2. Take the 1st left onto Bronx Park Ave
3. Take the 2nd right onto E Tremont Ave

Total Distance: 0.5 miles

Total Estimated Time: 2 minutes

Map Showing Route from the Site to the Hospital:



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 found at the beginning of this Contingency Plan (Table 2). The list will also be posted prominently at the Site and made readily available to all personnel at all times.

2.5.3.1 Procedures for spills

If visual inspection and/or soil screening identify evidence of a petroleum release, either from equipment inside the new building or petroleum encountered during future excavation/construction activities, the owner and Remedial Engineer will be contacted, and all work activities will be halted until further instructions are received from the Remedial Engineer. The spill will be reported to the NYSDEC Spill Hotline (1-800-457-7362) within two hours of discovery.

2.5.3.2 Evacuation plans

- In case of a fire, employees/contractors/residents should activate the nearest fire alarm box and/or make a telephone call to the local Fire Department via 911. The locations of the fire alarm boxes are noted on the evacuation floor plans in the new building.
- It may be necessary to activate additional fire alarm boxes, or shout the alarm, if people are still in the building and the alarm has stopped sounding, or if the alarm does not sound. This can be done while exiting.
- Persons discovering a fire, smoky condition, or explosion should pull the fire alarm box. Any pertinent fire or rescue information should be conveyed to the Fire Department. All emergency telephone numbers are listed in Section 2.5.1.
- When the fire alarm sounds, all personnel should ensure that nearby personnel are aware of the emergency, quickly shutdown operating equipment, close doors and exit the building using stairwells.

- All occupants should exit the building.
- All occupants and workers should know where primary and alternate exits are located, and be familiar with the various evacuation routes available. Floor plans with escape routes, alternate escape routes, and exit locations should be posted in the building.
- Building occupants must NOT use elevators as an escape route in the event of a fire.
- To report all other emergencies and injuries, a call should be placed to 911. State you name, your location, and the nature of the call. Speak slowly and clearly. Wait for the dispatcher to hang up first. On occasion the dispatcher may need additional information or may provide you with additional instructions.
- Small fires can be extinguished only if you are trained to use a fire extinguisher. However, an immediate readiness to evacuate is essential.
- All fires, even those that have been extinguished, must be reported to the property owner immediately.
- Do not enter a room that is smoke filled.
- Do not enter a room if the door is warm to touch.

2.5.3.3 Procedures for Breach of Composite Cover System

The following procedures will be required if breaching of the composite cover system is needed or occurs or is discovered during a monitoring/inspection event in accordance with Section 3.2. If site excavation activities are planned the "Excavation Work Plan" applies (Appendix A). It is noted that no planned breach beneath any on-site building will be allowed that damages the SSDS piping. The map of the PE-certified as-built drawings for the SSDS (Appendix D) must be consulted prior to disturbance of the slab to avoid digging in pipe locations. If work must be done below the cover system, people should be directed to the Excavation Work Plan. Emergency procedures should only be followed in the case of an accident.

- The NYSDEC and NYSDOH will be notified of the request, and approval will need to be granted prior to the planned breach. If an unplanned breach occurs, the above agencies will be notified within 24 hours of the discovery of the occurrence.
- A written plan detailing the proposed repair or replacement activities will be submitted for review. A Site Plan indicating the area of the breach will be included in the plan.
- Once approval is received, the NYSDEC and NYSDOH will be notified at least five days prior to plan implementation to afford the ability to be on-site during the repair/replacement activities.
- If a breach should occur, grout injection will be performed, where applicable, to eliminate water infiltrations, fill voids, and repair any cracks of the waterproofing membrane/vapor barrier. It is noted that no planned breach will be allowed that damages the SSDS piping. The map of the piping layout (Figure 10 and Appendix D) must be consulted to avoid digging in pipe locations. The basic steps for this type of crack repair are:

    1. Clean the area to be injected; remove any delaminated concrete, dust, dirt, etc. in and around the crack;
    2. Drill holes for injection packers at an angle to intersect the crack; the spacing for the holes is determined by a NYS-licensed P.E. based on the size and severity of the crack(s);
    3. Install and tighten packers;
    4. Flush crack with water; in the event that there is water seeping through the crack, this step shall not be necessary;
    5. Inject the chemical grout beginning at the bottom; continue along the crack from one end to the other; and,
    6. Remove the injection packers, patch the holes, remove any excess surface grout and clean the equipment.

- If a breach of an area greater than 12 inches in diameter is requested, the concrete foundation in the area will be saw cut, removed, and disposed of properly as construction and demolition debris. The concrete area to be saw cut will be greater than the area of waterproofing membrane/vapor barrier to be breached. Upon completion of the subsurface activities, the waterproofing membrane/vapor barrier will be installed according to the manufacturer's product specifications with the waterproofing membrane/vapor barrier overlapping the original barrier appropriately. The ends of the barrier will be sealed as per the manufacturer's product specifications to ensure a vapor proof seal. It is noted that no planned breach will be allowed that damages the SSDS piping. The map of the piping layout (Figure 10) must be consulted to avoid digging in pipe locations.

- As all soil was removed above the level of the waterproofing membrane/vapor barrier, there will not be any soil to be removed or managed due to a breach. However, if work is to be done beneath the demarcation layer (vapor barrier) the Excavation Work Plan must be followed.

- All repairs to Composite Cover System breaches must be inspected and certified by a Professional Engineer licensed in NY State.

3.0 SITE MONITORING PLAN

3.1 INTRODUCTION

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the Site, the composite cover system, and all affected site media identified below. Monitoring of other

Engineering Controls is described in Chapter 4, Operation, Monitoring and Maintenance Plan. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards and Part 375 SCOs for soil;
- Assessing achievement of the remedial performance criteria.
- Evaluating Site information periodically to confirm that the remedy continues 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 on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and,
- Annual inspection and periodic certification.

Quarterly monitoring of the performance of the remedy and overall reduction in contamination on-site will be conducted for at least the first 18 months. The frequency thereafter will be determined by NYSDEC. Trends in contaminant levels in groundwater in the affected areas, will be evaluated to determine if the remedy continues to be

effective in achieving remedial goals. Monitoring programs are summarized in Table 3 and outlined in detail in Sections 3.2 and 3.3 below.

Table 3: Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Event	Matrix	Analysis	Termination Criteria
Groundwater Monitoring and Sampling	Quarterly for 24 months. Frequency thereafter will be proposed in first Periodic Review Report	Monitoring and Sampling	Ground water	VOCs via EPA Method 8260	See Section 2.2.2.3
Composite Cover System	Annual. First inspection no more than 18 months after COC	Inspection	Visual	None	See Section 2.2.2.1
Passive SSDS	Annual. First inspection no more than 18 months after COC	Inspection	Visual	None	See Section 2.2.2.2
Soil Vapor	Single event or as determined necessary	Sampling	Soil Vapor	VOCs via TO-15	In consultation with NYSDEC and NYSDOH

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH

3.2 COMPOSITE COVER SYSTEM MONITORING

Exposure to residual contaminated soils is being prevented by an engineered, composite cover system that was built on the Site. The composite cover system is shown on Figure 13.

The composite cover system will remain intact 24-hours a day, seven days a week, for 365 days a year. Breaching of the demarcation barrier underneath the clean fill buffer, concrete sidewalks, foundation walls and slabs or waterproofing membrane/vapor barrier is prohibited by the Environmental Easement. In the unlikely event of an unanticipated accidental or requested breach, the procedure for response to breach of the composite cover system is outlined in Section 2.5.3.3. If work must be done below the cover system, then the Excavation Work Plan applies to the planned activities. Emergency procedures should only be followed in the case of an accident.

Monitoring of the composite cover system will occur on an annual basis as long as the Environmental Easement is in effect to ensure the system's integrity. Monitoring will consist of inspection and certification by a NYS-licensed P.E. or a QEP as per sections 1.5 and 6.3 of NYSDEC DER-10, which shall evaluate the structural integrity of the concrete floor, support columns into the floor and the wall joints. If any cracks or openings are identified, they shall be screened for organic vapors with a field PID and any readings shall be noted. In addition, any cracks or openings in the floor shall then be sealed. The results of the inspection will be included in the Periodic Review Report. In addition, the composite cover system must be inspected and certified any time a breach in the system occurs. The inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the composite cover system has been reported or an emergency occurs that is deemed likely to affect the operation of the system.

3.3 MEDIA MONITORING PROGRAM

3.3.1 Groundwater Monitoring

Groundwater monitoring will be performed on a periodic basis to assess the performance of the remedy. The network of monitoring wells has been installed to monitor both up-gradient and down-gradient groundwater conditions at the Site. The network of on-site wells has been designed based on the results of the RI.

MW-2 was installed at the Site as part of the Remedial Investigation in February 2011. The remaining newly installed monitoring wells, MW-6, MW-7, and MW-8 were installed at the Site in July 2013 and July 2014 and will serve as the groundwater monitoring wells for the post-remedial groundwater monitoring (see Figure 12 for well locations). Monitoring well construction logs are included in Appendix F. Groundwater samples will be collected from the wells using the low-flow sampling methodology as specified in the QAPP (Appendix G), submitted to an Environmental Laboratory Approval Program (ELAP) Certified Laboratory, and analyzed for TCL VOCs via EPA Method 8260 with NYSDEC ASP Category B deliverables. Additional ISCO parameters including dissolved oxygen (DO) and oxidation/reduction potential (ORP) will be monitored in the field during sampling.

The four wells will be sampled on a quarterly basis for 24 months. After the initial 24 month period, the monitoring will continue, as determined by NYSDOH and NYSDEC, until residual groundwater concentrations are found to be below NYSDEC standards or have become asymptotic over an extended period. The monitoring frequency after the initial 18 month period will be proposed in the first Periodic Review Report for approval by NYSDEC. Sampling will continue on a quarterly basis until such time as NYSDEC approves the proposed revised sampling schedule. QA/QC samples will be collected and analyzed in connection with the testing as set forth in the Quality Assurance Project Plan (QAPP) (Appendix G) and will include one trip blank, one field blank, one duplicate, one matrix spike, and one matrix spike duplicate. In addition, the data will be validated by a

qualified third-party and a Data Usability Summary Report (DUSR) will be prepared and submitted with each PRR. All data will be submitted in the NYSDEC-approved Electronic Data Deliverable (EDD) format. The sampling frequency may be modified with the approval NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC. Deliverables for the groundwater monitoring program are specified below.

3.3.1.1 Sampling Protocol

All monitoring well sampling activities will be recorded in a field book and a groundwater-sampling log presented in Appendix H. Other observations (e.g., well integrity, etc.) will be noted on the well sampling log. The well sampling log will serve as the inspection form for the groundwater monitoring well network.

First, depth-to-water and depth-to-bottom measurements will be collected from the monitoring wells. Purging/sampling will be performed in accordance with EPA's Low-Flow (minimal drawdown) Groundwater Sampling Procedures[1] (see the QAPP in Appendix G). Purging and sampling will be performed using a low-flow sampling pump at a pumping rate no greater than 0.5 liters per min (LPM). Water levels within the well will be monitored using an electronic water level indicator and a pumping rate will be maintained to limit drawdown to less than 0.33 feet if possible. In-line water quality field parameters will be measured at a frequency no less than every five minutes. Purging will continue until the readings of pH, temperature, conductivity, ORP, and DO have stabilized (i.e. three successive readings within approximately 0.1 for pH, 3% for conductivity, 10mv for ORP, and 10% for DO). Purge water will be contained in 55-gallon drums and disposed of in accordance with applicable regulations.

After purging is complete, a sample of the groundwater will be collected at the established low-flow pumping rate directly from the pump discharge into laboratory-

[1] EPA Region 1. Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells. January 2010.

issued containers by a QEP. The samples will be placed in a cooler on ice and sent to an ELAP certified laboratory via overnight delivery for analysis as specified in Section 3.3.1, above. The following samples will also be collected for QA/QC purposes: trip blank, field blank, duplicate sample, matrix spike, and matrix spike duplicate.

A qualified third-party Data Validator will review the groundwater laboratory data and prepare a DUSR. All data will be provided in the NYSDEC-approved EDD format.

3.3.1.2 Sampling QA/QC

All on-site sampling equipment will be decontaminated between each use in the following manner: laboratory grade detergent and fresh water wash using scrub brush, followed by two fresh water rinses and final air dry. The submersible pump used for groundwater sample collection will be decontaminated between sample collection by passing the detergent and water mixture through the pump, followed by two fresh water rinses. Gloves worn for sample handling will be discarded between sample collections. Dedicated, new polyethylene tubing will be used at each well location for purging and sampling. Samples will be packaged in 40-mil vials supplied by the laboratory by QEPs and stored on ice pending same day or overnight shipment to a NYS-certified laboratory. The vials will be filled completely and checked to ensure no air bubbles are present. Additional field and laboratory QA/QC protocol is included in the QAPP (Appendix G).

3.3.1.3 Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs in the on-site and off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable. Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Groundwater Monitoring Well Decommissioning Procedures". Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

3.3.2 Soil Vapor Sampling Protocol and QA/QC

Sampling of the nine permanent sub-slab vapor sampling points will be performed approximately one year from the initial sampling that was performed in May 2014. The points were installed just beneath the bottom of the concrete building slab.

The soil vapor points will be sampled in accordance with New York State Department of Health's (NYSDOH) prevailing Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2006. In addition, the soil vapor samples will be chemically analyzed using the procedures and protocols described in the Sampling, Sample Preparation, and Analysis Requirements of EPA Compendium Method T0-15. A three-way "T" connector valve assembly will be connected to a vacuum pump and a pre-cleaned six-liter SUMMA® air sampling canister. Prior to collecting the soil vapor samples, the sample tubing will be purged using a vacuum pump set at a rate of approximately 0.2 liters per minute. A helium tracer gas will be used to enrich the atmosphere around the sampling location. The tracer gas verifies that interior ambient air is not inadvertently drawn down into the soil vapor sample. Both the purge volume from the sampling tube and the helium-enriched air within the container will be screened for the tracer gas using a Gowmac® Model 21-250 gas leak detector.

Following the purging and tracer gas verification steps, the soil vapor samples will be collected using the SUMMA® canister set to fill at a rate of not more than 0.2 liters per minute with an approximate fill time of 24-hours. The samples will analyzed for VOCs using USEPA Method T0-15 by a NYS-certified laboratory. One field duplicate will also be collected for QA/QC purposes.

3.4 SITE-WIDE INSPECTION

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During these inspections, an inspection form will be completed (Appendix I). 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 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;
- Compliance with permits and schedules included in the Operation and Maintenance Plan; and,
- Confirm that site records are up to date.

3.5 MONITORING QUALITY ASSURANCE/QUALITY CONTROL

All sampling and analyses will be performed in accordance with the requirements of the Quality Assurance Project Plan (QAPP) prepared for the Site (Appendix G). Main Components of the QAPP include:

- QA/QC Objectives for Data Measurement;
- Sampling Program:

- Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
- Sample holding times will be in accordance with the NYSDEC ASP requirements.
- Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.

- Sample Tracking and Custody;
- Calibration Procedures:
  - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
  - The laboratory will follow 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;

- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including 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.
- Internal QC and Checks;
- QA Performance and System Audits;
- Preventative Maintenance Procedures and Schedules;
- Corrective Action Measures.

3.6 MONITORING REPORTING REQUIREMENTS

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-site. 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.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. A letter report will also be prepared and submitted within 15 days of receipt of validated data after each sampling event. The report will include, at a minimum:

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and,
- A determination as to whether groundwater conditions have changed since the last reporting event.

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in Table 4 below.

Table 4: Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Periodic Review Report	Annually beginning 18 months after receipt of COC until termination of Environmental Easement or termination of requirement by NYSDEC
Groundwater Sampling Report	Quarterly, following each groundwater sampling event.

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC

4.0 OPERATION AND MAINTENANCE PLAN

4.1 INTRODUCTION

This Operation and Maintenance Plan describes the measures necessary to operate, monitor and maintain the mechanical components of the remedy selected for the Site. This Operation and Maintenance Plan:

- Includes the steps necessary to allow individuals unfamiliar with the Site to operate and maintain the SSDS;
- Includes an operation and maintenance contingency plan; and,
- Will be updated periodically to reflect changes in Site conditions or the manner in which the SSDS are operated and maintained.

Information on non-mechanical Engineering Controls (i.e., composite cover system) is provided in Section 3 - Engineering and Institutional Control Plan. A copy of this Operation and Maintenance Plan, along with the complete SMP, will be kept at the Site and will be located in the on-site maintenance room and/or the building management's office. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of the SMP.

4.2 ENGINEERING CONTROL SYSTEM OPERATION AND MAINTENANCE

4.2.1 Sub-Slab Depressurization System

4.2.1.1 Scope

As an additional measure to prevent vapor-phase VOCs remaining in groundwater from entering the new building's interior, installation of an SSDS was included in the construction of the new buildings' foundation. The sub-slab piping for the SSDS was installed from April through July 2013.

The SSDS passively maintains a vacuum underneath the slab while allowing the vapors below the concrete slab to vent outdoors without intruding into the building. The SSDS consists of horizontal trenches filled with perforated pipe. The horizontal pipes are connected to vertical risers that are connected to four-inch headers that extend above the roof of the building. Based on the findings from the post-remedial sub-slab vapor sampling (Table 8) it was determined by the NYSDEC and NYSDOH that the SSDS may remain passive. As-built drawings for the SSDS are illustrated on Figures 10a, 10b, and 10c.

4.2.1.2 System Start-Up and Testing

As the SSDS is passive there will be no system start up or testing.

4.2.1.3 System Operation: Routine Operation Procedures

The SSDS will be monitored in accordance with Table 3 by a QEP or Professional Engineer. Monitoring of the SSDS will consist of a visual inspection of the complete system to identify and repair leaks (if any). In addition, the building floor will be inspected for wear-related cracks or pitting and repaired as needed.

4.2.1.4 System Operation: Routine Equipment Maintenance

As the SSDS is passive there is no manufacturers' required maintenance. However, any maintenance will be performed during the inspection/monitoring event as shown in the schedule on Table 3.

4.2.1.5 System Operation: Non-Routine Equipment Maintenance

Any non-routine equipment maintenance shall be performed in accordance with the equipment's owner's manual.

4.2.2 In-Situ Chemical Oxidation and Groundwater Monitoring Wells

4.2.2.1 Scope

Based upon the detection and distribution of groundwater contaminants, treatment including in-situ chemical oxidation and natural attenuation was performed in the northern portion of the Site. From June 29 through July 6, 2012 Regenox™ (ISCO treatment) was injected into the shallow groundwater.. The objective of this injection was to directly oxidize the residual organic chemicals within the shallow groundwater underlying the Site. The location of the injections is illustrated on Figure 8.

This treatment constituted a one-time injection via temporary injection points utilizing direct-push drilling. As such, no system operation or maintenance is required. However, after Regenox™ was injected into the overburden, groundwater monitoring occurred after the initial injection, 24-hours later, and weekly for the first month. Monitoring consisted of obtaining field readings for pH, Dissolved Oxygen (DO), Oxidation/Reduction Potential (ORP), temperature, and conductivity from the downgradient monitoring wells. Procedures for the maintenance of the monitoring well network and the quarterly monitoring are outlined in the Monitoring Plan (Section 3 of this SMP).

4.2.2.2 System Start-Up and Testing

As the in-situ-chemical oxidation is not a mechanical system, no start-up testing was required.

4.2.2.3 System Operation: Routine Operation Procedures

As the in-situ-chemical oxidation is not a mechanical system, there are no routine operating procedure requirements**.**

4.2.2.4 System Operation: Routine Equipment Maintenance

As there are no mechanical components of the in-situ-chemical oxidation – periodic maintenance is not warranted.

4.2.2.5 System Operation: Non-Routine Equipment Maintenance

As the in-situ-chemical oxidation is not a mechanical system, there are no equipment maintenance requirements. In the event the initial chemical oxidation injection does not reduce the concentrations of VOCs in the overburden water in the on-site wells to or close to the NYSDEC TOGS groundwater standards or guidance values for class GA after one year of post remedial monitoring, a contingent remedy will be developed.

This treatment constitutes a one-time injection via temporary injection points utilizing direct-push drilling. As such, no system operation or maintenance is required. Groundwater monitoring activities to assess the effectiveness of the ISCO injections will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. System monitoring will include quarterly groundwater monitoring utilizing four newly-installed monitoring wells. The first round

of post remedial monitoring was performed in July 2014 and results are summarized on Table 14 and shown on Figure 12. See Figure 5 and Tables 9-13 for baseline results

4.3 ENGINEERING CONTROL SYSTEM PERFORMANCE MONITORING

4.3.1 SSDS Monitoring

A SSDS has been installed to mitigate possible soil vapor intrusion into occupied buildings.

4.3.1.1 Monitoring Schedule

The operations and maintenance schedule for the SSDS has been established and is included in Table 3. The inspection frequency is subject to change with the approval of the NYSDEC. Monitoring deliverables for the SSDS are specified in Sections 4.4, 5.1, and 5.3 of this Plan.

4.3.1.2 General Equipment Monitoring

A visual inspection of the complete system will be conducted during the monitoring event. SSDS components to be monitored include the general above-ground system piping, where accessible.

4.3.2 In-Situ Chemical Oxidation Monitoring

Based upon the detection and distribution of groundwater contaminants, groundwater treatment including in-situ chemical oxidation was conducted at the Site. In-situ chemical oxidation monitoring included the collection and analysis of groundwater samples from the newly-installed network of four groundwater monitoring wells. The location of the wells is illustrated on Figure 12 and well construction details and boring logs are included in Appendix F.

4.3.2.1 Monitoring Schedule

System monitoring will include quarterly groundwater monitoring for 24 months. Future monitoring frequency will be submitted for approval in the first Periodic Review Report. The inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections and/or sampling may take place when a suspected failure of the monitoring well network has been reported. Monitoring deliverables for the monitoring well network are specified in Sections 4.4 , 5.1 and 5.3 of this Plan.

4.3.2.2 General Equipment Monitoring

A visual inspection of the monitoring well network will be conducted during each monitoring event. Procedures for the maintenance of the monitoring well network and the quarterly monitoring are outlined in the Monitoring Plan (Section 3 of this SMP).

4.3.2.3 Sampling Event Protocol

Prior to sampling, a depth-to-water and depth to bottom measurements will be taken and recorded using a clean electronic water-level measurement device. Purging/sampling will be performed in accordance with EPA's Low-Flow (minimal drawdown) Groundwater Sampling Procedures. Purging and sampling will be performed using a low-flow sampling pump at a pumping rate no greater than 0.5 liters per min (LPM). Water levels

within the well will be monitored using an electronic water level indicator and a pumping rate will be maintained to limit drawdown to less than 0.33 feet if possible. In-line water quality field parameters will be measured at a frequency no less than every five minutes. Purging will continue until the readings of pH, temperature, conductivity, ORP, and DO have stabilized (i.e. three successive readings within approximately 0.1 for pH, 3% for conductivity, 10mv for ORP, and 10% for DO). Purge water will be contained in 55-gallon drums and disposed of in accordance with applicable regulations.

After purging is complete, a sample of the groundwater will be collected at the established low-flow pumping rate directly from the pump discharge into laboratory-issued containers by a QEP. The samples will be placed in a cooler on ice and sent to an ELAP and CLP certified laboratory via overnight delivery for analysis as specified in Section 3.3.1, above. The following samples will also be collected for QA/QC purposes: trip blank, field blank, duplicate sample, matrix spike, and matrix spike duplicate.

A qualified third-party Data Validator will review the groundwater laboratory data and prepare a DUSR.

4.3.3 System Monitoring Devices and Alarms

As the SSDS is passive there will be no monitoring devices or alarms incorporated into the system.

4.4 MAINTENANCE AND PERFORMANCE MONITORING REPORTING REQUIREMENTS

Maintenance reports and any other information generated during regular operations at the Site will be kept on-file on-site. All reports, forms, and other relevant information generated will be available upon request to the NYSDEC and submitted as part of the Periodic Review Report, as specified in Section 5 of this SMP.

4.4.1 Routine Maintenance Reports

Checklists or forms (see Appendix I) will be completed during each routine maintenance event. Checklists/forms will include, but not be limited to the following information:

- Date;
- Name, company, and position of person(s) conducting maintenance activities;
- Maintenance activities conducted;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and,
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

4.4.2 Non-Routine Maintenance Reports

During each non-routine maintenance event, a form will be completed which will include, but not be limited to, the following information:

- Date;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Presence of leaks;
- Date of leak repair;
- Other repairs or adjustments made to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and,
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

5.0 INSPECTIONS, REPORTING AND CERTIFICATIONS

5.1 SITE INSPECTIONS

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan and Section 4 Operation and Maintenance Plan of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted when a breakdown of any treatment system component has occurred or whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms for their respective system. Additionally, a general site-wide inspection form will be completed during the site-wide inspection (see Appendix I). These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the Site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 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;
- Operation and maintenance activities are being conducted properly; and, based on the above items,
- The Site remedy continues to be protective of public health and the environment and is performing as designed in the RAWP and FER.

5.2 CERTIFICATION OF ENGINEERING AND INSTITUTIONAL CONTROLS

After the last inspection of the reporting period, a Professional Engineer licensed to practice in New York State or a QEP as per sections 1.5 and 6.3 of NYSDEC DER-10 will prepare the following certification:

For each institutional or engineering control identified for the Site, I certify that all of the following statements are true:

- The inspection of the Site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering control employed at this Site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;
- Access to the Site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;
- If a financial assurance mechanism is required under the oversight document for the Site, the mechanism remains valid and sufficient for the intended purpose under the document;
- Use of the Site is compliant with the environmental easement;
- The engineering control systems are performing as designed and are effective;
- To the best of my 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,
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as Owner's Designated Site Representative: I have been authorized and designated by all site owners to sign this certification for the Site.

- No new information has come to my attention, including groundwater monitoring data from wells located at the site boundary, if any, to indicate that the assumptions made in the qualitative exposure assessment of off-site contamination are no longer valid; and

Every five years the following certification will be added:

- The assumptions made in the qualitative exposure assessment remain valid.

The signed certification will be included in the Periodic Review Report described below.

5.3 PERIODIC REVIEW REPORT

A Periodic Review Report will be submitted to the Department every year, beginning eighteen months after the Certificate of Completion is issued. 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 described in Appendix C (Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period. Media sampling results will also incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site;
- Results of the required annual Site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the Site during the reporting period in electronic format;
- A summary of any discharge monitoring data and/or information generated during the reporting period with comments and conclusions;
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of all compounds

analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;

- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;
- A Site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
    - The operation and the effectiveness of all treatment units, etc., 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 for the media being monitored;
    - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and ,
    - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted, in hard-copy format, to the NYSDEC Regional Office in which the Site is located, and in electronic format to NYSDEC Regional Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 CORRECTIVE MEASURES PLAN

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, 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.

TABLES

Table 1
Track 4 Site Specific Soil Cleanup Objectives (SSSCOs)
Lebanon West Farms I and II
1160 Lebanon Street, 1172 and 1175 East Tremont Avenue
Bronx, New York

Compound/Constituent	Track 4 SSSCOs
VOCs	Restricted Residential SCOs
SVOCs	Commercial SCOs
Pesticides	Restricted Residential SCOs
PCBs	Restricted Residential SCOs
Metals	Commercial SCOs

Notes:

VOC = volatile organic compound
SVOC = semi-volatile organic compound
PCBs = Polychlorinated Biphenyls

TABLE 2
SUMMARY OF MATERIAL DISPOSAL
Lebanon West Farms
1160 Lebanon Street, and 1172 and 1175 East Tremont Avenue
Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
1	10/08/12	179797	TP-1	Clean Earth of Carteret in Carteret, New Jersey	32.17	32.17
2	10/08/12	179801	TP-1	Clean Earth of Carteret in Carteret, New Jersey	32.48	64.65
3	10/08/12	179802	TP-1	Clean Earth of Carteret in Carteret, New Jersey	30.03	94.68
4	10/08/12	766363	TP-1	Clean Earth of Carteret in Carteret, New Jersey	33.21	127.89
5	10/08/12	766357	TP-1	Clean Earth of Carteret in Carteret, New Jersey	31.61	159.50
6	10/08/12	766358	TP-1	Clean Earth of Carteret in Carteret, New Jersey	32.44	191.94
7	10/08/12	765562	TP-1	Clean Earth of Carteret in Carteret, New Jersey	32.73	224.67
8	10/08/12	765318	TP-1	Clean Earth of Carteret in Carteret, New Jersey	29.13	253.80
9	10/08/12	765314	TP-1	Clean Earth of Carteret in Carteret, New Jersey	32.08	285.88
10	10/08/12	765320	TP-1	Clean Earth of Carteret in Carteret, New Jersey	32.03	317.91
11	10/08/12	765317	TP-1	Clean Earth of Carteret in Carteret, New Jersey	27.44	345.35
12	10/08/12	765319	TP-1	Clean Earth of Carteret in Carteret, New Jersey	32.06	377.41
13	10/08/12	765563	TP-1	Clean Earth of Carteret in Carteret, New Jersey	31.17	408.58
14	10/08/12	765561	TP-1	Clean Earth of Carteret in Carteret, New Jersey	31.22	439.80
15	10/08/12	765564	TP-1	Clean Earth of Carteret in Carteret, New Jersey	34.78	474.58
16	10/08/12	765321	TP-1	Clean Earth of Carteret in Carteret, New Jersey	32.52	507.10
17	10/08/12	179800	TP-1	Clean Earth of Carteret in Carteret, New Jersey	30.49	537.59
18	10/08/12	765313	TP-1	Clean Earth of Carteret in Carteret, New Jersey	30.78	568.37
19	10/08/12	765565	TP-1	Clean Earth of Carteret in Carteret, New Jersey	32.46	600.83
20	10/08/12	765316	TP-1	Clean Earth of Carteret in Carteret, New Jersey	31.57	632.40
21	10/09/12	001	TP-2	Soil Safe in Logan Township, NJ	33.44	665.84
22	10/09/12	002	TP-2	Soil Safe in Logan Township, N.	30.32	696.16
23	10/09/12	003	TP-2	Soil Safe in Logan Township, NJ	31.57	727.73
24	10/09/12	005	TP-2	Soil Safe in Logan Township, NJ	28.69	756.42
25	10/09/12	004	TP-2	Soil Safe in Logan Township, NJ	31.14	787.56
26	10/09/12	006	TP-2	Soil Safe in Logan Township, NJ	30.53	818.09
27	10/09/12	007	TP-2	Soil Safe in Logan Township, NJ	32.56	850.65
28	10/09/12	008	TP-2	Soil Safe in Logan Township, NJ	40.65	891.30
29	10/09/12	010	TP-2	Soil Safe in Logan Township, NJ	32.29	923.59
30	10/09/12	009	TP-2	Soil Safe in Logan Township, NJ	33.51	957.10
31	10/09/12	011	TP-2	Soil Safe in Logan Township, NJ	34.27	991.37
32	10/09/12	012	TP-2	Soil Safe in Logan Township, NJ	34.85	1,026.22
33	10/09/12	013	TP-2	Soil Safe in Logan Township, NJ	32.61	1,058.83
34	10/10/12	001	TP-2	Soil Safe in Logan Township, NJ	31.36	1,090.19
35	10/10/12	002	TP-2	Soil Safe in Logan Township, NJ	30.44	1,120.63
36	10/10/12	004	TP-2	Soil Safe in Logan Township, NJ	38.87	1,159.50
37	10/10/12	003	TP-2	Soil Safe in Logan Township, NJ	34.47	1,193.97
38	10/15/12	76770	TP-4	Clean Earth of Carteret in Carteret, New Jersey	32.76	1,226.73
39	10/15/12	767776	TP-4	Clean Earth of Carteret in Carteret, New Jersey	34.59	1,261.32
40	10/15/12	767774	TP-4	Clean Earth of Carteret in Carteret, New Jersey	32.78	1,294.10
41	10/15/12	630522	TP-4	Clean Earth of Carteret in Carteret, New Jersey	33.78	1,327.88
42	10/15/12	767772	TP-4	Clean Earth of Carteret in Carteret, New Jersey	31.71	1,359.59
43	10/15/12	767771	TP-4	Clean Earth of Carteret in Carteret, New Jersey	31.27	1,390.86
44	10/15/12	767777	TP-4	Clean Earth of Carteret in Carteret, New Jersey	36.11	1,426.97
45	10/15/12	767773	TP-4	Clean Earth of Carteret in Carteret, New Jersey	32.05	1,459.02
46	10/15/12	767775	TP-4	Clean Earth of Carteret in Carteret, New Jersey	32.92	1,491.94
47	10/15/12	492207	TP-4	Clean Earth of Carteret in Carteret, New Jersey	31.79	1,523.73
48	10/15/12	492206	TP-4	Clean Earth of Carteret in Carteret, New Jersey	34.53	1,558.26
49	10/15/12	766504	TP-4	Clean Earth of Carteret in Carteret, New Jersey	33.32	1,591.58
50	10/15/12	014	TP-2	Soil Safe in Logan Township, NJ	28.22	1,619.80
51	10/15/12	001	TP-3	Soil Safe in Logan Township, NJ	30.43	1,650.23
52	10/15/12	002	TP-3	Soil Safe in Logan Township, NJ	32.22	1,682.45
53	10/15/12	003	TP-3	Soil Safe in Logan Township, NJ	29.80	1,712.25
54	10/15/12	005	TP-3	Soil Safe in Logan Township, NJ	31.76	1,744.01
55	10/15/12	004	TP-3	Soil Safe in Logan Township, NJ	31.84	1,775.85
56	10/15/12	006	TP-3	Soil Safe in Logan Township, NJ	32.57	1,808.42
57	10/15/12	007	TP-3	Soil Safe in Logan Township, NJ	30.69	1,839.11
58	10/15/12	008	TP-3	Soil Safe in Logan Township, NJ	31.42	1,870.53
59	10/15/12	009	TP-3	Soil Safe in Logan Township, NJ	33.87	1,904.40
60	10/15/12	010	TP-3	Soil Safe in Logan Township, NJ	34.68	1,939.08
61	10/15/12	011	TP-3	Soil Safe in Logan Township, NJ	31.52	1,970.60
62	10/15/12	012	TP-3	Soil Safe in Logan Township, NJ	32.76	2,003.36
63	11/27/12	002	TP-6	Soil Safe in Logan Township, NJ	30.14	2,033.50
64	11/27/12	001	TP-6	Soil Safe in Logan Township, NJ	30.33	2,063.83
65	11/27/12	003	TP-6	Soil Safe in Logan Township, NJ	30.20	2,094.03
66	11/27/12	004	TP-6	Soil Safe in Logan Township, NJ	29.73	2,123.76
67	11/27/12	005	TP-6	Soil Safe in Logan Township, NJ	28.50	2,152.26
68	11/27/12	006	TP-6	Soil Safe in Logan Township, NJ	33.37	2,185.63
69	11/27/12	007	TP-6	Soil Safe in Logan Township, NJ	31.93	2,217.56
70	11/28/12	001	TP-6	Soil Safe in Logan Township, NJ	32.45	2,250.01
71	11/28/12	002	TP-6	Soil Safe in Logan Township, NJ	32.73	2,282.74
72	11/28/12	003	TP-6	Soil Safe in Logan Township, NJ	32.51	2,315.25
73	11/28/12	005	TP-6	Soil Safe in Logan Township, NJ	29.39	2,344.64
74	11/28/12	004	TP-6	Soil Safe in Logan Township, NJ	32.12	2,376.76
75	11/28/12	006	TP-6	Soil Safe in Logan Township, NJ	31.65	2,408.41
76	11/28/12	007	TP-6	Soil Safe in Logan Township, NJ	31.04	2,439.45
77	11/28/12	008	TP-6	Soil Safe in Logan Township, NJ	27.94	2,467.39
78	11/28/12	010	TP-6	Soil Safe in Logan Township, NJ	30.69	2,498.08
79	11/28/12	011	TP-6	Soil Safe in Logan Township, NJ	28.87	2,526.95
80	11/28/12	009	TP-6	Soil Safe in Logan Township, NJ	31.79	2,558.74
81	11/28/12	012	TP-6	Soil Safe in Logan Township, NJ	35.42	2,594.16
82	11/28/12	771189	TP-5	Clean Earth of Carteret in Carteret, New Jersey	28.20	2,622.36
83	11/28/12	771149	TP-5	Clean Earth of Carteret in Carteret, New Jersey	27.83	2,650.19

Lebanon West Farms

1160 Lebanon Street, and 1172 and 1175 East Tremont Avenue

Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
84	11/28/12	771213	TP-5	Clean Earth of Carteret in Carteret, New Jersey	29.89	2,680.08
85	11/28/12	771217	TP-5	Clean Earth of Carteret in Carteret, New Jersey	29.02	2,709.10
86	11/28/12	771216	TP-5	Clean Earth of Carteret in Carteret, New Jersey	30.99	2,740.09
87	11/28/12	771197	TP-5	Clean Earth of Carteret in Carteret, New Jersey	33.96	2,774.05
88	11/28/12	771195	TP-5	Clean Earth of Carteret in Carteret, New Jersey	32.70	2,806.75
89	11/28/12	771211	TP-5	Clean Earth of Carteret in Carteret, New Jersey	31.93	2,838.68
90	11/28/12	771203	TP-5	Clean Earth of Carteret in Carteret, New Jersey	33.86	2,872.54
91	11/28/12	771204	TP-5	Clean Earth of Carteret in Carteret, New Jersey	34.01	2,906.55
92	11/28/12	771206	TP-5	Clean Earth of Carteret in Carteret, New Jersey	26.92	2,933.47
93	11/28/12	771205	TP-5	Clean Earth of Carteret in Carteret, New Jersey	31.42	2,964.89
94	11/28/12	771187	TP-5	Clean Earth of Carteret in Carteret, New Jersey	35.77	3,000.66
95	11/28/12	771150	TP-5	Clean Earth of Carteret in Carteret, New Jersey	34.29	3,034.95
96	11/28/12	771214	TP-5	Clean Earth of Carteret in Carteret, New Jersey	36.00	3,070.95
97	11/28/12	771218	TP-5	Clean Earth of Carteret in Carteret, New Jersey	37.06	3,108.01
98	11/28/12	771207	TP-5	Clean Earth of Carteret in Carteret, New Jersey	30.56	3,138.57
99	11/28/12	771199	TP-5	Clean Earth of Carteret in Carteret, New Jersey	34.59	3,173.16
100	11/28/12	771210	TP-5	Clean Earth of Carteret in Carteret, New Jersey	34.77	3,207.93
101	11/28/12	771190	TP-5	Clean Earth of Carteret in Carteret, New Jersey	30.57	3,238.50
102	11/28/12	771184	TP-5	Clean Earth of Carteret in Carteret, New Jersey	29.41	3,267.91
103	11/28/12	769670	TP-5	Clean Earth of Carteret in Carteret, New Jersey	29.50	3,297.41
104	11/28/12	766360	TP-5	Clean Earth of Carteret in Carteret, New Jersey	30.57	3,327.98
105	11/28/12	771212	TP-5	Clean Earth of Carteret in Carteret, New Jersey	38.13	3,366.11
106	11/28/12	771188	TP-5	Clean Earth of Carteret in Carteret, New Jersey	38.04	3,404.15
107	11/28/12	771151	TP-5	Clean Earth of Carteret in Carteret, New Jersey	32.73	3,436.88
108	11/28/12	771208	TP-5	Clean Earth of Carteret in Carteret, New Jersey	35.21	3,472.09
109	11/28/12	771196	TP-5	Clean Earth of Carteret in Carteret, New Jersey	32.01	3,504.10
110	11/28/12	771209	TP-5	Clean Earth of Carteret in Carteret, New Jersey	35.21	3,539.31
111	11/28/12	771192	TP-5	Clean Earth of Carteret in Carteret, New Jersey	34.57	3,573.88
112	11/28/12	771194	TP-5	Clean Earth of Carteret in Carteret, New Jersey	30.25	3,604.13
113	11/28/12	771186	TP-5	Clean Earth of Carteret in Carteret, New Jersey	33.91	3,638.04
114	11/28/12	769671	TP-5	Clean Earth of Carteret in Carteret, New Jersey	32.48	3,670.52
115	02/06/13	04090	TP-3	Soil Safe in Logan Township, NJ	29.47	3,699.99
116	02/06/13	755333	TP-4	Clean Earth of Carteret in Carteret, New Jersey	29.18	3,729.17
117	02/06/13	755084	TP-4	Clean Earth of Carteret in Carteret, New Jersey	30.49	3,759.66
118	02/19/13	635006	TP-2	Clean Earth of Carteret in Carteret, New Jersey	40.48	3,800.14
119	2/20/13		TP-2	Soil Safe in Logan Township, NJ	36.67	3,836.81
120	2/20/13		TP-2	Soil Safe in Logan Township, NJ	40.29	3,877.10
121	2/20/13		TP-2	Soil Safe in Logan Township, NJ	33.64	3,910.74
122	2/20/13		TP-2	Soil Safe in Logan Township, NJ	36.01	3,946.75
123	2/20/13		TP-2	Soil Safe in Logan Township, NJ	36.59	3,983.34
124	2/20/13		TP-2	Soil Safe in Logan Township, NJ	40.39	4,023.73
125	2/20/13		TP-2	Soil Safe in Logan Township, NJ	37.23	4,060.96
126	2/20/13		TP-2	Soil Safe in Logan Township, NJ	37.57	4,098.53
127	2/20/13		TP-2	Soil Safe in Logan Township, NJ	32.87	4,131.40
128	2/20/13	14	TP-2	Soil Safe in Logan Township, NJ	32.16	4,163.56
129	2/20/13	124	TP-2	Soil Safe in Logan Township, NJ	37.25	4,200.81
130	2/20/13	125	TP-2	Soil Safe in Logan Township, NJ	31.36	4,232.17
131	2/20/13	126	TP-2	Soil Safe in Logan Township, NJ	31.70	4,263.87
132	2/20/13	127	TP-2	Soil Safe in Logan Township, NJ	30.15	4,294.02
133	2/20/13	128	TP-2	Soil Safe in Logan Township, NJ	32.92	4,326.94
134	2/20/13	129	TP-2	Soil Safe in Logan Township, NJ	38.02	4,364.96
135	2/20/13	129	TP-2	Soil Safe in Logan Township, NJ	33.25	4,398.21
136	2/20/13	131	TP-2	Soil Safe in Logan Township, NJ	35.19	4,433.40
137	2/20/13	132	TP-2	Soil Safe in Logan Township, NJ	37.21	4,470.61
138	2/20/13	133	TP-2	Soil Safe in Logan Township, NJ	37.70	4,508.31
139	2/20/13	134	TP-2	Soil Safe in Logan Township, NJ	38.75	4,547.06
140	2/20/13	138	TP-2	Soil Safe in Logan Township, NJ	38.75	4,585.81
141	2/20/13	144	TP-2	Soil Safe in Logan Township, NJ	35.20	4,621.01
142	2/20/13	147	TP-2	Soil Safe in Logan Township, NJ	30.17	4,651.18
143	2/20/13	148	TP-2	Soil Safe in Logan Township, NJ	30.87	4,682.05
144	2/20/13	149	TP-2	Soil Safe in Logan Township, NJ	24.94	4,706.99
145	2/20/13	766511	TP-2	Clean Earth of Carteret in Carteret, New Jersey	35.67	4,742.66
146	2/20/13	766273	TP-2	Clean Earth of Carteret in Carteret, New Jersey	38.53	4,781.19
147	2/20/13	565005	TP-2	Clean Earth of Carteret in Carteret, New Jersey	36.58	4,817.77
148	2/20/13	766621	TP-2	Clean Earth of Carteret in Carteret, New Jersey	35.63	4,853.40
149	2/20/13	542759	TP-2	Clean Earth of Carteret in Carteret, New Jersey	34.78	4,888.18
150	2/20/13	638521	TP-2	Clean Earth of Carteret in Carteret, New Jersey	35.85	4,924.03
151	2/20/13	638520	TP-2	Clean Earth of Carteret in Carteret, New Jersey	35.27	4,959.30
152	02/21/13	744858	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	34.39	4,993.69
153	02/21/13	744874	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	34.16	5,027.85
154	02/21/13	744864	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	31.56	5,059.41
155	02/21/13	744856	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	30.79	5,090.20
156	02/21/13	744875	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	34.64	5,124.84
157	02/21/13	744870	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	34.01	5,158.85
158	02/21/13	744873	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	35.19	5,194.04
159	02/21/13	744849	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	29.88	5,223.92
160	02/21/13	744857	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	28.42	5,252.34
161	02/21/13	744854	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	31.72	5,284.06
162	02/21/13	744885	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	32.09	5,316.15
163	02/21/13	744887	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	27.71	5,343.86
164	02/21/13	744886	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	28.55	5,372.41
165	02/21/13	744884	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	31.16	5,403.57
166	02/21/13	744863	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	32.77	5,436.34
167	02/21/13	744862	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	35.84	5,472.18
168	02/21/13	744877	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	35.27	5,507.45

Lebanon West Farms

1160 Lebanon Street, and 1172 and 1175 East Tremont Avenue

Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
169	02/21/13	744861	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	35.26	5,542.71
170	02/21/13	744882	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	34.51	5,577.22
171	02/21/13	744871	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	34.96	5,612.18
172	02/21/13	744869	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	34.05	5,646.23
173	02/21/13	744883	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	32.62	5,678.85
174	02/21/13	744867	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	37.46	5,716.31
175	02/21/13	744850	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	34.68	5,750.99
176	02/21/13	744852	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	34.69	5,785.68
177	02/21/13	744855	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	35.66	5,821.34
178	02/21/13	744859	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	37.32	5,858.66
179	02/21/13	744876	TP-1	Teterboro Landing Development Project in Teterboro, New Jersey	35.99	5,894.65
180	04/05/13	001	TP-7	Soil Safe in Logan Township, NJ	35.13	5,929.78
181	04/05/13	002	TP-7	Soil Safe in Logan Township, NJ	31.48	5,961.26
182	04/05/13	003	TP-7	Soil Safe in Logan Township, NJ	35.16	5,996.42
183	04/05/13	004	TP-7	Soil Safe in Logan Township, NJ	34.82	6,031.24
184	04/05/13	005	TP-7	Soil Safe in Logan Township, NJ	33.38	6,064.62
185	04/05/13	006	TP-7	Soil Safe in Logan Township, NJ	33.96	6,098.58
186	04/05/13	007	TP-7	Soil Safe in Logan Township, NJ	34.41	6,132.99
187	04/05/13	008	TP-7	Soil Safe in Logan Township, NJ	33.29	6,166.28
188	04/05/13	009	TP-7	Soil Safe in Logan Township, NJ	31.00	6,197.28
189	04/05/13	010	TP-7	Soil Safe in Logan Township, NJ	35.21	6,232.49
190	04/05/13	011	TP-7	Soil Safe in Logan Township, NJ	33.09	6,265.58
191	04/05/13	012	TP-7	Soil Safe in Logan Township, NJ	34.38	6,299.96
192	04/05/13	013	TP-7	Soil Safe in Logan Township, NJ	33.72	6,333.68
193	04/05/13	014	TP-7	Soil Safe in Logan Township, NJ	32.38	6,366.06
194	04/05/13	015	TP-7	Soil Safe in Logan Township, NJ	35.68	6,401.74
195	04/05/13	016	TP-7	Soil Safe in Logan Township, NJ	32.57	6,434.31
196	04/08/13	001	TP-7	Soil Safe in Logan Township, NJ	32.08	6,466.39
197	04/08/13	002	TP-7	Soil Safe in Logan Township, NJ	33.83	6,500.22
198	04/08/13	003	TP-7	Soil Safe in Logan Township, NJ	31.49	6,531.71
199	04/08/13	004	TP-7	Soil Safe in Logan Township, NJ	31.42	6,563.13
200	04/08/13	005	TP-7	Soil Safe in Logan Township, NJ	33.63	6,596.76
201	04/08/13	006	TP-7	Soil Safe in Logan Township, NJ	33.27	6,630.03
202	04/08/13	007	TP-8	Soil Safe in Logan Township, NJ	33.51	6,663.54
203	04/08/13	008	TP-8	Soil Safe in Logan Township, NJ	32.06	6,695.60
204	04/08/13	009	TP-8	Soil Safe in Logan Township, NJ	34.72	6,730.32
205	04/08/13	010	TP-8	Soil Safe in Logan Township, NJ	35.56	6,765.88
206	04/08/13	011	TP-8	Soil Safe in Logan Township, NJ	35.64	6,801.52
207	04/08/13	012	TP-8	Soil Safe in Logan Township, NJ	35.55	6,837.07
208	04/08/13	013	TP-8	Soil Safe in Logan Township, NJ	36.73	6,873.80
209	04/08/13	014	TP-8	Soil Safe in Logan Township, NJ	34.86	6,908.66
210	04/08/13	015	TP-8	Soil Safe in Logan Township, NJ	35.98	6,944.64
211	04/08/13	016	TP-8	Soil Safe in Logan Township, NJ	31.41	6,976.05
212	04/08/13	017	TP-7	Soil Safe in Logan Township, NJ	30.67	7,006.72
213	04/08/13	018	TP-7	Soil Safe in Logan Township, NJ	30.70	7,037.42
214	04/08/13	019	TP-8	Soil Safe in Logan Township, NJ	32.93	7,070.35
215	04/08/13	020	TP-8	Soil Safe in Logan Township, NJ	31.19	7,101.54
216	04/08/13	021	TP-8	Soil Safe in Logan Township, NJ	32.59	7,134.13
217	04/08/13	022	TP-8	Soil Safe in Logan Township, NJ	31.79	7,165.92
218	04/08/13	023	TP-8	Soil Safe in Logan Township, NJ	36.38	7,202.30
219	04/10/13	001	TP-8	Soil Safe in Logan Township, NJ	33.19	7,235.49
220	04/10/13	002	TP-8	Soil Safe in Logan Township, NJ	32.56	7,268.05
221	04/10/13	003	TP-8	Soil Safe in Logan Township, NJ	30.42	7,298.47
222	04/10/13	004	TP-8	Soil Safe in Logan Township, NJ	43.29	7,341.76
223	04/10/13	005	TP-8	Soil Safe in Logan Township, NJ	34.97	7,376.73
224	04/10/13	006	TP-7	Soil Safe in Logan Township, NJ	29.27	7,406.00
225	04/10/13	007	TP-8	Soil Safe in Logan Township, NJ	33.71	7,439.71
226	04/10/13	008	TP-7	Soil Safe in Logan Township, NJ	27.47	7,467.18
227	04/10/13	009	TP-7	Soil Safe in Logan Township, NJ	33.91	7,501.09
228	04/10/13	010	TP-8	Soil Safe in Logan Township, NJ	35.85	7,536.94
229	04/10/13	011	TP-7	Soil Safe in Logan Township, NJ	36.42	7,573.36
230	04/10/13	012	TP-7	Soil Safe in Logan Township, NJ	32.33	7,605.69
231	04/10/13	013	TP-7	Soil Safe in Logan Township, NJ	28.02	7,633.71
232	04/10/13	014	TP-7	Soil Safe in Logan Township, NJ	35.63	7,669.34
233	04/10/13	015	TP-8	Soil Safe in Logan Township, NJ	35.54	7,704.88
234	04/10/13	016	TP-7	Soil Safe in Logan Township, NJ	32.65	7,737.53
235	04/10/13	017	TP-7	Soil Safe in Logan Township, NJ	33.55	7,771.08
236	04/10/13	018	TP-7	Soil Safe in Logan Township, NJ	33.32	7,804.40
237	04/10/13	019	TP-7	Soil Safe in Logan Township, NJ	32.61	7,837.01
238	04/10/13	020	TP-7	Soil Safe in Logan Township, NJ	28.43	7,865.44
239	04/10/13	021	TP-7	Soil Safe in Logan Township, NJ	33.44	7,898.88
240	04/10/13	022	TP-7	Soil Safe in Logan Township, NJ	36.22	7,935.10
241	04/12/13	001	TP-7	Soil Safe in Logan Township, NJ	35.56	7,970.66
242	04/12/13	002	TP-7	Soil Safe in Logan Township, NJ	30.96	8,001.62
243	04/12/13	003	TP-8	Soil Safe in Logan Township, NJ	34.40	8,036.02
244	04/12/13	004	TP-8	Soil Safe in Logan Township, NJ	34.84	8,070.86
245	04/12/13	005	TP-8	Soil Safe in Logan Township, NJ	28.55	8,099.41
246	04/12/13	006	TP-7	Soil Safe in Logan Township, NJ	32.58	8,131.99
247	04/12/13	007	TP-7	Soil Safe in Logan Township, NJ	35.83	8,167.82
248	04/12/13	008	TP-7	Soil Safe in Logan Township, NJ	36.33	8,204.15
249	04/12/13	009	TP-7	Soil Safe in Logan Township, NJ	33.71	8,237.86
250	04/12/13	010	TP-7	Soil Safe in Logan Township, NJ	35.39	8,273.25
251	04/12/13	011	TP-8	Soil Safe in Logan Township, NJ	33.12	8,306.37
252	04/12/13	012	TP-7	Soil Safe in Logan Township, NJ	35.73	8,342.10
253	04/12/13	013	TP-8	Soil Safe in Logan Township, NJ	37.00	8,379.10

Lebanon West Farms

1160 Lebanon Street, and 1172 and 1175 East Tremont Avenue

Bronx, New York

Truck#	Date	Manifest #	Test Pit(s)	Facility Destination	Weight (TN)	Cumm Qty (TN)
254	04/12/13	014	TP-7	Soil Safe in Logan Township, NJ	36.47	8,415.57
255	04/12/13	015	TP-6	Soil Safe in Logan Township, NJ	31.64	8,447.21
256	04/12/13	016	TP-6	Soil Safe in Logan Township, NJ	31.31	8,478.52
257	04/12/13	017	TP-6	Soil Safe in Logan Township, NJ	30.79	8,509.31
258	04/12/13	018	TP-6	Soil Safe in Logan Township, NJ	34.52	8,543.83
259	04/12/13	019	TP-6	Soil Safe in Logan Township, NJ	38.41	8,582.24
260	04/12/13	020	TP-6	Soil Safe in Logan Township, NJ	34.69	8,616.93
261	04/12/13	021	TP-6	Soil Safe in Logan Township, NJ	36.20	8,653.13
262	04/12/13	022	TP-6	Soil Safe in Logan Township, NJ	33.41	8,686.54
263	04/12/13	023	TP-6	Soil Safe in Logan Township, NJ	35.78	8,722.32
264	04/17/13	766231	TP-6	Clean Earth of Carteret in Carteret, New Jersey	33.96	8,756.28
265	04/17/13	758845	TP-6	Clean Earth of Carteret in Carteret, New Jersey	32.41	8,788.69
266	04/17/13	758835	TP-6	Clean Earth of Carteret in Carteret, New Jersey	36.57	8,825.26
267	04/17/13	758834	TP-6	Clean Earth of Carteret in Carteret, New Jersey	31.65	8,856.91
268	04/17/13	758839	TP-6	Clean Earth of Carteret in Carteret, New Jersey	30.83	8,887.74
269	04/17/13	758833	TP-6	Clean Earth of Carteret in Carteret, New Jersey	32.97	8,920.71
270	04/17/13	758813	TP-6	Clean Earth of Carteret in Carteret, New Jersey	32.52	8,953.23
271	04/17/13	758817	TP-6	Clean Earth of Carteret in Carteret, New Jersey	30.87	8,984.10
272	04/17/13	758814	TP-6	Clean Earth of Carteret in Carteret, New Jersey	29.16	9,013.26
273	04/17/13	758818	TP-6	Clean Earth of Carteret in Carteret, New Jersey	32.49	9,045.75
274	04/17/13	758844	TP-6	Clean Earth of Carteret in Carteret, New Jersey	32.15	9,077.90
275	04/17/13	758819	TP-6	Clean Earth of Carteret in Carteret, New Jersey	35.74	9,113.64
276	04/17/13	758820	TP-6	Clean Earth of Carteret in Carteret, New Jersey	34.84	9,148.48
277	04/17/13	758821	TP-6	Clean Earth of Carteret in Carteret, New Jersey	32.65	9,181.13
278	04/17/13	758816	TP-6	Clean Earth of Carteret in Carteret, New Jersey	27.89	9,209.02
280	04/17/13	758822	TP-6	Clean Earth of Carteret in Carteret, New Jersey	29.85	9,238.87
281	04/17/13	758823	TP-6	Clean Earth of Carteret in Carteret, New Jersey	29.63	9,268.50
282	04/17/13	758824	TP-6	Clean Earth of Carteret in Carteret, New Jersey	34.58	9,303.08
283	04/17/13	758843	TP-6	Clean Earth of Carteret in Carteret, New Jersey	32.61	9,335.69
284	04/17/13	758825	TP-6	Clean Earth of Carteret in Carteret, New Jersey	34.26	9,369.95
285	04/17/13	758826	TP-6	Clean Earth of Carteret in Carteret, New Jersey	30.61	9,400.56
286	04/17/13	758827	TP-6	Clean Earth of Carteret in Carteret, New Jersey	33.21	9,433.77
287	04/17/13	758828	TP-6	Clean Earth of Carteret in Carteret, New Jersey	30.60	9,464.37
288	04/17/13	758815	TP-6	Clean Earth of Carteret in Carteret, New Jersey	31.38	9,495.75
289	04/17/13	758829	TP-6	Clean Earth of Carteret in Carteret, New Jersey	31.29	9,527.04
290	04/17/13	758830	TP-6	Clean Earth of Carteret in Carteret, New Jersey	30.99	9,558.03
291	04/17/13	758840	TP-6	Clean Earth of Carteret in Carteret, New Jersey	29.75	9,587.78
292	04/17/13	758831	TP-6	Clean Earth of Carteret in Carteret, New Jersey	33.17	9,620.95
293	05/02/13	001	TP-8	Soil Safe in Logan Township, NJ	36.98	9,657.93
294	05/02/13	002	TP-2	Soil Safe in Logan Township, NJ	41.79	9,699.72
295	05/02/13	003	TP-7	Soil Safe in Logan Township, NJ	36.99	9,736.71
296	05/02/13	004	TP-8	Soil Safe in Logan Township, NJ	33.78	9,770.49
297	05/02/13	005	TP-8	Soil Safe in Logan Township, NJ	38.77	9,809.26
298	05/02/13	006	TP-8	Soil Safe in Logan Township, NJ	38.22	9,847.48
299	05/02/13	007	TP-8	Soil Safe in Logan Township, NJ	34.21	9,881.69
300	05/02/13	008	TP-10	Soil Safe in Logan Township, NJ	33.02	9,914.71
301	05/02/13	009	TP-8	Soil Safe in Logan Township, NJ	35.98	9,950.69
302	05/02/13	010	TP-10	Soil Safe in Logan Township, NJ	33.20	9,983.89
303	05/02/13	011	TP-10	Soil Safe in Logan Township, NJ	36.54	10,020.43
304	05/02/13	012	TP-7	Soil Safe in Logan Township, NJ	34.42	10,054.85
305	05/02/13	013	TP-8	Soil Safe in Logan Township, NJ	36.05	10,090.90
306	05/02/13	014	TP-8	Soil Safe in Logan Township, NJ	33.96	10,124.86
307	05/02/13	015	TP-10	Soil Safe in Logan Township, NJ	37.67	10,162.53
308	05/02/13	016	TP-10	Soil Safe in Logan Township, NJ	38.18	10,200.71
309	05/03/13	764087	TP-6	Clean Earth of Carteret in Carteret, New Jersey	33.98	10,234.69
310	05/03/13	764086	TP-6	Clean Earth of Carteret in Carteret, New Jersey	36.04	10,270.73
311	05/03/13	764104	TP-6	Clean Earth of Carteret in Carteret, New Jersey	37.72	10,308.45
312	05/03/13	764106	TP-6	Clean Earth of Carteret in Carteret, New Jersey	36.07	10,344.52
313	05/03/13	764103	TP-6	Clean Earth of Carteret in Carteret, New Jersey	37.68	10,382.20
314	05/03/13	764105	TP-6	Clean Earth of Carteret in Carteret, New Jersey	36.17	10,418.37
315	05/03/13	764085	TP-6	Clean Earth of Carteret in Carteret, New Jersey	38.15	10,456.52
316	05/03/13	764098	TP-5	Clean Earth of Carteret in Carteret, New Jersey	34.37	10,490.89
317	05/03/13	764101	TP-5	Clean Earth of Carteret in Carteret, New Jersey	36.31	10,527.20
318	05/03/13	764097	TP-5	Clean Earth of Carteret in Carteret, New Jersey	38.44	10,565.64
319	05/03/13	764100	TP-5	Clean Earth of Carteret in Carteret, New Jersey	39.00	10,604.64
320	05/03/13	764095	TP-6	Clean Earth of Carteret in Carteret, New Jersey	39.51	10,644.15
321	05/03/13	764094	TP-5	Clean Earth of Carteret in Carteret, New Jersey	34.66	10,678.81
322	05/03/13	764102	TP-5	Clean Earth of Carteret in Carteret, New Jersey	38.96	10,717.77
323	05/03/13	764099	TP-5	Clean Earth of Carteret in Carteret, New Jersey	37.45	10,755.22
324	05/03/13	764096	TP-5	Clean Earth of Carteret in Carteret, New Jersey	39.11	10,794.33
325	05/03/13	764093	TP-6	Clean Earth of Carteret in Carteret, New Jersey	41.71	10,836.04
326	05/03/13	764092	TP-5	Clean Earth of Carteret in Carteret, New Jersey	39.55	10,875.59
327	05/03/13	764091	TP-6	Clean Earth of Carteret in Carteret, New Jersey	37.19	10,912.78
328	05/03/13	764090	TP-5	Clean Earth of Carteret in Carteret, New Jersey	36.88	10,949.66
329	05/03/13	764089	TP-6	Clean Earth of Carteret in Carteret, New Jersey	34.81	10,984.47
					10,984.47	

TABLE 3 (Page 1 of 3)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Lebanon West Farms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-1	EP-2	EP-3	EP-3 (bottom)	EP-4	EP-3/4 (north)	EP-3/4 (south)	EP-3/4 (east)	EP-3/4 (west)	EP-4 (bottom)	EP-5	EP-X	EP-6	EP-6 RE (north)	EP-6 RE (south)	EP-6 RE (east)	EP-6 RE (west)	EP-7	Part 375 - Track 1 Soil Cleanup Objectives*	Track 4 Site Specific Soil Cleanup Objectives**
Sample Depth	2 ft	2 ft	2 ft	4 ft	2 ft	4 ft	4 ft	4 ft	4 ft	4 ft	2 ft	2 ft	2 ft	4 ft	4 ft	4 ft	4 ft	2 ft		
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Date Sampled	12/6/2012	12/6/2012	12/6/2012	2/6/2013	12/6/2012	2/6/2013	2/6/2013	2/6/2013	2/6/2013	2/6/2013	12/6/2012	12/6/2012	12/6/2012	2/6/2013	2/6/2013	2/6/2013	2/6/2013	12/6/2012		
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics																				
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	50	100,000
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	60	4,800
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
2-Butanone (MEK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	120	100,000
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	760	2,400
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	1,100	100,000
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	370	49,000
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Cyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	1,100	100,000
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	2,400	49,000
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	1,800	13,000
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	270	26,000
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	20	3,100
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	330	100,000
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	250	100,000
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	190	100,000
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
1,4-Dioxane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	100	13,000
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	1,000	41,000
Freon 113	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Methyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Methylcyclohexane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Methyl Tert Butyl Ether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	930	100,000
4-Methyl-2-pentanone(MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	50	100,000
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.6 J	1.4 J	NA	NA	NA	NA	NA	NA	1,300	19,000
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	700	100,000
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	680	100,000
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.9 J	1.7 J	NA	NA	NA	NA	NA	NA	470	21,000
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Vinyl chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	20	900
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	100,000
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	100,000
Xylene (total)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	260	100,000

Notes:
All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Analyzed
J=Analyte detected below quantitation limits
NVG=No value given

EP-X is a duplicate of EP-5
**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 3 (Page 2 of 3)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Lebanon West Farms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-8	EP-9	EP-10	EP-11	EP-12	EP-13	EP-14	EP-15	EP-16	EP-17	EP-18	EP-19	EP-20	EP-21	EP-22	EP-23	EP-24	EP-25	Part 375 - Track 1	Track 4
Sample Depth	2 ft	2 ft	2 ft	2 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	5 ft	5 ft	10 ft	5 ft	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Objectives*	Soil Cleanup
Date Sampled	12/6/2012	12/6/2012	12/6/2012	12/6/2012	2/20/2013	3/6/2013	3/6/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	6/12/2013	6/12/2013	6/12/2013	6/12/2013		Objectives**
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatile Organics																				
Acetone	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	6.6 J	50	100,000
Benzene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	60	4,800
Bromochloromethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Bromodichloromethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Bromoform	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Bromomethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
2-Butanone (MEK)	NA	NA	ND	NA	NA	NA	NA	ND R	NA	NA	NA	NA	ND R	NA	NA	NA	NA	ND R	120	100,000
Carbon disulfide	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Carbon tetrachloride	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	760	2,400
Chlorobenzene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	1,100	100,000
Chloroethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Chloroform	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	370	49,000
Chloromethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Cyclohexane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
1,2-Dibromo-3-chloropropane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Dibromochloromethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
1,2-Dibromoethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
1,2-Dichlorobenzene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	1,100	100,000
1,3-Dichlorobenzene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	2,400	49,000
1,4-Dichlorobenzene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	1,800	13,000
Dichlorodifluoromethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
1,1-Dichloroethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	270	26,000
1,2-Dichloroethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	20	3,100
1,1-Dichloroethene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	330	100,000
cis-1,2-Dichloroethene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	250	100,000
trans-1,2-Dichloroethene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	190	100,000
1,2-Dichloropropane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
cis-1,3-Dichloropropene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
trans-1,3-Dichloropropene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
1,4-Dioxane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	100	13,000
Ethylbenzene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	1,000	41,000
Freon 113	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
2-Hexanone	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Isopropylbenzene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Methyl Acetate	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	6.9 J	NVG	NVG
Methylcyclohexane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Methyl Tert Butyl Ether	NA	NA	ND	NA	NA	NA	NA	ND UJ	NA	NA	NA	NA	ND UJ	NA	NA	NA	NA	ND	930	100,000
4-Methyl-2-pentanone(MIBK)	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Methylene chloride	NA	NA	ND	NA	NA	NA	NA	10.2	NA	NA	NA	NA	21.7	NA	NA	NA	NA	ND	50	100,000
Styrene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
1,1,2,2-Tetrachloroethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND R	NVG	NVG
Tetrachloroethene	NA	NA	0.74 J	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	1,300	19,000
Toluene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	700	100,000
1,2,3-Trichlorobenzene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
1,2,4-Trichlorobenzene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
1,1,1-Trichloroethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	680	100,000
1,1,2-Trichloroethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Trichloroethene	NA	NA	0.98 J	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	470	21,000
Trichlorofluoromethane	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Vinyl chloride	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	20	900
m,p-Xylene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	100,000
o-Xylene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	100,000
Xylene (total)	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	260	100,000

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NA=Not Analyzed

J=Analyte detected below quantitation limits

NVG=No value given

R=Sample results are rejected due to deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verifie

UJ=The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the san

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 3 (Page 3 of 3)

Validated Analytical Results for Volatile Organic Compounds in Soil Samples
Lebanon West Farms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-26	EP-27	EP-28	EP-29	EP-XX	EP-30	EP-31	EP-32	EP-33	EP-34	EP-35	Field Blank	Field Blank	Field Blank	Field Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Part 375 - Track 1	Track 4
Sample Depth	5 ft	10 ft	5 ft	5 ft	5 ft	2 ft	2 ft	2 ft	2 ft	2 ft	2 ft	NA	NA	NA	NA	NA	NA	NA	NA	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Objectives*	Soil Cleanup
Date Sampled	6/12/2013	6/12/2013	6/12/2013	6/12/2013	6/12/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	12/6/2012	4/16/2013	6/12/2013	6/17/2013	12/6/2012	4/16/2013	6/12/2013	6/17/2013		Objectives**
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/Kg	ug/Kg	ug/Kg
Volatile Organics																					
Acetone	NA	NA	NA	NA	7.7 J	ND R	NA	NA	NA	NA	ND R	ND	ND	ND R	ND	ND	ND	ND R	ND	50	100,000
Benzene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	60	4,800
Bromochloromethane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Bromodichloromethane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Bromoform	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Bromomethane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
2-Butanone (MEK)	NA	NA	NA	NA	ND R	ND R	NA	NA	NA	NA	ND R	ND R	ND	ND	ND R	ND R	ND	ND	ND R	120	100,000
Carbon disulfide	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Carbon tetrachloride	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	760	2,400
Chlorobenzene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,100	100,000
Chloroethane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Chloroform	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	370	49,000
Chloromethane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Cyclohexane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Dibromochloromethane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
1,2-Dibromoethane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
1,2-Dichlorobenzene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,100	100,000
1,3-Dichlorobenzene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	2,400	49,000
1,4-Dichlorobenzene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,800	13,000
Dichlorodifluoromethane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
1,1-Dichloroethane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	270	26,000
1,2-Dichloroethane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	3,100
1,1-Dichloroethene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	100,000
cis-1,2-Dichloroethene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	250	100,000
trans-1,2-Dichloroethene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	190	100,000
1,2-Dichloropropane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
cis-1,3-Dichloropropene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
trans-1,3-Dichloropropene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
1,4-Dioxane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	13,000
Ethylbenzene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,000	41,000
Freon 113	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
2-Hexanone	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Isopropylbenzene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Methyl Acetate	NA	NA	NA	NA	20.4 J	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Methylcyclohexane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Methyl Tert Butyl Ether	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	930	100,000
4-Methyl-2-pentanone(MIBK)	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Methylene chloride	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	7.9	50	100,000
Styrene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	ND R	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Tetrachloroethene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,300	19,000
Toluene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	700	100,000
1,2,3-Trichlorobenzene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
1,2,4-Trichlorobenzene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
1,1,1-Trichloroethane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	680	100,000
1,1,2-Trichloroethane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Trichloroethene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	470	21,000
Trichlorofluoromethane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Vinyl chloride	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	900
m,p-Xylene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	0.41 J	ND	ND	ND	ND	ND	ND	ND	ND	NVG	100,000
o-Xylene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	0.28 J	ND	ND	ND	ND	ND	ND	ND	ND	NVG	100,000
Xylene (total)	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	0.69 J	ND	ND	ND	ND	ND	ND	ND	ND	260	100,000

Notes:
All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Analyzed
J=Analyte detected below quantitation limits
NVG=No value given
R=Sample results are rejected due to deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verifiec

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 4 (Page 1 of 3)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples
Lebanon West Farms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-1	EP-2	EP-3	EP-3 (bottom)	EP-4	EP-3/4 (north)	EP-3/4 (south)	EP-3/4 (east)	EP-3/4 (west)	EP-4 (bottom)	EP-5	EP-X	EP-6	EP-6 RE (north)	EP-6 RE (south)	EP-6 RE (east)	EP-6 RE (west)	EP-7	Part 375 - Track 1	Track 4
Sample Depth	2 ft	2 ft	2 ft	4 ft	2 ft	4 ft	4 ft	4 ft	4 ft	4 ft	2 ft	2 ft	2 ft	4 ft	4 ft	4 ft	4 ft	2 ft	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Objectives*	Soil Cleanup
Date Sampled	12/6/2012	12/6/2012	12/6/2012	2/6/2013	12/6/2012	2/6/2013	2/6/2013	2/6/2013	2/6/2013	2/6/2013	12/6/2012	12/6/2012	12/6/2012	2/6/2013	2/6/2013	2/6/2013	2/6/2013	12/6/2012		Objectives**
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Semi-Volatile Organics																				
2-Chlorophenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
4-Chloro-3-methyl phenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
2,4-Dichlorophenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
2,4-Dimethylphenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
2,4-Dinitrophenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
4,6-Dinitro-o-cresol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
2-Methylphenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	500,000
3&4-Methylphenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
2-Nitrophenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
4-Nitrophenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Pentachlorophenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	800	6,700
Phenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	330	500,000
2,3,4,6-Tetrachlorophenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
2,4,5-Trichlorophenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
2,4,6-Trichlorophenol	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Acenaphthene	53.1	21.4 J	43.9	NA	79.5	NA	NA	NA	NA	NA	29.2 J	425	64.7	NA	NA	NA	NA	ND	20,000	500,000
Acenaphthylene	170	92.4	90.9	NA	210	NA	NA	NA	NA	NA	239	769	579	NA	NA	NA	NA	ND	100,000	500,000
Acetophenone	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Anthracene	294	132	180	NA	448	NA	NA	NA	NA	NA	272	1,750	679	NA	NA	NA	NA	16.7 J	100,000	500,000
Atrazine	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Benzo(a)anthracene	866	560	569	NA	**1,300**	NA	NA	NA	NA	NA	841	**4,550**	**2,290**	NA	NA	NA	NA	65.6	1,000	5,600
Benzo(a)pyrene	865	611	590	**2,060**	**1,270**	543	472	93.1	620	72.9	841	**4,520**	**2,350**	664	116	ND	ND	70	1,000	1,000
Benzo(b)fluoranthene	**1,080**	657	718	NA	**1,420**	NA	NA	NA	NA	NA	779	**4,780**	**3,010**	NA	NA	NA	NA	81.7	1,000	5,600
Benzo(g,h,i)perylene	600	433	394	NA	881	NA	NA	NA	NA	NA	663	2,950	1,900	NA	NA	NA	NA	47.6	100,000	500,000
Benzo(k)fluoranthene	393	365	256	NA	**1,000**	NA	NA	NA	NA	NA	630	**2,680**	**1,060**	NA	NA	NA	NA	36.2	800	56,000
4-Bromophenyl phenyl ether	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Butyl benzyl phthalate	41,900	44.8 J	42.3 J	NA	42.6 J	NA	NA	NA	NA	NA	58.7 J	296	795	NA	NA	NA	NA	ND	NVG	NVG
1,1'-Biphenyl	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	50.3 J	ND	NA	NA	NA	NA	ND	NVG	NVG
Benzaldehyde	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
2-Chloronaphthalene	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
4-Chloroaniline	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Carbazole	93.1	61.2 J	64.0 J	NA	195	NA	NA	NA	NA	NA	112	769	247	NA	NA	NA	NA	ND	NVG	NVG
Caprolactam	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Chrysene	954	592	604	NA	**1,300**	NA	NA	NA	NA	NA	912	**4,920**	**2,580**	NA	NA	NA	NA	76.1	1,000	56,000
bis(2-Chloroethoxy)methane	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
bis(2-Chloroethyl)ether	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
bis(2-Chloroisopropyl)ether	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
4-Chlorophenyl phenyl ether	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
2,4-Dinitrotoluene	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
2,6-Dinitrotoluene	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
3,3'-Dichlorobenzidine	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Dibenzo(a,h)anthracene	199	134	138	NA	283	NA	NA	NA	NA	NA	202	**1,070**	**614**	140	26.4 J	ND	ND	16.9 J	330	560
Dibenzofuran	42.4 J	ND	22.4 J	NA	54.5 J	NA	NA	NA	NA	NA	23.4 J	407	49.9 J	NA	NA	NA	NA	ND	NVG	350,000
Di-n-butyl phthalate	76.9	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Di-n-octyl phthalate	121	ND	ND	NA	ND	NA	NA	NA	NA	NA	787	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Diethyl phthalate	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Dimethyl phthalate	34.1 J	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	39.1 J	44.2 J	NA	NA	NA	NA	ND	NVG	NVG
bis(2-Ethylhexyl)phthalate	11,100	127	112	NA	215	NA	NA	NA	NA	NA	58.5 J	1,190	239	NA	NA	NA	NA	ND	NVG	NVG
Fluoranthene	1,530	979	1,100	NA	2,690	NA	NA	NA	NA	NA	1,350	9,510	3,610	NA	NA	NA	NA	122	100,000	500,000
Fluorene	77.6	24.5 J	45	NA	109	NA	NA	NA	NA	NA	42	562	85.6	NA	NA	NA	NA	ND	30,000	500,000
Hexachlorobenzene	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	6,000
Hexachlorobutadiene	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Hexachlorocyclopentadiene	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Hexachloroethane	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Indeno(1,2,3-cd)pyrene	**535**	380	362	NA	**774**	NA	NA	NA	NA	NA	**566**	**2,660**	**1,610**	NA	NA	NA	NA	42.7	500	5,600
Isophorone	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
2-Methylnaphthalene	20.4 J	ND	ND	NA	26.1 J	NA	NA	NA	NA	NA	ND	174	25.4 J	NA	NA	NA	NA	ND	NVG	NVG
2-Nitroaniline	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
3-Nitroaniline	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
4-Nitroaniline	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Naphthalene	27.0 J	ND	18.6 J	NA	30.0 J	NA	NA	NA	NA	NA	26.1 J	256	37.3	NA	NA	NA	NA	ND	12,000	500,000
Nitrobenzene	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	69,000
N-Nitroso-di-n-propylamine	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
N-Nitrosodiphenylamine	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG
Phenanthrene	769	387	518	NA	1,310	NA	NA	NA	NA	NA	649	6,610	1,490	NA	NA	NA	NA	55.6	100,000	500,000
Pyrene	1,520	877	992	NA	2,190	NA	NA	NA	NA	NA	1,570	9,730	4,260	NA	NA	NA	NA	107	100,000	500,000
1,2,4,5-Tetrachlorobenzene	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	NVG	NVG

Notes:
All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given

Bold indicates detection over Part 375 Track 1 Limits

Bold, Boxed, and Colored indicates detection over Part 375 Track 4 Limits

EP-X is a duplicate of EP-5

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 4 (Page 2 of 3)

Validated Analytical Results for Semi- Volatile Organic Compounds in Soil Samples
Lebanon West Farms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-8	EP-9	EP-10	EP-11	EP-12	EP-13	EP-14	EP-15	EP-16	EP-17	EP-18	EP-19	EP-20	EP-21	EP-22	EP-23	EP-24	EP-25	Part 375 - Track 1	Track 4
Sample Depth	2 ft	2 ft	2 ft	2 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	5 ft	5 ft	10 ft	5 ft	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Objectives*	Soil Cleanup
Date Sampled	12/6/2012	12/6/2012	12/6/2012	12/6/2012	2/20/2013	3/6/2013	3/6/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	6/12/2013	6/12/2013	6/12/2013	6/12/2013		Objectives**
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Semi-Volatile Organics																				
2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND UJ	ND UJ	ND R	ND UJ	ND UJ	ND UJ	ND	ND	ND	ND	NVG	NVG
4-Chloro-3-methyl phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND UJ	ND UJ	ND R	ND UJ	ND UJ	ND UJ	ND	ND	ND	ND	NVG	NVG
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND UJ	ND UJ	ND R	ND UJ	ND UJ	ND UJ	ND	ND	ND	ND	NVG	NVG
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
4,6-Dinitro-o-cresol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	500,000
3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
2-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND UJ	ND UJ	ND R	ND UJ	ND UJ	ND UJ	ND	ND	ND	ND	NVG	NVG
4-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
Pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	800	6,700
Phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	330	500,000
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
Acenaphthene	ND	ND	ND	27.3 J	ND	ND	ND	27.9 J	61.5	35.6 J	ND R	11.1 J	ND UJ	18.2 J	47.7	ND	21.7 J	ND UJ	20,000	500,000
Acenaphthylene	ND	ND	56.7	109	ND	ND	ND	36.1 J	41.4	70.8	28.5 J	24.2 J	33.7 J	37.0 J	76.4	ND	35.7 J	ND UJ	100,000	500,000
Acetophenone	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND UJ	ND UJ	ND R	ND UJ	ND UJ	ND UJ	ND	ND	ND	ND	NVG	NVG
Anthracene	ND	ND	71.2	159	ND	ND	ND	118	178	171	57.5 J	71.0	60.4 J	87.9	171	28.0 J	78.9	55.5 J	100,000	500,000
Atrazine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
Benzo(a)anthracene	ND	43.1	221	480	ND	ND	ND	407	540 J	533	223 J	257 J	250 J	276	441	69.5	206	206 J	1,000	5,600
Benzo(a)pyrene	ND	42.4	215	520	ND	ND	ND	325	489	491	189 J	218	214 J	260	428	61.7	198	204 J	1,000	1,000
Benzo(b)fluoranthene	ND	42.6	299	578	ND	ND	ND	314	421	406	150 J	224	212 J	234	570	79.1	229	247 J	1,000	5,600
Benzo(g,h,i)perylene	ND	28.4 J	169	392	ND	ND	ND	210	354	378	144 J	165	157 J	191	331	51.1	141	139 J	100,000	500,000
Benzo(k)fluoranthene	ND	22.8 J	179	301	ND	ND	ND	213	374	328	127 J	177	167 J	198	197	32.7 J	96.5	91.4 J	800	56,000
4-Bromophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
Butyl benzyl phthalate	ND	ND	ND	49.6 J	ND	ND	ND	ND UJ	ND	ND	ND R	ND	ND UJ	ND	66.9 J	ND	ND	ND	NVG	NVG
1,1'-Biphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
Benzaldehyde	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND UJ	ND UJ	ND R	ND UJ	ND UJ	ND UJ	ND	ND	ND	ND	NVG	NVG
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
Carbazole	ND	ND	27.8 J	66.8	ND	ND	ND	25.4 J	66.8 J	43.9 J	22.8 J	24.5 J	16.7 J	29.5 J	91.6	ND	26.4 J	18.6 J	NVG	NVG
Caprolactam	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
Chrysene	ND	49.9	231	531	ND	ND	ND	441	547 J	583	228	256 J	251 J	304	484	74.9	214	213 J	1,000	56,000
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
bis(2-Chloroisopropyl)ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
4-Chlorophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
Dibenzo(a,h)anthracene	ND	ND	54.5	125	ND	ND	ND	71.8	131	122	56.6 J	ND	58.9 J	79.4	92.4	ND	38.7 J	39.8 J	330	560
Dibenzofuran	ND	ND	ND	17.0 J	ND	ND	ND	ND	28.0 J	18.9 J	ND R	ND	ND UJ	ND	33.5 J	ND	ND	ND UJ	NVG	350,000
Di-n-butyl phthalate	ND	ND	ND	604	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	44.7 J	ND	ND	ND	NVG	NVG
Di-n-octyl phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
Diethyl phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
Dimethyl phthalate	ND	46.3 J	87.8	32.1 J	ND	40.5 J	ND	ND	ND	ND	ND R	ND	ND UJ	76.6	ND	ND	ND	ND	NVG	NVG
bis(2-Ethylhexyl)phthalate	ND	ND	ND	70.2	105	ND	ND	72.5 J	88.4 J	165	58.6 J	315 J	ND UJ	ND	1,290	1,060	116	316	NVG	NVG
Fluoranthene	ND	69.1	389	888	ND	ND	ND	589	711	702	320 J	376	269 J	266	774	127	352	310 J	100,000	500,000
Fluorene	ND	ND	ND	39.3	ND	ND	ND	35.2 J	52.5	32.6 J	ND R	12.0 J	ND UJ	18.7 J	50.8	ND	26.6 J	ND UJ	30,000	500,000
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	6,000
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND UJ	ND UJ	ND R	ND UJ	ND UJ	ND UJ	ND	ND	ND	ND	NVG	NVG
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
Hexachloroethane	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND UJ	ND UJ	ND R	ND UJ	ND UJ	ND UJ	ND	ND	ND	ND	NVG	NVG
Indeno(1,2,3-cd)pyrene	ND	24.7 J	145	349	ND	ND	ND	194	321	305	129 J	144	138 J	171	346	53.8	144	145 J	500	5,600
Isophorone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND UJ	ND UJ	ND R	ND UJ	ND UJ	ND UJ	ND	ND	ND	ND	NVG	NVG
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND UJ	40.4 J	26.5 J	ND R	ND UJ	ND UJ	14.1 J	22.2 J	ND	ND	ND UJ	12,000	500,000
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND UJ	ND UJ	ND R	ND UJ	ND UJ	ND UJ	ND	ND	ND	ND	NVG	69,000
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG
Phenanthrene	ND	26.5 J	154	421	ND	ND	ND	562	694	643	168 J	265	162 J	312	631	96.9	235	132 J	100,000	500,000
Pyrene	ND	67.6	380	795	14.2 J	ND	ND	879	1,660 J	1,320	936 J	999 J	851 J	776	1,060	154	433	398 J	100,000	500,000
1,2,4,5-Tetrachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND R	ND	ND UJ	ND	ND	ND	ND	ND	NVG	NVG

Notes:

All concentrations are reported in micrograms per kilogram (ug/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given
UJ=The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R=Sample results are rejected due to deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verifie

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 4 (Page 3 of 3)

Validated Analytical Results for Semi-Volatile Organic Compounds in Soil Samples
Lebanon West Farms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-26	EP-27	EP-28	EP-29	EP-XX	EP-30	EP-31	EP-32	EP-33	EP-34	EP-35	Field Blank	Field Blank	Field Blank	Field Blank	Part 375 - Track 1	Track 4
Sample Depth	5 ft	10 ft	5 ft	5 ft	5 ft	2 ft	2 ft	2 ft	2 ft	2 ft	2 ft	NA	NA	NA	NA	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Aqueous	Aqueous	Aqueous	Aqueous	Objectives*	Soil Cleanup
Date Sampled	6/12/2013	6/12/2013	6/12/2013	6/12/2013	6/12/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	12/6/2012	4/16/2013	6/12/2013	6/17/2013		Objectives**
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/L	ug/L	ug/L	ug/L	ug/Kg	ug/Kg
Semi-Volatile Organics																	
2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
4-Chloro-3-methyl phenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND	NVG	NVG
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND	ND	NVG	NVG
4,6-Dinitro-o-cresol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND	ND	NVG	NVG
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	500,000
3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
2-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND	NVG	NVG
4-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND	ND	NVG	NVG
Pentachlorophenol	ND	ND	ND	ND	ND	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND	ND UJ	ND	ND	800	6,700
Phenol	**478**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	500,000
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND	NVG	NVG
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND	NVG	NVG
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND	NVG	NVG
Acenaphthene	36.7	15.1 J	ND	ND	26.0 J	46.6 J	ND	410	115 J	ND	ND	ND	ND	ND	ND	20,000	500,000
Acenaphthylene	248	28.9 J	ND	231	147 J	17.8 J	603	45.1 J	79.5 J	ND	ND	ND	ND	ND	ND	100,000	500,000
Acetophenone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Anthracene	294	62.7	ND	150	322 J	147	801	752	318	ND	99.6 J	ND	ND	ND	ND	100,000	500,000
Atrazine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Benzo(a)anthracene	986	185	54.7	**1,090**	**1,020 J**	428	**3,280**	**1,820**	**1,330**	227 J	421 J	ND	ND	ND	ND	1,000	5,600
Benzo(a)pyrene	879	184	54.2	**1,120**	764 J	359	**2,410**	**1,470**	**1,190**	191 J	350 J	ND	ND	ND	ND	1,000	1,000
Benzo(b)fluoranthene	**1,080**	216	61.6	**1,320**	949 J	372	**3,580**	**1,520**	**1,140**	167 J	315 J	ND	ND	ND	ND	1,000	5,600
Benzo(g,h,i)perylene	489	133	41.8	701	406 J	248	1,740	927	726	215 J	306 J	ND	ND	ND	ND	100,000	500,000
Benzo(k)fluoranthene	410	89.2	28.3 J	520	336 J	387	**2,100**	**941**	**902**	194 J	335 J	ND	ND	ND	ND	800	56,000
4-Bromophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Butyl benzyl phthalate	ND	ND	ND	41.4 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
1,1'-Biphenyl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Benzaldehyde	ND	ND	ND	ND	ND	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND	ND	ND	ND UJ	NVG	NVG
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Carbazole	99.3	24.6 J	ND	23.5 J	41.7 J	49.1 J	449 J	298	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Caprolactam	ND	ND	ND	ND	ND	ND	ND	ND	140	ND	ND	ND	ND	ND	ND	NVG	NVG
Chrysene	963	190	57.3	967	888 J	417	**3,710**	**1,720**	**1,260**	251 J	380 J	ND	ND	ND	ND	1,000	56,000
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
bis(2-Chloroisopropyl)ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
4-Chlorophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Dibenzo(a,h)anthracene	150	38.5	ND	194	128 J	85.6 J	**670**	329	251	ND	ND	ND	ND	ND	ND	330	560
Dibenzofuran	113	ND	ND	ND	24.3 J	30.3 J	91.6 J	182	49.8 J	ND	ND	ND	ND	ND	ND	NVG	350,000
Di-n-butyl phthalate	349	ND	ND	ND	ND	ND	ND	37.3 J	34.1 J	ND	ND	ND	ND	ND	ND	NVG	NVG
Di-n-octyl phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7 J	ND	ND	NVG	NVG
Diethyl phthalate	ND	ND	ND	ND	ND	25.6 J	185 J	34.2 J	29.8 J	150 J	146 J	ND	ND	ND	ND	NVG	NVG
Dimethyl phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
bis(2-Ethylhexyl)phthalate	873	314	200	229	282	50.1 J	469 J	112 J	141 J	193 J	350 J	ND	5.5	ND	ND	NVG	NVG
Fluoranthene	1,810	320	80.1	1,610	1,470 J	842	6,300	3,530	2,300	409 J	661	ND	ND	ND	ND	100,000	500,000
Fluorene	178	19.4 J	ND	ND	40.6 J	54.1 J	157 J	339	95.8 J	ND	ND	ND	ND	ND	ND	30,000	500,000
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	6,000
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND UJ	ND	ND	NVG	NVG
Hexachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Indeno(1,2,3-cd)pyrene	**571**	138	41.4	**794**	471 J	210	**1,590**	**828**	**637**	111 J	223 J	ND	ND	ND	ND	500	5,600
Isophorone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
2-Methylnaphthalene	29.2 J	ND	ND	ND	ND	ND	ND	96.2 J	24.6 J	ND	ND	ND	ND	ND	ND	NVG	NVG
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Naphthalene	17.2 J	ND	ND	ND	16.9 J	ND	ND	123	51.5 J	ND	ND	ND	ND	ND	ND	12,000	500,000
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	69,000
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG
Phenanthrene	1,620	207	43.3	192	551 J	639	1,930	3,280	1,270	237 J	355 J	ND	ND	ND	ND	100,000	500,000
Pyrene	2,060	396	109	1,970	1,830 J	873	8,030	3,870	2,460	341 J	614	ND	ND	ND	ND	100,000	500,000
1,2,4,5-Tetrachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NVG	NVG

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NA=Not Applicable

J=Analyte detected below quantitation limits

NVG=No value given

UJ=The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6; Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives*

Bold indicates detection over Part 375 Track 1 Limits

Bold, Boxed, and Colored indicates detection over Part 375 Track 4 Limits

****Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 1 of 3)

Validated Analytical Results for Pesticides in Soil Samples
Lebanon West Farms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-1	EP-2	EP-3	EP-3 (bottom)	EP-4	EP-3/4 (north)	EP-3/4 (south)	EP-3/4 (east)	EP-3/4 (west)	EP-4 (bottom)	EP-5	EP-X	EP-6	EP-6 RE (north)	EP-6 RE (south)	EP-6 RE (east)	EP-6 RE (west)	EP-7	Part 375 - Track 1	Track 4
Sample Depth	2 ft	2 ft	2 ft	4 ft	2 ft	4 ft	4 ft	4 ft	4 ft	4 ft	2 ft	2 ft	2 ft	4 ft	4 ft	4 ft	4 ft	2 ft	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Objectives*	Soil Cleanup
Date Sampled	12/6/2012	12/6/2012	12/6/2012	2/6/2013	12/6/2012	2/6/2013	2/6/2013	2/6/2013	2/6/2013	2/6/2013	12/6/2012	12/6/2012	12/6/2012	2/6/2013	2/6/2013	2/6/2013	2/6/2013	12/6/2012		Objectives**
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Pesticides																				
Aldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	5	97
alpha-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	20	480
beta-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	36	360
delta-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	40	100,000
gamma-BHC (Lindane)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	100	1300
alpha-Chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.1	27.7	NA	NA	NA	NA	NA	NA	94	4,200
gamma-Chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.3 a	22.8 a	NA	NA	NA	NA	NA	NA	NVG	NVG
Dieldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**17.8**	**34.2**	NA	NA	NA	NA	NA	NA	5	200
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**24.9**	**49.5**	NA	NA	NA	NA	NA	NA	3.3	13,000
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**17.2 b**	**26.3 b**	NA	NA	NA	NA	NA	NA	3.3	8,900
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**114 c**	**228 c**	NA	NA	NA	NA	NA	NA	3.3	7,900
Endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	14	11,000
Endosulfan sulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	2,400	24,000
Endrin aldehyde	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Endosulfan-I	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	2,400	24,000
Endosulfan-II	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	2,400	24,000
Heptachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	42	2,100
Heptachlor epoxide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.0 a	4.9	NA	NA	NA	NA	NA	NA	NVG	NVG
Methoxychlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Endrin ketone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG
Toxaphene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NVG	NVG

Notes:

All concentrations are reported in micrograms per kilogram (µg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NA=Not Analyized

J=Analyte detected below quantitation limits

NVG=No value given

EP-X is a duplicate of EP-5

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

Bold indicates detection over Part 375 Track 1 Limits

***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

a=More than 40 % RPD for detected concentrations between the two GC columns.

b=Reported from 1st signal. %D of check on 2nd signal excess method criteria (20 %) so using for confirmation only.

c=Reported from 1st signal. %RSD of initial calibration on 2nd signal exceed method criteria (20 %) so using for confirmation only.

TABLE 5 (Page 2 of 3)

Validated Analytical Results for Pesticides in Soil Samples
Lebanon West Faarms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-8	EP-9	EP-10	EP-11	EP-12	EP-13	EP-14	EP-15	EP-16	EP-17	EP-18	EP-19	EP-20	EP-21	EP-22	EP-23	EP-24	EP-25	Part 375 - Track 1	Track 4
Sample Depth	2 ft	2 ft	2 ft	2 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	5 ft	5 ft	10 ft	10 ft	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Objectives*	Soil Cleanup
Date Sampled	12/6/2012	12/6/2012	12/6/2012	12/6/2012	2/20/2013	3/6/2013	3/6/2013	4/16/2013	4/16/2013	4/16/2013	#######	4/16/2013	4/16/2013	4/16/2013	6/12/2013	6/12/2013	6/12/2013	6/12/2013		Objectives**
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Pesticides																				
Aldrin	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	5	97
alpha-BHC	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	20	480
beta-BHC	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	36	360
delta-BHC	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	40	100,000
gamma-BHC (Lindane)	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	100	1300
alpha-Chlordane	NA	NA	4.2	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	94	4,200
gamma-Chlordane	NA	NA	2.8 a	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Dieldrin	NA	NA	3.4	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	5	200
4,4'-DDD	NA	NA	3.3	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	0.98	3.3	13,000
4,4'-DDE	NA	NA	**3.5 b**	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	2.5	3.3	8,900
4,4'-DDT	NA	NA	**20.4**	NA	NA	NA	NA	ND	NA	NA	NA	NA	1.9 J	NA	NA	NA	NA	**5.8**	3.3	7,900
Endrin	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	14	11,000
Endosulfan sulfate	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	2,400	24,000
Endrin aldehyde	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Endosulfan-I	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	2,400	24,000
Endosulfan-II	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	2,400	24,000
Heptachlor	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	42	2,100
Heptachlor epoxide	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Methoxychlor	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Endrin ketone	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG
Toxaphene	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND	NVG	NVG

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.

Bold indicates detection over Part 375 Track 1 Limits

ND=Indicates the compound was analyzed for but not detecte

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*

NA=Not Applicable

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

J=Analyte detected below quantitation limits

NVG=No value given

***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 5 (Page 3 of 3)

Validated Analytical Results for Pesticides in Soil Samples
Lebanon West Faarms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-26	EP-27	EP-28	EP-29	EP-XX	EP-30	EP-31	EP-32	EP-33	EP-34	EP-35	Field Blank	Field Blank	Field Blank	Field Blank	Part 375 - Track 1	Track 4
Sample Depth	5 ft	10 ft	5 ft	5 ft	5 ft	2 ft	2 ft	2 ft	2 ft	2 ft	2 ft	NA	NA	NA	NA	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Aqueous	Aqueous	Aqueous	Aqueous	Objectives*	Soil Cleanup
Date Sampled	6/12/2013	6/12/2013	6/12/2013	6/12/2013	6/12/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	12/6/2012	4/16/2013	6/12/2013	6/17/2013		Objectives**
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/L	ug/L	ug/L	ug/L	ug/Kg	ug/Kg
Pesticides																	
Aldrin	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	5	97
alpha-BHC	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	20	480
beta-BHC	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	36	360
delta-BHC	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	40	100,000
gamma-BHC (Lindane)	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	100	1300
alpha-Chlordane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	94	4,200
gamma-Chlordane	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	NVG	NVG
Dieldrin	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	5	200
4,4'-DDD	NA	NA	NA	NA	1.3 J	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	3.3	13,000
4,4'-DDE	NA	NA	NA	NA	2.6 J	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	3.3	8,900
4,4'-DDT	NA	NA	NA	NA	**9.9 J**	0.81	NA	NA	NA	NA	3 J	ND	ND	ND	ND	3.3	7,900
Endrin	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	14	11,000
Endosulfan sulfate	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	2,400	24,000
Endrin aldehyde	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	NVG	NVG
Endosulfan-I	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	2,400	24,000
Endosulfan-II	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	2,400	24,000
Heptachlor	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	42	2,100
Heptachlor epoxide	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	NVG	NVG
Methoxychlor	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	NVG	NVG
Endrin ketone	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	NVG	NVG
Toxaphene	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND	ND	NVG	NVG

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detecte

NA=Not Applicable

J=Analyte detected below quantitation limits

NVG=No value given

**6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;*
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 6 (Page 1 of 3)

Validated Analytical Results for PCBs in Soil Samples
Lebanon West Farms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-1	EP-2	EP-3	EP-3 (bottom)	EP-4	EP-3/4 (north)	EP-3/4 (south)	EP-3/4 (east)	EP-3/4 (west)	EP-4 (bottom)	EP-5	EP-X	EP-6	EP-6 RE (north)	EP-6 RE (south)	EP-6 RE (east)	EP-6 RE (west)	EP-7	Part 375	Track 4
Sample Depth	2 ft	2 ft	2 ft	4 ft	2 ft	4 ft	4 ft	4 ft	4 ft	4 ft	2 ft	2 ft	2 ft	4 ft	4 ft	4 ft	4 ft	2 ft	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Unrestricted	Soil Cleanup
Date Sampled	12/6/2012	12/6/2012	12/6/2012	2/6/2013	12/6/2012	2/6/2013	2/6/2013	2/6/2013	2/6/2013	2/6/2013	12/6/2012	12/6/2012	12/6/2012	2/6/2013	2/6/2013	2/6/2013	2/6/2013	12/6/2012	Use*	Objectives**
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
PCBs																				
Aroclor 1016	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	100	1,000
Aroclor 1221	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	100	1,000
Aroclor 1232	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	100	1000
Aroclor 1242	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	100	1000
Aroclor 1248	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	100	1000
Aroclor 1254	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	100	1000
Aroclor 1260	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	100	1000
Aroclor 1268	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	100	1,000
Aroclor 1262	ND	ND	ND	NA	ND	NA	NA	NA	NA	NA	ND	ND	ND	NA	NA	NA	NA	ND	100	1,000

Notes:

All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.

ND=Indicates the compound was analyzed for but not detected.

NA=Not Applicable

J=Analyte detected below quantitation limits

NVG=No value given

*6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

EP-X is a duplicate of EP-5

TABLE 6 (Page 2 of 3)

Validated Analytical Results for PCBs in Soil Samples
Lebanon West Farms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-8	EP-9	EP-10	EP-11	EP-12	EP-13	EP-14	EP-15	EP-16	EP-17	EP-18	EP-19	EP-20	EP-21	EP-22	EP-23	EP-24	EP-25	Part 375	Track 4
Sample Depth	2 ft	2 ft	2 ft	2 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	5 ft	5 ft	10 ft	5 ft	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Unrestricted	Soil Cleanup
Date Sampled	12/6/2012	12/6/2012	12/6/2012	12/6/2012	2/20/2013	3/6/2013	3/6/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	6/12/2013	6/12/2013	6/12/2013	6/12/2013	Use*	Objectives**
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
PCBs																				
Aroclor 1016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,000
Aroclor 1221	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,000
Aroclor 1232	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1000
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1000
Aroclor 1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1000
Aroclor 1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1000
Aroclor 1260	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1000
Aroclor 1268	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,000
Aroclor 1262	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,000

Notes:
All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given

*6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 6 (Page 3 of 3)

Validated Analytical Results for PCBs in Soil Samples
Lebanon West Farms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-26	EP-27	EP-28	EP-29	EP-XX	EP-30	EP-31	EP-32	EP-33	EP-34	EP-35	Field Blank	Field Blank	Field Blank	Field Blank	Part 375	Track 4
Sample Depth	5 ft	10 ft	5 ft	5 ft	5 ft	2 ft	2 ft	2 ft	2 ft	2 ft	2 ft	NA	NA	NA	NA	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Aqueous	Aqueous	Aqueous	Aqueous	Unrestricted	Soil Cleanup
Date Sampled	6/12/2013	6/12/2013	6/12/2013	6/12/2013	6/12/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	12/6/2012	4/16/2013	6/12/2013	6/17/2013	Use*	Objectives**
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/L	ug/L	ug/L	ug/L	ug/Kg	ug/Kg
PCBs																	
Aroclor 1016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,000
Aroclor 1221	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,000
Aroclor 1232	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1000
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1000
Aroclor 1248	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1000
Aroclor 1254	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1000
Aroclor 1260	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1000
Aroclor 1268	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,000
Aroclor 1262	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	1,000

Notes:
All concentrations are reported in micrograms per kilogram (μg/kg) or parts per billion.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given
*6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives
***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 7 (Page 1 of 3)

Validated Analytical Results for Metals in Soil Samples
Lebanon West Farms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-1	EP-2	EP-3	EP-3 (bottom)	EP-4	EP-3/4 (north)	EP-3/4 (south)	EP-3/4 (east)	EP-3/4 (west)	EP-4 (bottom)	EP-5	EP-X	EP-6	EP-6 RE (north)	EP-6 RE (south)	EP-6 RE (east)	EP-6 RE (west)	EP-7	Part 375 - Track 1	Track 4
Sample Depth[1]	2 ft	2 ft	2 ft	4 ft	2 ft	4 ft	4 ft	4 ft	4 ft	4 ft	2 ft	2 ft	2 ft	4 ft	4 ft	4 ft	4 ft	2 ft	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Objectives*	Soil Cleanup
Date Sampled	12/6/2012	12/6/2012	12/6/2012	2/6/2012	12/6/2012	12/6/2012	2/6/2012	2/6/2012	2/6/2012	2/6/2012	12/6/2012	12/6/2012	12/6/2012	2/6/2013	2/6/2013	2/6/2013	2/6/2013	12/6/2012		Objectives**
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Metals																				
Aluminum	8,990	9,190	10,600	NA	7,720	NA	NA	NA	NA	NA	10,200	8,010	8,160	NA	NA	NA	NA	9,780	NVG	NVG
Antimony	<2.3	<2.2	<2.2	NA	<2.4	NA	NA	NA	NA	NA	<2.2	<2.2	<2.3	NA	NA	NA	NA	<2.4	NVG	NVG
Arsenic	3.5	3.1	**22**	3.4	6.2	2.6	7.2	4.7	<2.4	2.9	3.9	4.6	**14.6**	NA	NA	NA	NA	4.7	13	16
Barium	198	177	**470**	158	**472**	108	**566**	144	89.7	58.6	266	**784**	**789**	190	95.0	100	92.4	117	350	400
Beryllium	0.61	0.53	0.72	NA	0.58	NA	NA	NA	NA	NA	0.6	0.5	0.7	NA	NA	NA	NA	0.64	7.2	590
Cadmium	<0.59	<0.56	1.6	NA	1	NA	NA	NA	NA	NA	<0.55	0.83	1.7	NA	NA	NA	NA	<0.59	2.5	9
Calcium	9,790	7,840	12,300	NA	24,100	NA	NA	NA	NA	NA	10,700	27,100	45,600	NA	NA	NA	NA	8,480	NVG	NVG
Chromium	24.4	23.8	**33.9**	NA	24.9	NA	NA	NA	NA	NA	**31.3**	22	23.3	NA	NA	NA	NA	20.6	30	NVG
Cobalt	6.1	5.7	7.6	NA	6	NA	NA	NA	NA	NA	<5.5	6.2	6.7	NA	NA	NA	NA	<5.9	NVG	NVG
Copper	32.4	27.8	**82.5**	NA	**79.2**	NA	NA	NA	NA	NA	25.1	46.2	**101**	NA	NA	NA	NA	29.9	50	270
Iron	16,800	16,900	23,000	NA	18,800	NA	NA	NA	NA	NA	16,800	14,400	22,200	NA	NA	NA	NA	15,900	NVG	NVG
Lead	**186**	**327**	**635**	NA	**479**	NA	NA	NA	NA	NA	**138**	**344**	**653**	NA	NA	NA	NA	**313**	63	1,000
Magnesium	3,390	3,310	3,330	NA	3,010	NA	NA	NA	NA	NA	2,530	3,870	4,430	NA	NA	NA	NA	3,290	NVG	NVG
Manganese	197	203	297	NA	220	NA	NA	NA	NA	NA	139	268	260	NA	NA	NA	NA	245	1,600	10,000
Mercury	0.081	0.075	**0.43**	NA	0.18	NA	NA	NA	NA	NA	<0.038	0.16	**0.21**	NA	NA	NA	NA	**0.5**	0.18	3
Nickel	19.7	14.2	20.3	NA	18.9	NA	NA	NA	NA	NA	14.7	12.5	20.3	NA	NA	NA	NA	14.3	30	310
Potassium	1,360	1,650	1,420	NA	<1,200	NA	NA	NA	NA	NA	<1,100	<1,100	<1,200	NA	NA	NA	NA	1,290	NVG	NVG
Selenium	<2.3	<2.2	<2.2	NA	<2.4	NA	NA	NA	NA	NA	<2.2	<2.2	<2.3	NA	NA	NA	NA	<2.4	4	1,500
Silver	<0.59	<0.56	0.71	NA	1	NA	NA	NA	NA	NA	<0.55	0.57	0.8	NA	NA	NA	NA	<0.59	2	1,500
Sodium	<1,200	<1,100	<1,100	NA	<1,200	NA	NA	NA	NA	NA	<1,100	<1,100	<1,200	NA	NA	NA	NA	<1,200	NVG	NVG
Thallium	<1.2	<1.1	<1.1	NA	<1.2	NA	NA	NA	NA	NA	<1.1	<1.1	<1.2	NA	NA	NA	NA	<1.2	NVG	NVG
Vanadium	33.9	27.2	40.5	NA	32.7	NA	NA	NA	NA	NA	34.2	27	47.3	NA	NA	NA	NA	26.9	NVG	NVG
Zinc	**201**	**178**	**628**	NA	**495**	NA	NA	NA	NA	NA	**191**	**504**	**689**	NA	NA	NA	NA	**122**	109	10,000

Notes:
All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million.
ND=Indicates the compound was analyzed for but not detected.
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given

Bold indicates detection over Part 375 Track 1 Limits

Bold, Boxed, and Colored indicates detection over Part 375 Track 4 Limits

*6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*
EP-X is a duplicate of EP-5

TABLE 7 (Page 2 of 3)

Validated Analytical Results for Metals in Soil Samples
Lebanon West Farms Farms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-8	EP-9	EP-10	EP-11	EP-12	EP-13	EP-14	EP-15	EP-16	EP-17	EP-18	EP-19	EP-20	EP-21	EP-22	EP-23	EP-24	EP-25	Part 375 - Track 1 Soil Cleanup Objectives*	Track 4 Site Specific Soil Cleanup Objectives**
Sample Depth[1]	2 ft	2 ft	2 ft	2 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	10 ft	5 ft	5 ft	10 ft	5 ft		
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Date Sampled	12/6/2012	12/6/2012	12/6/2012	12/6/2012	2/20/2013	3/6/2013	3/6/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	4/16/2013	6/12/2013	6/12/2013	6/12/2013	6/12/2013		
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Metals																				
Aluminum	11,400	14,200	11,900	9,630	8,888	3,530	6,250	18,000 J	8,720 J	13,200 J	7,220 J	5,130 J	8,260 J	5,920 J	15,500 J	18,400 J	10,200 J	10,400 J	NVG	NVG
Antimony	<2.3	<2.3	<2.2	<2.3	<2.2	<2.4	<2.2	<2.3 UJ	<2.2 UJ	<2.4 UJ	<2.4 UJ	<2.3 UJ	<2.4 UJ	<2.4 UJ	<2.3 UJ	<2.2 UJ	<2.5 UJ	<2.4 UJ	NVG	NVG
Arsenic	2.3	3.9	2.5	5.5	<2.2	<2.4	<2.2	2.4	2.4	3.5	<2.4	<2.3	2.6	<2.4	<3.0	<2.2	2.9	3.4	13	16
Barium	47.2	77.6	94.2	165	87.3	<24	93.8	230	85.2	172	76.4	47.2	90.8	50.9	266	**389**	119	109	350	400
Beryllium	0.46	0.91	0.56	0.81	0.36	<0.24	<0.22	0.66	0.31	0.50	0.26	<0.23	0.31	<0.24	<0.93	1.0	0.57	0.59	7.2	590
Cadmium	<0.57	<0.58	<0.54	0.94	<0.54	<0.60	<0.55	0.58	<0.56	<0.60	<0.60	<0.57	<0.59	<0.60	<0.63	<0.54	<0.62	<0.59	2.5	9
Calcium	1,680	2,300	4,440	15,900	1,660	1,840	1,020	5,020 J	5,190 J	8,950 J	3,360 J	2,800 J	5,280 J	3,130 J	7,920	7,190	7,590	16,600	NVG	NVG
Chromium	23.8	24.1	**31.8**	**30.3**	29.9	14.4	22.6	**51.6**	22.6	**32.4**	20.4	16.2	23.4	17.7	**55.5**	**62.9**	29.8	25.5	30	NVG
Cobalt	<5.7	6.4	6.2	10.8	8.4	<6.0	<5.5	12.9	7.0	8.2	6.0	<5.7	6.6	<6.0	10.8	13.3	7.6	6.3	NVG	NVG
Copper	8.7	19.8	20.6	**95.9**	27.0	19.0	30.2	36.4	28.7	43.4	23.6	23.1	26.7	21.5	**70.3**	**52.2**	32.0	43.3	50	270
Iron	12,300	18,300	18,100	24,100	12,800	11,400	9,850	30,400	15,500	18,500	11,000	7,670	13,500	9,310	25,700 J	30,200 J	15,500 J	15,400 J	NVG	NVG
Lead	30.6	61	**87.6**	**282**	10.8	<2.4	2.8	58.3	**83.0**	**217**	**67.6**	21.0	**96.7**	36.7	**105**	23.9	**68.4**	**74.5**	63	1,000
Magnesium	1,550	2,980	2,360	5,550	2,550	1,700	1,880	8,740	2,850	4,440	2,270	2,000	2,890	2,230	8,000	11,900	4,180	9,980	NVG	NVG
Manganese	95.7	399	140	355	141	141	192	476	218	290	198	89.2	221	126	322 J	443 J	242 J	215 J	1,600	10,000
Mercury	<0.039	0.079	<0.038	**0.38**	<0.037	<0.035	<0.035	0.14	0.080	**0.31**	0.078	<0.036	0.079	0.045	<0.038	<0.036	0.090	0.098	0.18	3
Nickel	9.2	15	14	26.5	19.2	11.3	13.8	**32.3**	16.7	20.5	13.7	12.2	14.9	13.0	**41.6**	**38.4**	17.8	17.6	30	310
Potassium	<1,100	<1,200	<1,100	1,280	1,280	<1,200	<1,100	6,550	1,620	2,240	<1,200	1,260	1,250	1,310	6,190 J	11,100 J	2,040 J	2,700 J	NVG	NVG
Selenium	<2.3	<2.3	<2.2	<2.3	<2.2	<2.4	<2.2	<2.3	<2.2	<2.4	<2.4	<2.3	<2.4	<2.4	<2.3	<2.2	<2.5	<2.4	4	1,500
Silver	<0.57	0.61	<0.54	1	<0.54	<0.60	<0.55	<0.58	<0.56	<0.60	<0.60	<0.57	<0.59	<0.60	1.1	1.4	<0.62	0.62	2	1,500
Sodium	<1,100	<1,200	<1,100	<1,100	<1,100	<1,200	<1,100	<1,200	<1,100	<1,200	<1,200	<1,100	<1,200	<1,200	<1,200 UJ	<1,100 UJ	<1,200 UJ	<1,200 UJ	NVG	NVG
Thallium	<1.1	<1.2	<1.1	<1.1	<1.1	<1.2	<1.1	<1.2	<1.1	<1.2	<1.2	<1.1	<1.2	<1.2	<1.2	<1.1	<1.2	<1.2	NVG	NVG
Vanadium	25.4	29.7	31.2	51.3	32.8	25.3	24.1	53.4	23.1	33.1	20.1	15.2	23.4	18.3	45.3	60.2	28.1	27.3	NVG	NVG
Zinc	50.7	60.8	**118**	**533**	29.2	13.1	19.1	96.1	74.7	**136**	62.8	29.7	81.7	45.4	**473**	93.6	94.1	108	109	10,000

Notes:

All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million.

Bold indicates detection over Part 375 Track 1 Limits

ND=Indicates the compound was analyzed for but not detecte

NA=Not Applicable

J=Analyte detected below quantitation limits

NVG=No value given

UJ=The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

*6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

TABLE 7 (Page 3 of 3)

Validated Analytical Results for Metals in Soil Samples
Lebanon West Farms Farms
1160 Lebanon Street, Bronx, New York

Sample ID	EP-26	EP-27	EP-28	EP-29	EP-XX	EP-30	EP-31	EP-32	EP-33	EP-34	EP-35	Field Blank	Field Blank	Field Blank	Field Blank	Part 375 - Track 1	Track 4
Sample Depth[1]	5 ft	10 ft	5 ft	5 ft	5 ft	2 ft	2 ft	2 ft	2 ft	2 ft	2 ft	NA	NA	NA	NA	Soil Cleanup	Site Specific
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Aqueous	Aqueous	Aqueous	Aqueous	Objectives*	Soil Cleanup
Date Sampled	6/12/2013	6/12/2013	6/12/2013	6/12/2013	6/12/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	6/17/2013	12/6/2012	4/16/2013	6/12/2013	6/17/2013		Objectives**
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	ug/L	ug/L	ug/L	ug/L	mg/Kg	mg/Kg
Metals																	
Aluminum	9,770 J	9,620 J	15,100 J	8,630 J	10,800 J	8,380 J	9,820 J	11,400 J	11,300 J	8,580 J	10,100 J	<200	<200	<200	<200 UJ	NVG	NVG
Antimony	<2.4 UJ	<2.3 UJ	<2.2 UJ	<2.3 UJ	<2.4 UJ	<2.3 UJ	<2.4 UJ	<2.2 UJ	<2.4 UJ	<2.2 UJ	<2.2 UJ	<6.0	<6.0	<6.0	<6.0	NVG	NVG
Arsenic	3.7	2.7	3.3	<2.3	3	2.6	11.3	3.6	3.9	3.5	4	<3.0	<3.0	<3.0	<3.0	13	16
Barium	124	104	156	89.4	119	83.9 J	234 J	137 J	153 J	274 J	179 J	<200	<200	<200 UJ	<200 UJ	350	400
Beryllium	0.65	0.57	0.76	0.52	0.61	0.33 J	0.6 J	0.45 J	0.44 J	0.34 J	0.47 J	<1.0	<1.0	<1.0	<1.0	7.2	590
Cadmium	<0.61	<0.58	<0.56	<0.56	<0.59	<0.57	1.1	<0.56	<0.60	1.3	<0.56	<3.0	<3.0	<3.0	<3.0	2.5	9
Calcium	43,100	7,410	4,980	56,400	16,400	6,130 J	21,200 J	9,260 J	7,950 J	15,800 J	7,750 J	<5,000	<5,000	<5,000	<5,000 UJ	NVG	NVG
Chromium	**32.6**	27.9	**41.7**	13.8	27.7	23 J	**39 J**	**40.5 J**	29.3 J	19.3 J	28.5 J	<10	<10	<10	<10	30	NVG
Cobalt	<6.1	6.7	9.3	<5.6	7.7	7.3	11.9	8.5	8.4	8.7	10.2	<50	<50	<50	<50	NVG	NVG
Copper	**106**	29.6	**80.1**	**92.8**	43.8	25.1 J	**168 J**	39.6 J	45.2 J	**1,110 J**	40.9 J	<10	<10	<10	<10	50	270
Iron	20,800 J	15,100 J	21,600 J	11,900 J	16,900 J	11,400 J	52,300 J	14,300 J	19,200 J	23,400 J	22,000 J	<100	<100	<100 UJ	<100 UJ	NVG	NVG
Lead	**108**	**67.9**	47.6	**141**	**71.9**	**82.2**	**498**	**167**	**200**	**667**	**423**	<3.0	<3.0	<3.0	<3.0	63	1,000
Magnesium	25,300	3,640	6,740	36,700	9,880	2,760	4,890	4,150	3,380	3,870	5,110	<5,000	<5,000	<5,000	<5,000 UJ	NVG	NVG
Manganese	251 J	255 J	332 J	159 J	237 J	208 J	449 J	307 J	311 J	308 J	296 J	<15	<15	<15	<15	1,600	10,000
Mercury	**0.45**	0.079	0.15	**0.27**	0.15	0.13	0.16	0.1	0.14	0.18	0.13	<0.20	<0.20	<0.20	<0.20	0.18	3
Nickel	29.2	15.9	27.2	13.7	20.4	15	**43.2**	**30.1**	19.7	23.5	29.1	<10	<10	<10	<10	30	310
Potassium	2,390 J	1,740 J	3,950 J	2,460 J	2,860 J	1,530	1,650	2,970	1,650	1,550	3,250	<10,000	<10,000	<10,000 UJ	<10,000 UJ	NVG	NVG
Selenium	<2.4	<2.3	<2.2	<2.3	<2.4	<2.3	<2.4	<2.2	<2.4	<2.2	<2.2	<10	<10	<10	<10	4	1,500
Silver	0.66	<0.58	0.87	0.59	0.62	<0.57	<0.60	<0.56	<0.60	<0.55	<0.56	<10	<10	<10	<10	2	1,500
Sodium	<1,200 UJ	<1,200 UJ	<1,100 UJ	<1,100 UJ	<1,200 UJ	<1,100	<1,200	<1,100	<1,200	<1,100	<1,100	<10,000	<10,000	<10,000	<10,000	NVG	NVG
Thallium	<1.2	<1.2	<1.1	<1.1	<1.2	<1.1	<1.2	<1.1	<1.2	<1.1	<1.1	<2.0	<2.0	<2.0	<2.0	NVG	NVG
Vanadium	22.4	26.4	40.4	16.1	28.4	28.2	64.6	30.7	30.6	70.8	34.9	<50	<50	<50	<50	NVG	NVG
Zinc	**178**	96.2	**158**	**144**	**115**	83.2	**364**	**125**	**171**	**385**	**263**	<20	<20	<20	<20	109	10,000

Notes:
All concentrations are reported in milligrams per kilogram (mg/kg) or parts per million.
ND=Indicates the compound was analyzed for but not detected
NA=Not Applicable
J=Analyte detected below quantitation limits
NVG=No value given

*6 NYCRR Part 375; Subparts 375-1 to 375-4 & 375-6;
Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

***Track 4 Site Specific Soil Cleanup Objectives, Remedial Action Work Plan, July 2011.*

Bold indicates detection over Part 375 Track 1 Limits

Bold, Boxed, and Colored indicates detection over Part 375 Track 4 Limits

UJ=The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Table 8
Validated Analytical Results for Volatile Organic Compounds in Sub-Slab Vapor Samples
Lebanon West Farms
1160 Lebanon Street
Bronx, NY

Sample ID	SSV-1	SSV-2	SSV-3	SSV-4	SSV-5	SSV-6	SSV-7	SSV-8	SSV-9	SSV-X
Matrix	Sub-Slab Vapor	Sub-Slab Vapor	Sub-Slab Vapor	Sub-Slab Vapor	Sub-Slab Vapor	Sub-Slab Vapor	Sub-Slab Vapor	Sub-Slab Vapor	Sub-Slab Vapor	Sub-Slab Vapor
Date Sampled	5/7/2014	5/7/2014	5/7/2014	5/7/2014	5/7/2014	5/7/2014	5/7/2014	5/7/2014	5/7/2014	5/7/2014
Volatile Organic Compounds										
Units	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
1,1,1-Trichloroethane	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
1,2,4-Trimethylbenzene	2.48	4.44	3.29	NA	5.41	NA	ND	7.33	ND	3.01
1,2-Dibromoethane	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	NA	1.29	NA	ND	1.87	ND	ND
1,3-Butadiene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
1,4-Dioxane	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
2,2,4-Trimethylpentane	1.35	ND	ND	NA	1.1	NA	87.3	ND	ND	1.56
2-Butanone	1.86	1.05	0.74	NA	4.48	NA	ND	2.83	ND	2.27
2-Hexanone	ND	ND	ND	NA	2.18	NA	ND	ND	ND	ND
3-Chloropropene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
4-Ethyltoluene	ND	ND	ND	NA	0.993	NA	ND	1.48	ND	ND
4-Methyl-2-pentanone	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Acetone	19.1	7.36	4.09	NA	28.5	NA	316	5.75	ND	21
Benzene	0.818	ND	ND	NA	0.974	NA	ND	0.859	ND	0.923
Benzyl chloride	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Bromoform	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Bromomethane	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Carbon disulfide	ND	0.803	ND	NA	ND	NA	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Chloroethane	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Chloroform	1.31	1.91	ND	NA	2.12	NA	ND	3.51	ND	1.32
Chloromethane	1.47	0.498	ND	NA	1.58	NA	ND	0.413	ND	1.49
cis-1,2-Dichloroethene	ND	ND	ND	NA	ND	NA	ND	0.793	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND	NA	ND	NA	ND	0.908	ND	ND
Cyclohexane	2.71	ND	ND	NA	3.33	NA	764	0.688	ND	2.91
Dibromochloromethane	ND	ND	ND	NA	ND	NA	ND	1.7	ND	ND
Dichlorodifluoromethane	2.04 J	2.23 J	2.44 J	NA	2.55 J	NA	ND UJ	1.99 J	ND UJ	1.86 J
Ethanol	23	ND	ND	NA	82	NA	ND	6.16	ND	22.6
Ethyl Acetate	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Ethylbenzene	1.85	1.93	1.85	NA	1.69	NA	ND	2.76	ND	1.89
Freon-113	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Freon-114	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Heptane	2.98	ND	ND	NA	9.71	NA	65.6	ND	ND	3.25
Hexachlorobutadiene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Isopropanol	3.27	ND	ND	NA	4.06	NA	ND	1.49	ND	3.37
Methyl tert butyl ether	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Methylene chloride	4.48	ND	ND	NA	ND	NA	ND	ND	ND	ND
n-Hexane	12	2.47	ND	NA	2.56	NA	121	ND	ND	12.7
o-Xylene	3.68	4.22	4.47	NA	3.53	NA	ND	5.34	ND	3.55
p/m-Xylene	7.43	8.38	8.82	NA	7.3	NA	ND	11.3	ND	7.64
Styrene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Tertiary butyl Alcohol	1.77	ND	ND	NA	11.6	NA	ND	ND	ND	1.88
Tetrachloroethene	ND	2.68	1.46	NA	1.68	NA	23.9	2.96	ND	ND
Tetrahydrofuran	ND	ND	ND	NA	ND	NA	ND	0.902	ND	ND
Toluene	3.84	2.98	1.53	NA	50.9	NA	12.9	7.31	8.14	4.37
trans-1,2-Dichloroethene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
trans-1,3-Dichloropropene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Trichlorofluoromethane	1.46	1.72	1.4	NA	1.75	NA	12	1.54	ND	1.48
Vinyl bromide	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND
Vinyl chloride	ND	ND	ND	NA	ND	NA	ND	ND	ND	ND

Notes:
NA- Not analyzed due to the limited amount of volume.
SSV-X is the duplicate sample of SSV-1.
ND- Not detected at or above laboratory detection limits.
ug/m^3 - micrograms per cubic meters
J - Value is an estimated number
UJ - Analyte was not detected above the reporting limit but quantitation limit is approximate

Table 9

Pre - Remediation Validated Analytical Results of Volatile Organic Compounds In Groundwater Samples
Lebanon West Farms I and II
1160 Lebanon Street, 1172 and 1175 East Tremont Avenue
Bronx, New York

Sample ID	MW-1	MW-2	MW-3	MW-4	MW-5	MW-XX	Field Blank	Trip Blank	NYSDEC
Matrix	groundwater	groundwater	groundwater	groundwater	groundwater	groundwater	aqueous	aqueous	TOGS**
Date Sampled	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	
VOCs via EPA Method 8260									
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	50
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	1
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	5
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	ND	50
Bromoform	ND	ND	ND	ND	ND	ND	ND	ND	50
Bromomethane	ND	ND	ND	ND	ND	ND	ND	ND	5
2-Butanone (MEK)	ND R	ND R	ND R	ND R	ND R	ND R	ND R	ND R	50
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	5
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	5
Chloroform	0.40 J	ND	ND	ND	0.76 J	0.75 J	ND	ND	7
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	NVG
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	ND	0.04
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	ND	50
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	ND	NVG
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	3
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	3
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	3
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	0.6
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	5
cis-1,2-Dichloroethene	**5.4**	2.6	ND	ND	ND	ND	ND	ND	5
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	ND	1
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	0.4
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	ND	0.4
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	ND	NVG
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	5
Freon 113	ND	ND	ND	ND	ND	ND	ND	ND	NVG
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	ND	50
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	5
Methyl Acetate	ND	ND	ND	ND	ND	ND	ND	ND	NVG
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	NVG
Methyl Tert Butyl Ether	**15.0**	1.5	ND	1.2	ND	ND	ND	ND	10
4-Methyl-2-pentanone(MIBK)	ND	ND	ND	ND	ND	ND	ND	ND	NVG
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	5
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	ND	5
Tetrachloroethene	ND	**30.7**	0.91 J	1.1	1.0	1.1	ND	ND	5
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	5
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	5
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	1
Trichloroethene	0.36 J	**6.6**	0.57 J	ND	ND	ND	ND	ND	5
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	ND	5
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	ND	2
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	5
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	5
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	ND	5

Notes:

All concentrations are reported in micrograms per liter (ug/L) or parts per billion.

J - Indicates an etimated value

R - The presence or absence of the analyte cannot be verified.

NVG - No Value Given

ND - Not detected at or above reporting limits

Boxed and bold indicates exceedance of groundwater standards or guidance values

MW-XX - Duplicate for MW-5

*NYSDEC Technical and Operational Guidance Series (1.1.1) Ambient water Quality Standards and Guidance Values and Groundwater Effluent Limitations June 1998

Table 10

Pre - Remediation Validated Analytical Results of Semi Volatile Organic Compounds In Groundwater Samples
Lebanon West Farms I and II
1160 Lebanon Street, 1172 and 1175 East Tremont Avenue
Bronx, New York

Sample ID	MW-1	MW-2	MW-3	MW-4	MW-5	MW-XX	Field Blank	NYSDEC
Matrix	groundwater	groundwater	groundwater	groundwater	groundwater	groundwater	aqueous	TOGS**
Date Sampled	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	
SVOCs via EPA Method 8270								
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG
4-Chloro-3-methyl phenol	ND	ND	ND	ND	ND	ND	ND	NVG
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	5
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	50
2,4-Dinitrophenol	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	10
4,6-Dinitro-o-cresol	ND	ND	ND	ND	ND	ND	ND	NVG
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	1
3&4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	1
2-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	NVG
4-Nitrophenol	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	NVG
Pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG
Phenol	ND	ND	ND	ND	ND	ND	ND	1
2,3,4,6-Tetrachlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG
2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	NVG
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	20
Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	NVG
Acetophenone	ND	ND	ND	ND	ND	ND	ND	NVG
Anthracene	ND	ND	ND	ND	ND	ND	ND	50
Atrazine	ND	ND	ND	ND	ND	ND	ND	7.5
Benzaldehyde	ND	ND	ND	ND	ND	ND	ND	NVG
Benzo(a)anthracene	ND	ND	ND	ND	ND	ND	ND	0.002
Benzo(a)pyrene	ND	ND	ND	ND	ND	ND	ND	NVG
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	ND	ND	0.002
Benzo(g,h,i)perylene	ND	ND	ND	ND	ND	ND	ND	NVG
Benzo(k)fluoranthene	ND	ND	ND	ND	ND	ND	ND	0.002
4-Bromophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	NVG
Butyl benzyl phthalate	ND	ND	ND	ND	ND	ND	ND	50
1,1'-Biphenyl	ND	ND	ND	ND	ND	ND	ND	5
2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND	10
4-Chloroaniline	ND	ND	ND	ND	ND	ND	ND	5
Carbazole	ND	ND	ND	ND	ND	ND	ND	NVG
Caprolactam	ND	ND	ND	ND	ND	ND	ND	NVG
Chrysene	ND	ND	ND	ND	ND	ND	ND	0.002
bis(2-Chloroethoxy)methane	ND	ND	ND	ND	ND	ND	ND	5
bis(2-Chloroethyl)ether	ND	ND	ND	ND	ND	ND	ND	1
bis(2-Chloroisopropyl)ether	ND	ND	ND	ND	ND	ND	ND	NVG
4-Chlorophenyl phenyl ether	ND	ND	ND	ND	ND	ND	ND	NVG
2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	5
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	5
3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	5
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	NVG
Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	NVG
Di-n-butyl phthalate	ND	ND	ND	ND	ND	ND	ND	50
Di-n-octyl phthalate	ND	ND	ND	ND	ND	ND	ND	50
Diethyl phthalate	ND	ND	ND	ND	ND	ND	ND	50
Dimethyl phthalate	ND	ND	ND	ND	ND	ND	ND	50
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	ND	5
Fluoranthene	ND	ND	ND	ND	ND	ND	ND	50
Fluorene	ND	ND	ND	ND	ND	ND	ND	50
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	0.04
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND	0.5
Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	ND	ND	5
Hexachloroethane	ND	ND	ND	ND	ND	ND	ND	5
Indeno(1,2,3-cd)pyrene	ND	ND	ND	ND	ND	ND	ND	0.002
Isophorone	ND	ND	ND	ND	ND	ND	ND	50
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	NVG
2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	5
3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	5
4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	5
Naphthalene	ND	ND	ND	ND	ND	ND	ND	10
Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	0.4
N-Nitroso-di-n-propylamine	ND	ND	ND	ND	ND	ND	ND	NVG
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	ND	50
Phenanthrene	ND	ND	ND	ND	ND	ND	ND	50
Pyrene	ND	ND	ND	ND	ND	ND	ND	50
1,2,4,5-Tetrachlorobenzene	ND	ND	ND	ND	ND	ND	ND	NVG

Notes:
All concentrations are reported in micrograms per liter (ug/L) or parts per billion.
NVG - No Value Given
ND - Not detected at or above reporting limits

*NYSDEC Technical and Operational Guidance Series (1.1.1) Ambient water Quality Standards and Guidance Values and Groundwater Effluent Limitations June 1998

MW-XX - Duplicate for MW-5

Table 11

Pre - Remediation Validated Analytical Results of Pesticides In Groundwater Samples
Lebanon West Farms I and II
1160 Lebanon Street, 1172 and 1175 East Tremont Avenue
Bronx, New York

Sample ID	MW-1	MW-2	MW-3	MW-4	MW-5	MW-XX	Field Blank	NYSDEC
Matrix	groundwater	groundwater	groundwater	groundwater	groundwater	groundwater	aqueous	TOGS**
Date Sampled	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	
Pesticides via EPA Method 8081								
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Aldrin	ND	ND	ND	ND	ND	ND	ND	NVG
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	0.01
beta-BHC	ND	ND	ND	ND	ND	ND	ND	0.04
delta-BHC	ND	ND	ND	ND	ND	ND	ND	0.04
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	0.05
alpha-Chlordane	ND	ND	ND	ND	ND	ND	ND	0.05
gamma-Chlordane	ND	ND	ND	ND	ND	ND	ND	0.05
Dieldrin	ND	ND	ND	ND	ND	ND	ND	0.004
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	0.3
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	0.2
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	0.2
Endrin	ND	ND	ND	ND	ND	ND	ND	NVG
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	NVG
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	5
Endrin ketone	ND	ND	ND	ND	ND	ND	ND	5
Endosulfan-I	ND	ND	ND	ND	ND	ND	ND	NVG
Endosulfan-II	ND	ND	ND	ND	ND	ND	ND	NVG
Heptachlor	ND	ND	ND	ND	ND	ND	ND	0.04
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	0.03
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	35
Toxaphene	ND	ND	ND	ND	ND	ND	ND	0.06

Notes:

All concentrations are reported in micrograms per liter (ug/L) or parts per billion.

MW-XX - Duplicate for MW-5

NVG - No Value Given

ND - Not detected at or above reporting limits

*NYSDEC Technical and Operational Guidance Series (1.1.1) Ambient water Quality Standards and Guidance Values and Groundwater Effluent Limitations June 1998

Table 12

Pre - Remediation Validated Analytical Results of PCBs In Groundwater Samples

Lebanon West Farms I and II

1160 Lebanon Street, 1172 and 1175 East Tremont Avenue

Bronx, New York

Sample ID	MW-1	MW-2	MW-3	MW-4	MW-5	MW-XX	Field Blank	NYSDEC
Matrix	groundwater	groundwater	groundwater	groundwater	groundwater	groundwater	aqueous	TOGS**
Date Sampled	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	
PCBs via EPA Method 8082								
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Aroclor 1016	ND	ND	ND	ND	ND	ND	ND	0.09 *
Aroclor 1221	ND	ND	ND	ND	ND	ND	ND	0.09 *
Aroclor 1232	ND	ND	ND	ND	ND	ND	ND	0.09 *
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	0.09 *
Aroclor 1248	ND	ND	ND	ND	ND	ND	ND	0.09 *
Aroclor 1254	ND	ND	ND	ND	ND	ND	ND	0.09 *
Aroclor 1260	ND	ND	ND	ND	ND	ND	ND	0.09 *

Notes:

All concentrations are reported in micrograms per liter (ug/L) or parts per billion.

MW-XX - Duplicate for MW-5

ND - Not detected at or above reporting limits

**NYSDEC Technical and Operational Guidance Series (1.1.1) Ambient water Quality Standards and Guidance Values and Groundwater Effluent Limitations June 1998

* *Applies to the sum of these compounds*

Table 13

Pre - Remediation Validated Analytical Results of Metals In Groundwater Samples
Lebanon West Farms I and II
1160 Lebanon Street, 1172 and 1175 East Tremont Avenue
Bronx, New York

Sample ID	MW-1	MW-2	MW-3	MW-4	MW-5	MW-XX	Field Blank	NYSDEC
Matrix	groundwater	groundwater	groundwater	groundwater	groundwater	groundwater	aqueous	TOGS**
Date Sampled	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	3/14/2011	
Total Metals								
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	90,700 a	252,000 a	7,860	234	1,640	2,140	<200	NVG
Antimony	<12 UJ	<12 UJ	<6.0 UJ	<6.0 UJ	<6.0 UJ	<6.0 UJ	<6.0 UJ	3
Arsenic	<12 a	24.0 a	<3.0	<3.0	<3.0	<3.0	<3.0	25
Barium	919 b	**2,450 b**	<200	<200	<200	<200	<200	1,000
Beryllium	3.0 b	**14.8 b**	<1.0	<1.0	<1.0	<1.0	<1.0	3
Cadmium	<6.0 b	<6.0 b	<3.0	<3.0	<3.0	<3.0	<3.0	5
Calcium	123,000 b	89,500 b	112,000	138,000	120,000	123,000	<5,000	NVG
Chromium	**236 b**	**556 b**	24.5	<10	<10	<10	<10	50
Cobalt	<100 b	221 b	<50	<50	<50	<50	<50	NVG
Copper	142 b	**426 b**	15.7	<10	10.1	12.1	<10	200
Iron	**144,000 a**	**359,000 a**	**9,830**	**469**	**3,030**	**3640**	<100	300
Lead	**42.8 a**	**3,430 a**	<3.0	<3.0	<3.0	<3.0	<3.0	25
Magnesium	**80,800 b**	**112,000 b**	23,400	24,300	18,200	18,700	<5,000	35,000
Manganese	**4,270 b**	**2,790 b**	**979**	**475**	29.5	38.0	<15	300
Mercury	<0.80 b	<1.6 b	<0.20	<0.20	<0.20	<0.20	<0.20	0.7
Nickel	**195 b**	**550 b**	31.0	<10	11.5	12.5	<10	100
Potassium	47,900 b	117,000 b	10,400	<10,000	<10,000	<10,000	<10,000	NVG
Selenium	<20 b	<20 b	<10	<10	<10	<10	<10	10
Silver	<20 b	<20 b	<10	<10	<10	<10	<10	50
Sodium	**61,800 b**	**32,800 b**	**26,700**	**140,000**	**151,000**	**156,000**	<10,000	20,000
Thallium	<40 a	<40 a	<10	<10	<10	<10	<10	0.5
Vanadium	223 b	621 b	<50	<50	<50	<50	<50	NVG
Zinc	420 b	1,450 b	33.5	<20	<20	<20	<20	2,000
Dissolved Metals								
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Aluminum	<200	<200	<200	<200	<200	<200	NA	NVG
Antimony	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	NA	3
Arsenic	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	NA	25
Barium	<200	<200	<200	<200	<200	<200	NA	1,000
Beryllium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	3
Cadmium	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	NA	5
Calcium	96,800	46,400	122,000	144,000	137,000	138,000	NA	NVG
Chromium	<10	<10	<10	<10	<10	<10	NA	50
Cobalt	<50	<50	<50	<50	<50	<50	NA	NVG
Copper	<10	<10	<10	<10	<10	<10	NA	200
Iron	<100	<100	<100	<100	<100	<100	NA	300
Lead	<3.0	3.1	<3.0	<3.0	<3.0	<3.0	NA	25
Magnesium	34,000	10,600	21,100	24,100	20,300	20,500	NA	35,000
Manganese	**2,180**	153	**943**	**470**	<15	<15	NA	300
Mercury	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	0.7
Nickel	10.8	<10	11.3	<10	<10	<10	NA	100
Potassium	11,500	11,900	<10,000	<10,000	<10000	<10,000	NA	NVG
Selenium	<10	<10	<10	<10	<10	<10	NA	10
Silver	<10	<10	<10	<10	<10	<10	NA	50
Sodium	**61,300**	**30,200**	**28,500**	**142,000**	**166,000**	**168,000**	NA	20,000
Thallium	<10	<10	<10	<10	<10	<10	NA	0.5
Vanadium	<50	<50	<50	<50	<50	<50	NA	NVG
Zinc	<20	<20	<20	<20	<20	<20	NA	2,000

Notes:
All concentrations are reported in milligrams per liter (mg/L) or parts per million.
MW-XX - Duplicate for MW-5
ND - Not detected at or above reporting limits
NVG - No Value Given
NA - Not Applicable
b - elevated sample detected due to difficult sample matrix

**NYSDEC Technical and Operational Guidance Series (1.1.1) Ambient water Quality Standards and Guidance Values and Groundwater Effluent Limitations June 1998

a - elevated detection limit due to dilution required for high interfering element

Boxed and bold indicates exceedance of groundwater standards or guidance values

Table 14

Post - Remediation Validated Analytical Results of Volatile Organic Compounds In Groundwater Samples
Lebanon West Farms I and II
1160 Lebanon Street, 1172 and 1175 East Tremont Avenue
Bronx, New York

Sample ID	MW-2	MW-6	MW-7	MW-8	MW-XXX	Field Blank	Trip Blank	NYSDEC
Matrix	groundwater	groundwater	groundwater	groundwater	groundwater	aqueous	aqueous	TOGS**
Date Sampled	7/10/2014	7/10/2014	7/10/2014	7/10/2014	7/10/2014	7/10/2014	7/10/2014	
VOCs via EPA Method 8260								
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Acetone	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	ND UJ	50
Benzene	ND	ND	ND	ND	ND	ND	ND	1
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND	5
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND	50
Bromoform	ND	ND	ND	ND	ND	ND	ND	50
Bromomethane	ND	ND	ND	ND	ND	ND	ND	5
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	ND	50
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	NVG
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	5
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND	5
Chloroethane	ND	ND	ND	ND	ND	ND	ND	5
Chloroform	ND	0.27 J	ND	ND	ND	ND	ND	7
Chloromethane	ND	ND	ND	ND	ND	ND	ND	NVG
Cyclohexane	ND	ND	ND	ND	ND	ND	ND	NVG
1,2-Dibromo-3-chloropropane	ND	ND	ND	ND	ND	ND	ND	0.04
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND	50
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND	NVG
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	3
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	3
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	3
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND	5
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	0.6
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	5
cis-1,2-Dichloroethene	**6.6**	ND	0.41 J	0.70 J	**6.7**	ND	ND	5
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	5
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND	1
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	0.4
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND	0.4
1,4-Dioxane	ND	ND	ND	ND	ND	ND	ND	NVG
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	5
Freon 113	ND	ND	ND	ND	ND	ND	ND	NVG
2-Hexanone	ND	ND	ND	ND	ND	ND	ND	50
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND	5
Methyl Acetate	ND	ND	ND	ND	ND	ND	ND	NVG
Methylcyclohexane	ND	ND	ND	ND	ND	ND	ND	NVG
Methyl Tert Butyl Ether	1.3	ND	ND	0.99 J	1.3	ND	ND	10
4-Methyl-2-pentanone(MIBK)	ND	ND	ND	ND	ND	ND	ND	NVG
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	5
Styrene	ND	ND	ND	ND	ND	ND	ND	5
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND	5
Tetrachloroethene	**67.8**	ND	2.7	ND	**65.8**	ND	ND	5
Toluene	ND	ND	ND	ND	ND	ND	ND	5
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	5
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND	5
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	5
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	1
Trichloroethene	**19.9**	ND	ND	0.58 J	**19.6**	ND	ND	5
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND	5
Vinyl chloride	ND	ND	ND	ND	ND	ND	ND	2
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	5
o-Xylene	ND	ND	ND	ND	ND	ND	ND	5
Xylene (total)	ND	ND	ND	ND	ND	ND	ND	5

Notes:

All concentrations are reported in micrograms per liter (ug/L) or parts per billion.

J - Indicates an etimated value

UJ - Th analyte was not detected above the reported sample quantitation limit.

*NYSDEC Technical and Operational Guidance Series (1.1.1) Ambient water Quality Standards and Guidance Values and Groundwater Effluent Limitations June 1998

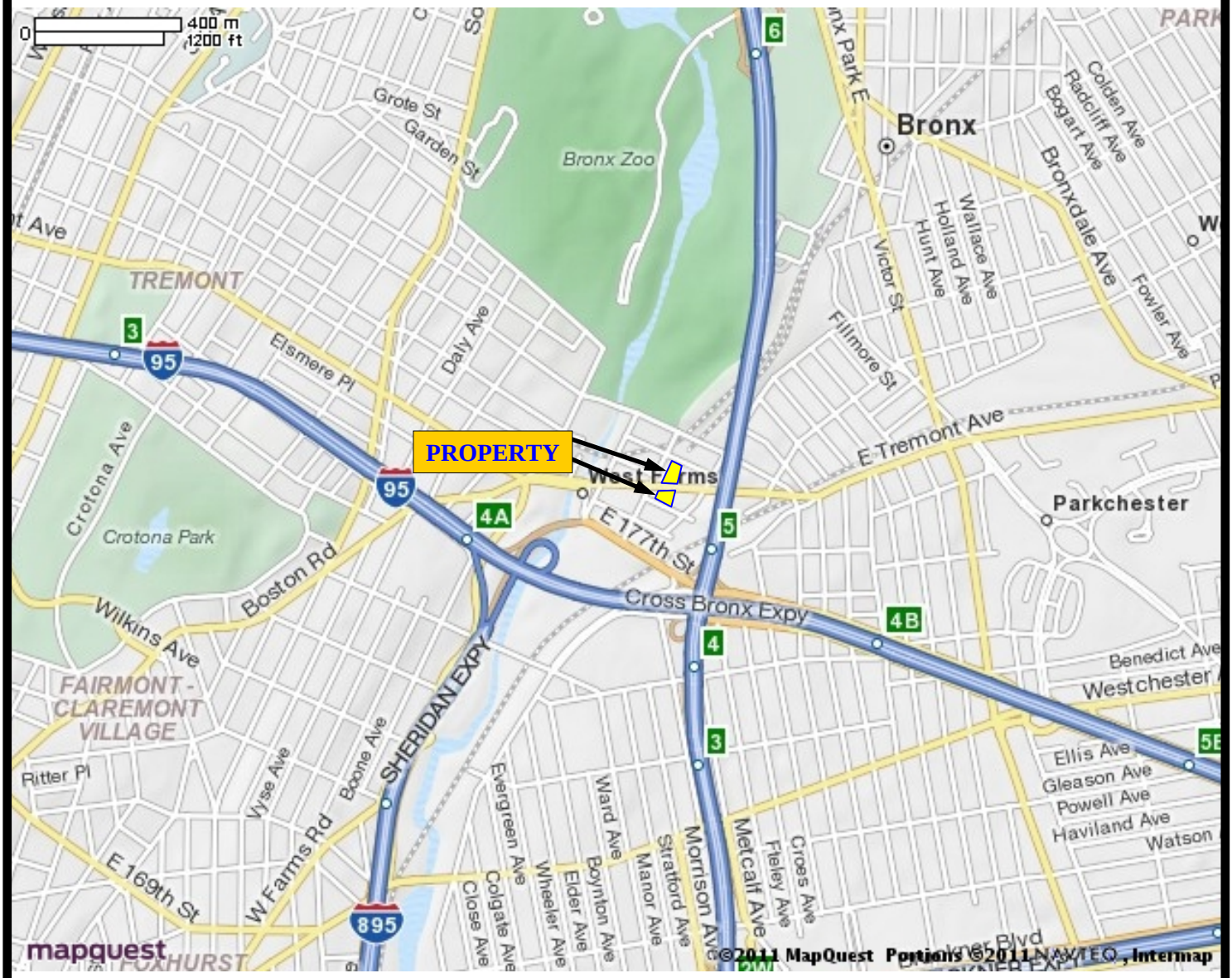
NVG - No Value Given

MW-XXX - Duplicate for MW-2

ND - Not detected at or above reporting limits

Boxed and bold indicates exceedance of groundwater standards or guidance values

FIGURES



APPROX. SCALE (ft.)

0 12,000 24,000

N

Adapted from Mapquest, 2011

CA RICH CONSULTANTS, INC.
17 Dupont Street,
Plainview, NY 11803

TITLE: **SITE LOCATION MAP**

DATE: **3/28/2011**

SCALE: **AS SHOWN**

FIGURE: **1**

DRAWING:

Lebanon West Farms I and II
1155-1175 E. Tremont Avenue &
1157-1167 E. 178th Street
Bronx, New York

DRAWN BY: **JTC**

APPR. BY: **DS**

North ← → South

SB-1 SB-3 SB-5 SB-7 SB-10

Urban Fill

Silt & Clay

Sand

Silty sand

Elevation in Feet Below Grade

0 2 4 6 8 10 12 14 16

0 50 100 150 190

Distance in Feet

Legend

- Urban fill consisting of sand, brick, and concrete pieces
- Sand
- Silty clay
- Silty sand

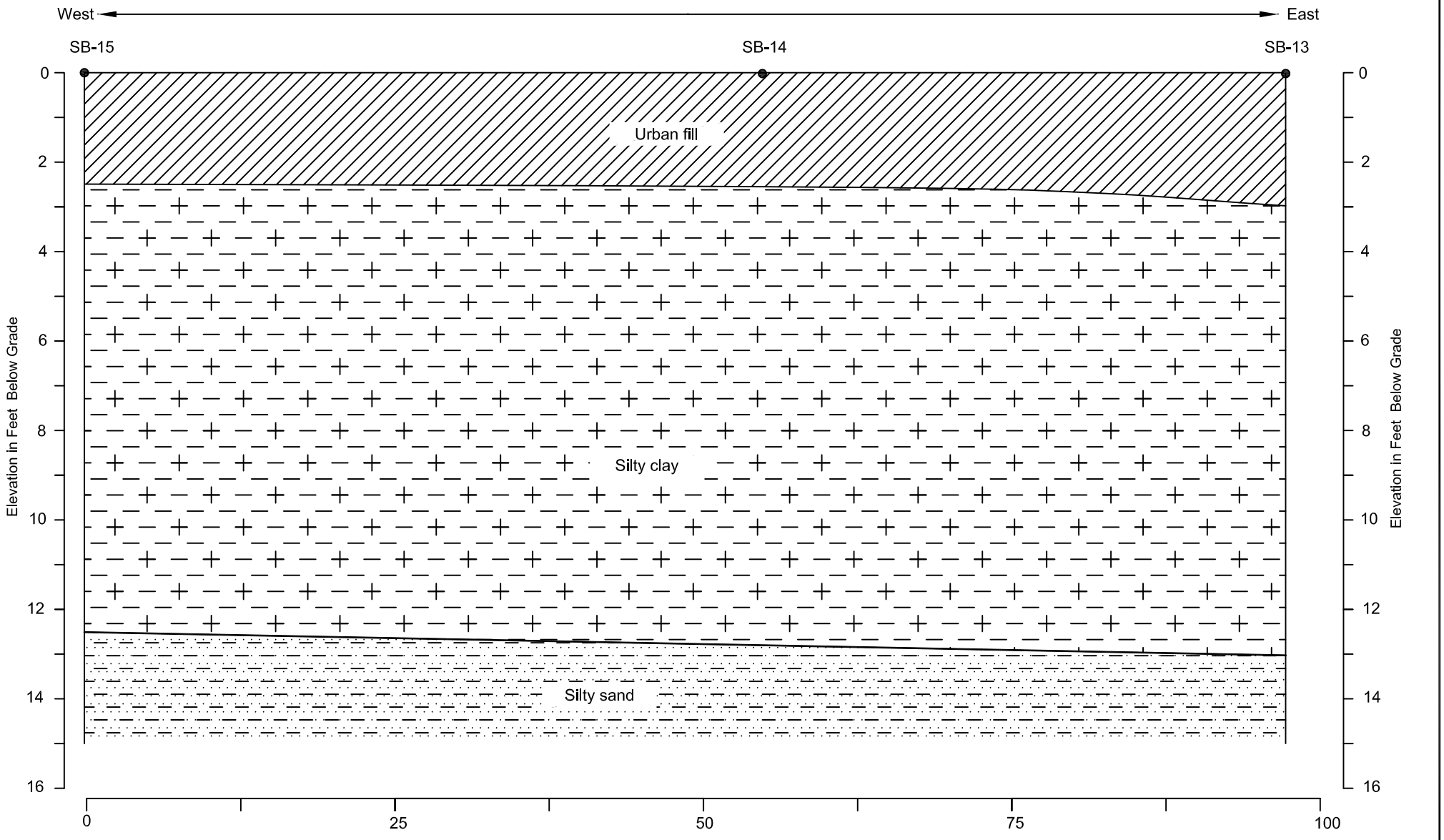
Notes:
1) Surface elevation data is not available for the soil borings in the cross-section. However, site wide topography is relatively flat.
2) All soil borings completed to a terminal depth of 15 feet below grade.

0 / 0 — 12.5' / 1'

12.5 x Vertical Exageration

CA RICH CONSULTANTS, INC.
Environmental Specialists Since 1982
17 Dupont Street, Plainview, New York 11803

TITLE: Geologic Cross-Section for Lebanon West Farms I	DATE: 5/3/2011
	SCALE: AS SHOWN
FIGURE: 2a	Lebanon West Farms I and II 1160 Lebanon Street & 1172 & 1175 E. Tremont Ave Bronx, New York
DRAWING NO: 2011-21	DRAWN BY: J.T.C.
	APPR. BY: D.S.



Legend

- Urban fill consisting of sand, brick, and concrete pieces
- Silty clay
- Silty sand

Notes:
1) Surface elevation data is not available for the soil borings in the cross-section. However, site wide topography is relatively flat.
2) All soil borings completed to a terminal depth of 15 feet below grade.

0
0 5'
1'
5 x Vertical Exageration

CA RICH CONSULTANTS, INC.
Environmental Specialists Since 1982
17 Dupont Street, Plainview, New York 11803

TITLE: Geologic Cross-Section for Lebanon West Farms II		DATE: 5/3/2011
		SCALE: AS SHOWN
FIGURE: 2b	Lebanon West Farms I and II 1160 Lebanon Street & 1172 & 1175 E. Tremont Ave Bronx, New York	DRAWN BY: J.T.C.
DRAWING NO: 2011-22		APPR. BY: D.S.

BRONX PARK AVENUE

EAST TREMONT AVENUE

EAST 178th STREET

LEBANON STREET

Trees

Building 1

Building 2

Building 3

Courtyard

Parking Lot

MW-2

MW-6

MW-7

MW-8

12.19

12.35

12.55

10.48

10.50

10.75

11.00

11.25

11.50

11.75

12.00

12.25

Groundwater Flow Direction

0 20 40 60

Graphic Scale in Feet

Well ID	Elevation Top of Casing (in feet)	Depth to Water (in feet)	Elevation of Water Table (in feet)
MW-2	25.63	13.08	12.55
MW-6	23.25	10.90	12.35
MW-7	22.79	10.60	12.19
MW-8	22.24	11.76	10.48

LEGEND

Monitoring Well

12.55 Water Table Elevation (in Feet)

12.00 Water Table Elevation Contour in Feet (Dashed Where Inferred)

CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982

17 Dupont Street, Plainview, New York 11803

TITLE: Groundwater Table Contour Map July 30, 2014

DATE: 9/12/2014

SCALE: AS SHOWN

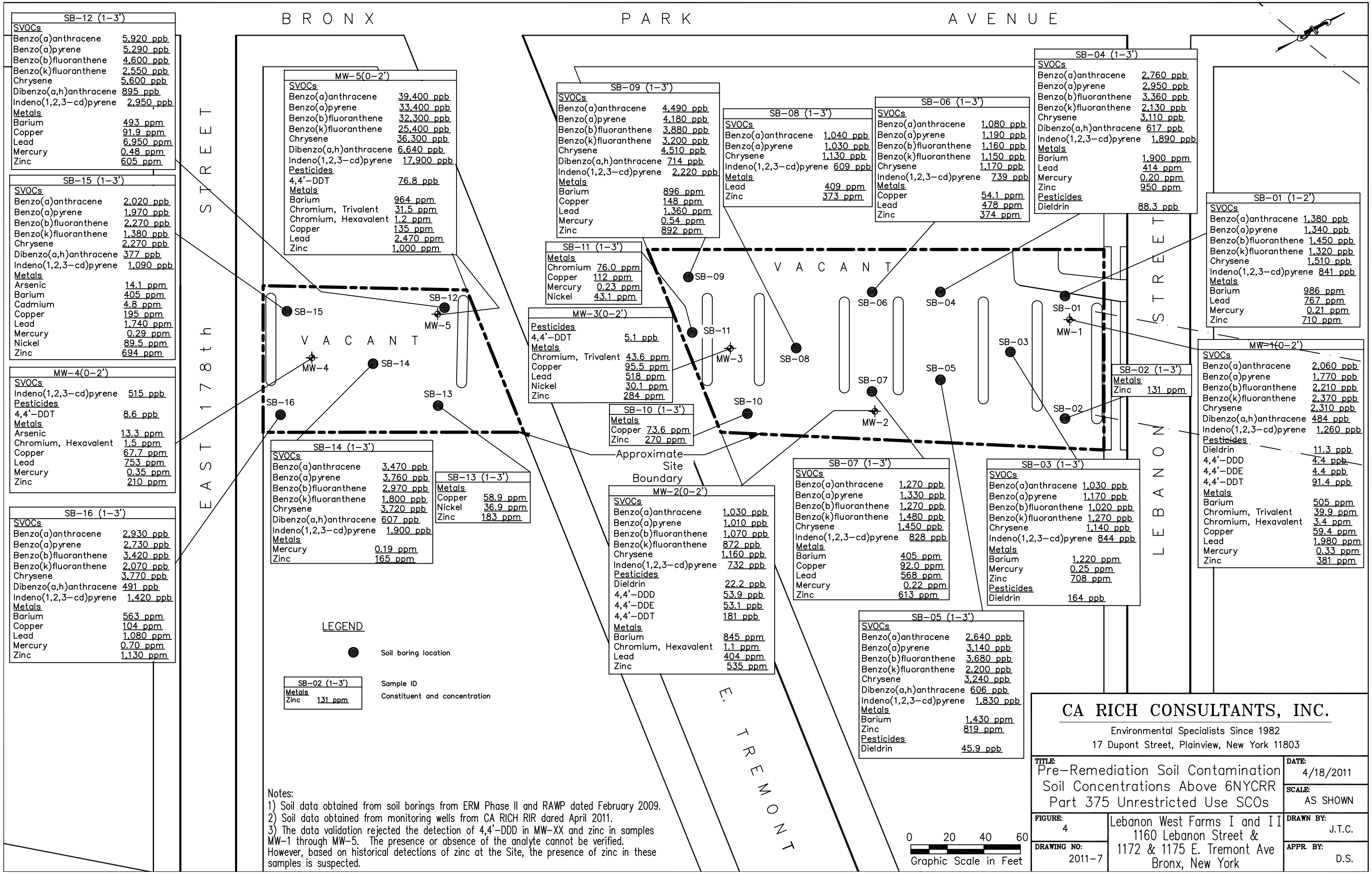
FIGURE: 3

DRAWN BY: T.R.B.

DRAWING NO: 2014-99

APPR. BY: J.P.

Lebanon West Farms I & II
1160 Lebanon Street &
1172 & 1175 E. Tremont Ave
Bronx, New York



CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982

17 Dupont Street, Plainview, New York 11803

TITLE: Pre-Remediation Soil Contamination Soil Concentrations Above 6NYCRR Part 375 Unrestricted Use SCOs	DATE: 4/18/2011
	SCALE: AS SHOWN
FIGURE: 4	DRAWN BY: J.T.C.
DRAWING NO: 2011-7	APPR. BY: D.S.
Lebanon West Farms I and II 1160 Lebanon Street & 1172 & 1175 E. Tremont Ave Bronx, New York	

BRONX PARK AVENUE

EAST 178th STREET

EAST TREMONT AVENUE

LEBANON STREET

Approximate Site Boundary

Approximate Site Boundary

MW–5	
Metals	
Sodium	166,000 ppb

MW–3	
Metals	
Manganese	943 ppb
Sodium	28,500 ppb

SB–04 (12–16')	
Metals	
Manganese	519 ppm

MW–1	
VOCs	
cis–1,2–Dichloroethene	5.4 ppb
Methyl Tert Butyl Ether	15.0 ppb
Metals	
Manganese	2,180 ppb
Sodium	61,300 ppb

MW–4	
Metals	
Manganese	470 ppb
Sodium	142,000 ppb

SB–13 (12–16')	
Metals	
Sodium	51,500 ppm

SB–07 (12–16')	
Metals	
Sodium	22,800 ppm

SB–02 (12–16')	
Metals	
Iron	316 ppm
Manganese	932 ppm
Sodium	94,200 ppm

MW–2	
VOCs	
Tetrachloroethylene	30.7 ppb
Trichloroethylene	6.6 ppb
Metals	
Sodium	30,200 ppb

SB–15 MW–5 MW–4 SB–13 SB–09 MW–3 SB–07 MW–2 SB–04 MW–1 SB–02

VACANT

LEGEND

Groundwater sampling location

SB–13 (12–16') Metals Sodium 51,500 ppm — Sample ID; Constituent and concentration

Notes:
1) Groundwater data obtained from soil borings from ERM Phase II and RAWP dated February 2009.
2) Groundwater data obtained from monitoring wells from CA RICH RIR dared April 2011.

0 20 40 60
Graphic Scale in Feet

CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982
17 Dupont Street, Plainview, New York 11803

TITLE: Pre–Remediation Groundwater Contamination Groundwater Concentrations Above NYSDEC TOGS	DATE: 4/13/2011
	SCALE: AS SHOWN
FIGURE: 5	DRAWN BY: J.T.C.
DRAWING NO: 2011–6	APPR. BY: D.S.

Lebanon West Farms I and II
1160 Lebanon Street &
1172 & 1175 E. Tremont Ave
Bronx, New York

EAST TREMONT AVENUE

LEBANON STREET

Approximate Site Boundary of Lebanon West Farms I

Approximate Site Boundary of Lebanon West Farms II

SV–5			
Acetone	48.2	Methyl Ethyl Ketone	9.4
Benzene	25	Propylene	57.4
Carbon Disulfide	2.8	2,2,4–Trimethylketone	2.0 J
Cyclohexane	4.5	Tertiary Butyl Alcohol	1.9 J
Dichlorodifluoromethane	2.1 J	Tetrachloroethylene	3.1
Ethanol	39.6	Tetrahydrofuran	3.2
Ethyl Acetate	7.6	Toluene	47.1
Heptane	8.6	Trichloroethylene	1.1
Hexane	13	m,p–Xylene	3.1 J
Isopropyl Alcohol	7.9	Xylenes (Total)	3.1 J
Methylene Chloride	4.2		

SV–8	
Acetone	5.9
Chloromethane	1.1 J
Dichlorodifluoromethane	2.1 J
Ethanol	7.5
Ethyl Acetate	7.2
Toluene	1.6 J

SV–4			
Acetone	30.9	Methyl Ethyl Ketone	7.4
Benzene	16	Propylene	1.9
Chloromethane	1.1 J	Tert Butyl Alcohol	1.7 J
Dichlorodifluoromethane	2.0 J	Tetrachloroethylene	2.7
Ethanol	22.2	Tetrahydrofuran	2.4
Ethyl Acetate	36	Toluene	44.5
Heptane	3.0 J	Trichloroethylene	0.91
Isopropyl Alcohol	4.4	m,p–Xylene	3.1 J
Methylene Chloride	3.5	Xylenes (Total)	3.1 J

SV–2			
Acetone	57.0	Methylene Chloride	3.8
Benzene	33.2	Methyl Ethyl Ketone	8.0
Carbon Disulfide	3.1	Propylene	900 A
Chloromethane	2.0	2,2,4–Trimethylketone	24
Cyclohexane	34	Tetrachloroethylene	2.1
Dichlorodifluoromethane	2.2 J	Tetrahydrofuran	2.4
Ethanol	32.2	Toluene	35
Heptane	140	m,p–Xylene	2.2 J
Hexane	134	Xylenes (Total)	2.2 J
Isopropyl Alcohol	6.9		

SV–1

SV–2

SV–3

SV–4

SV–5

SV–6

SV–7

SV–8

Note:
1) Air sample concentrations are reported in ug/m^3
2) J = Estimated concentration
3) A = Result is from the laboratories second run
4) The samples from SV points SV–1, 3, 6, & 7 could not be analyzed due to low volume recovery

0 20 40 60
Graphic scale in feet

CA RICH CONSULTANTS, INC.
Environmental Specialists Since 1982
17 Dupont Street, Plainview, New York 11803

TITLE: Pre–Remediation Soil Vapor Concentrations Volatile Organic Compounds Detected in Air Samples

DATE: 4/13/2011

SCALE: AS SHOWN

FIGURE: 6

DRAWING NO: 2011–16

Lebanon West Farms I & II
1160 Lebanon Street &
1172 & 1175 E. Tremont Ave
Bronx, New York

DRAWN BY: J.T.C.

APPR. BY: D.S.

BRONX PARK AVENUE

EAST 178th STREET

EAST TREMONT AVENUE

LEBANON STREET

Approximate Site Boundary of Lebanon West Farms II

Approximate Site Boundary of Lebanon West Farms I

5-FT

2-FT

10-FT

5-FT

10-FT

2-FT

10-FT

5-FT

LEGEND

10-FT Excavation Depth In Feet

0 20 40 60

Graphic scale in feet

CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982

17 Dupont Street, Plainview, New York 11803

TITLE: Final Excavation Depths	DATE: 7/14/2014
	SCALE: AS SHOWN
FIGURE: 7	DRAWN BY: T.R.B.
DRAWING NO: 2011-8F	Lebanon West Farms I and II 1160 Lebanon Street & 1172 & 1175 E. Tremont Ave Bronx, New York
	APPR. BY: J.P.

BRONX PARK AVENUE

EAST 178th STREET

EAST TREMONT AVENUE

LEBANON STREET

Approximate Site Boundary
of Lebanon West Farms I

Approximate Site Boundary
of Lebanon West Farms II

IP-1
IP-2
IP-3
IP-4
IP-5
IP-6
IP-7
IP-8
IP-9
IP-10
IP-11
IP-12
IP-13
IP-14
IP-15
IP-16
IP-17
IP-18

LEGEND

● ISCO Injection Location

0 20 40 60

Graphic scale in feet

CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982
17 Dupont Street, Plainview, New York 11803

TITLE: In-Situ Chemical Oxidation Injection Locations	DATE: 7/14/2014
	SCALE: AS SHOWN
FIGURE: 8	DRAWN BY: T.R.B.
DRAWING NO: 2011-9	APPR. BY: J.P.

Lebanon West Farms I and II
1160 Lebanon Street &
1172 & 1175 E. Tremont Ave
Bronx, New York

BRONX PARK AVENUE

EAST 178th STREET

EAST TREMONT AVENUE

LEBANON STREET

Approximate Site Boundary of Lebanon West Farms I

Approximate Site Boundary of Lebanon West Farms II

EP-26 EP-25 EP-29 EP-9 EP-10 EP-14 EP-27 EP-24 EP-4 EP-3 EP-11 EP-8 EP-5 EP-2 EP-13 EP-7 EP-1 EP-28 EP-23 EP-22 EP-6 EP-12

EP-33 EP-21 EP-19 EP-34 EP-32 EP-20 EP-18 EP-16 EP-35 EP-31 EP-30 EP-17 EP-15

LEGEND

- Endpoint Location

0 20 40 60

Graphic scale in feet

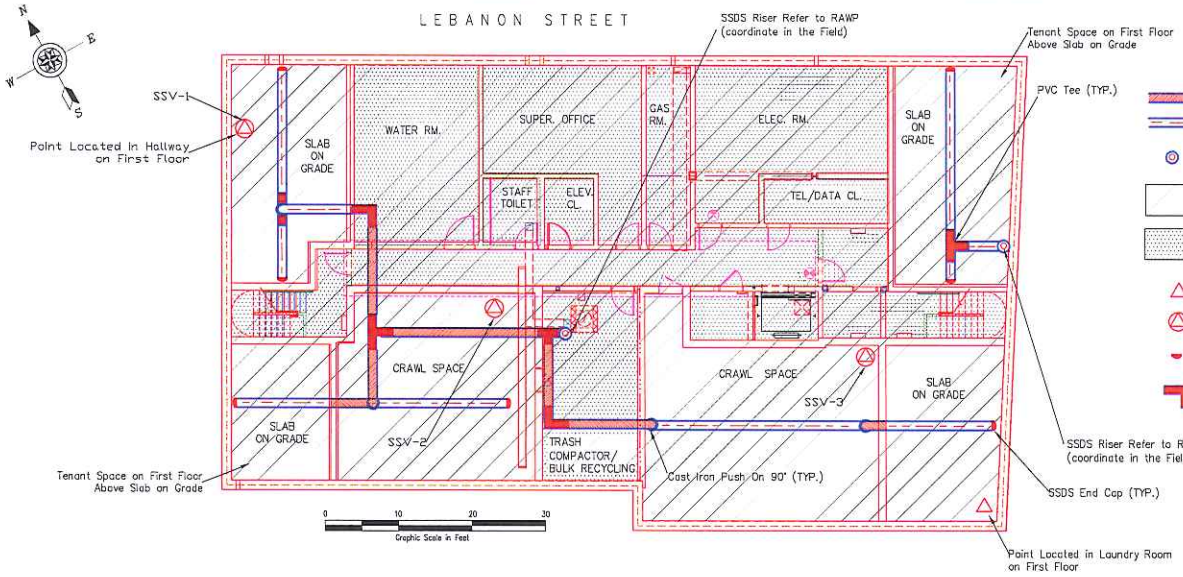
CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982
17 Dupont Street, Plainview, New York 11803

TITLE: Endpoint Sample Location Map	DATE: 2/27/2014
	SCALE: AS SHOWN
FIGURE: 9	DRAWN BY: J.T.C./T.R.B
DRAWING NO: 2013-1	APPR. BY: J.P.

Lebanon West Farms I and II
1160 Lebanon Street &
1172 & 1175 E. Tremont Ave
Bronx, New York

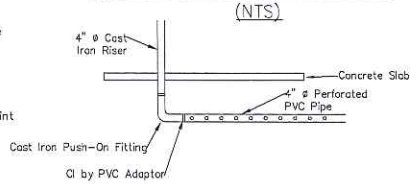
H:\Drawings\Phipps Lebanon West\SMP\Figure 9



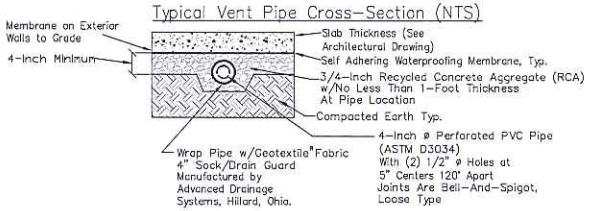
LEGEND

- 4" Diameter Aboveground Cast Iron Pipe
- 4" Diameter Perforated Sub-Slab PVC Pipe
- 4" Diameter Riser Vent to Roof
- Stego 15-mil. Waterproofing Membrane
- Basement Floor to be Constructed Directly Above Water Table
- Proposed Vacuum Monitoring Point To Be Used During Pilot Test
- Proposed Soil Vapor Point and Vacuum Point
- PVC End Cap
- PVC Tee
- Cast Iron 90

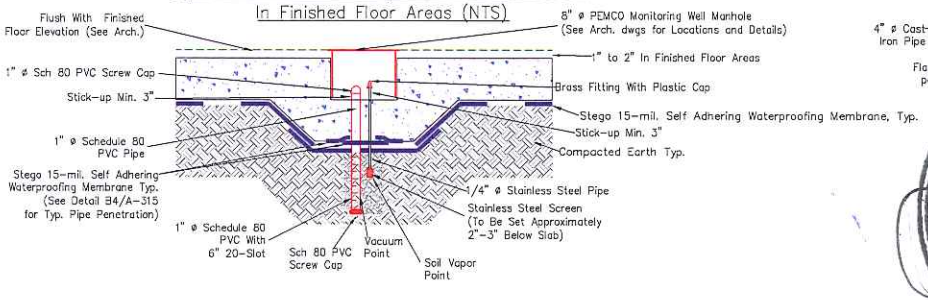
Typical Cast Iron Connection Detail (NTS)



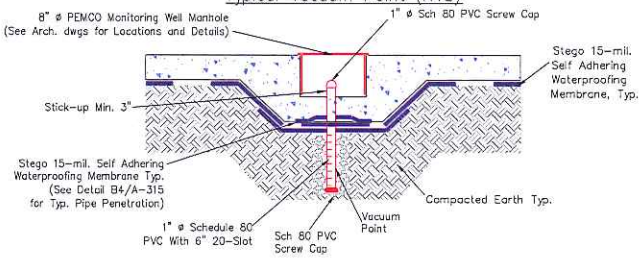
Typical Vent Pipe Cross-Section (NTS)



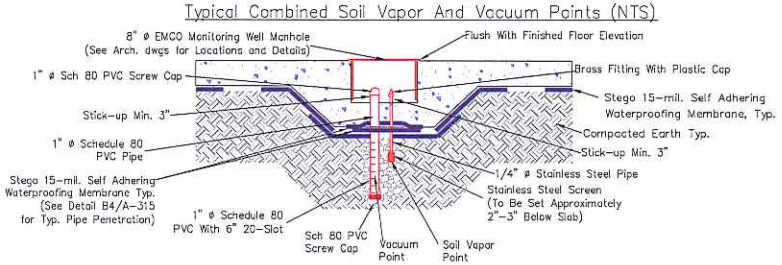
Typical Combined Soil Vapor And Vacuum Points In Finished Floor Areas (NTS)



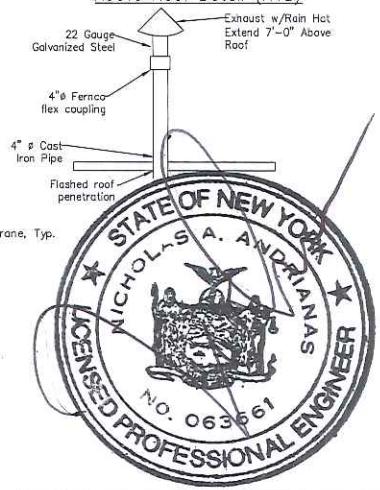
Typical Vacuum Point (NTS)



Typical Combined Soil Vapor And Vacuum Points (NTS)



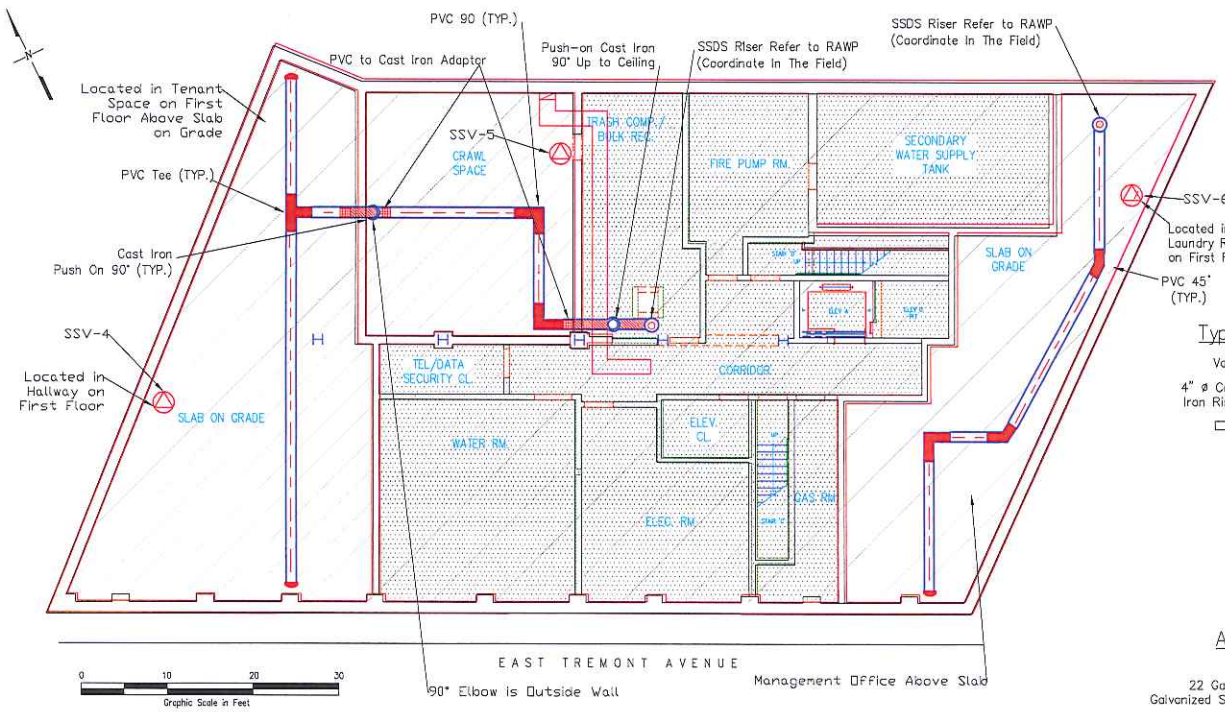
Above Roof Detail (NTS)



Nicholas A. Andrianas, P.E.
28 Henry Street
Kings Park, New York 11754

TITLE: As Built Waterproofing Membrane/SSDS Layout for Building 1		DATE: 9/29/2014
		SCALE: AS SHOWN
FIGURE: 10a	Lebanon West Farms I 1160 Lebanon Street & 1172 & 1175 E. Tremont Ave Bronx, New York	DRAWN BY: T.R.B.
DRAWING NO: Building 1		APPR. BY: N.A.A.

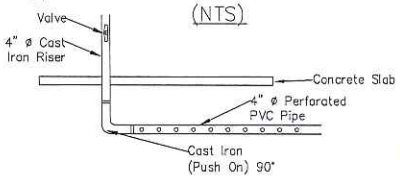
H:\Drawings\Phipps Lebanon West\SMP\Figure 10a



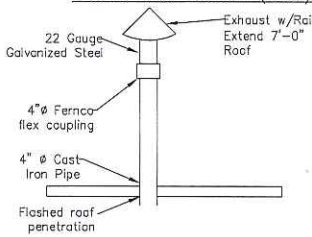
LEGEND

- 4" Diameter Aboveground Cast Iron Pipe
- 4" Diameter Perforated PVC Pipe
- 4" Diameter Riser Vent to Roof
- Stego 15-mil. Waterproofing Membrane
- Basement Floor to be Constructed Directly Above Water Table
- Proposed Soil Vapor Point and Vacuum Point
- PVC End Cap
- PVC 90°
- PVC "T"
- PVC 45°

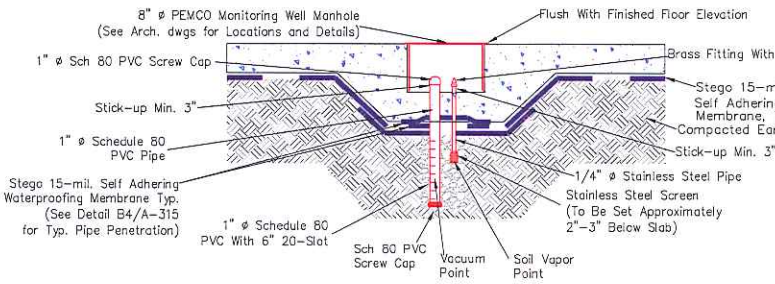
Typical Cast Iron Connection Detail (NTS)



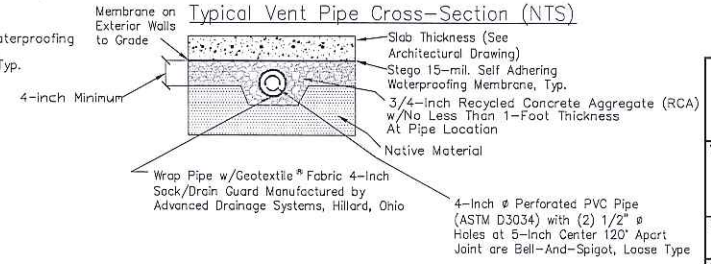
Above Roof Detail (NTS)



Typical Combined Soil Vapor And Vacuum Points (NTS)



Typical Vent Pipe Cross-Section (NTS)



Notes:
1) Grade Beam Locations Obtained from Drawing by Robert Silman Associates Structural Engineers Dated July 11, 2011.

Nicholas A. Andrianas, P.E.
28 Henry Street
Kings Park, New York 11754

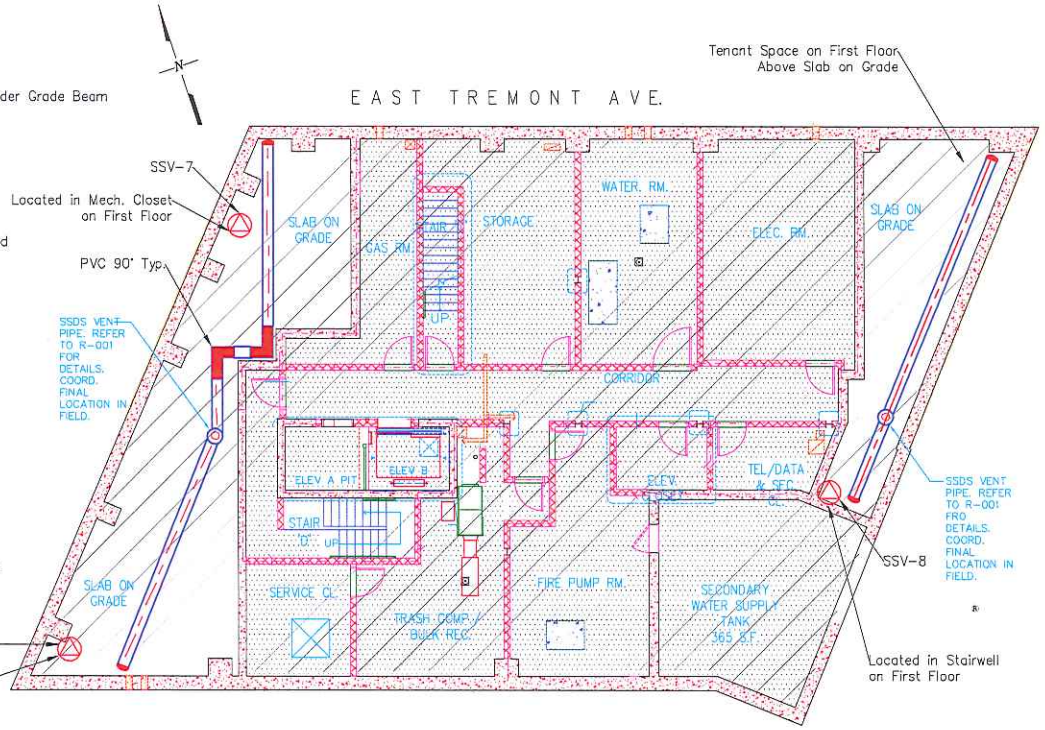
TITLE: As Built Waterproofing Membrane/SSD Layout for Building 2	DATE: 9/29/2014
	SCALE: AS SHOWN
FIGURE: 10b	DRAWN BY: T.R.B.
DRAWING NO: Building 2	APPR. BY: N.A.A.

Lebanon West Farms I
1160 Lebanon Street &
1172 & 1175 E. Tremont Ave
Bronx, New York

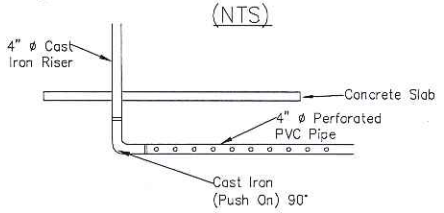
H:\Drawings\Phipps Lebanon West\SMP\Figure 10b

LEGEND

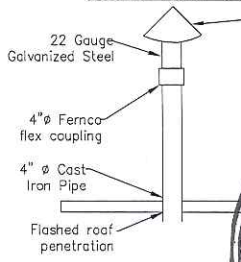
- 4" Diameter Perforated PVC Pipe Under Grade Beam
- 4" Diameter Riser Vent to Roof
- Stego 15-mil. Waterproofing Membrane
- Basement Floor to be Constructed Directly Above Water Table
- Proposed Soil Vapor Point and Vacuum Point
- PVC 90°
- PVC End Cap



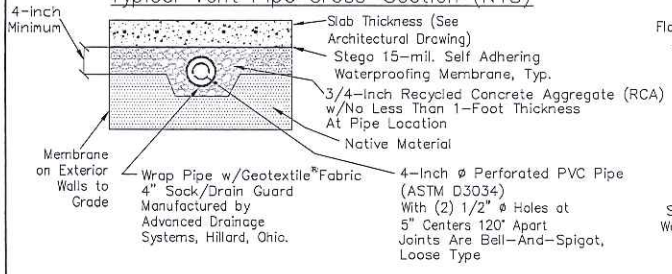
Typical Cast Iron Connection Detail (NTS)



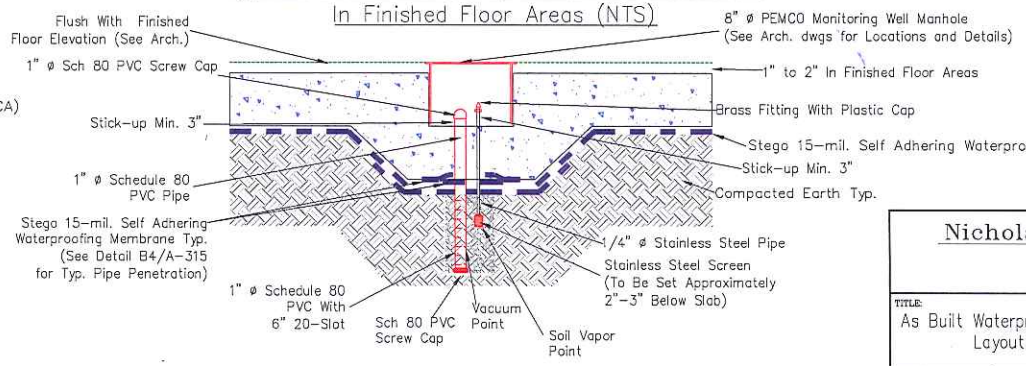
Above Roof Detail (NTS)



Typical Vent Pipe Cross-Section (NTS)



Typical Combined Soil Vapor And Vacuum Points In Finished Floor Areas (NTS)



Nicholas A. Andrianas, P.E.
28 Henry Street
Kings Park, New York 11754

TITLE: As Built Waterproofing Membrane/SSDS Layout for Building 3	DATE: 9/29/2014
	SCALE: AS SHOWN
FIGURE: 10c	DRAWN BY: T.R.B.
DRAWING NO: Building 3	APPR. BY: N.A.A.

Lebanon West Farms II
1160 Lebanon Street &
1172 & 1175 E. Tremont Ave
Bronx, New York

H:\Drawings\Phipps Lebanon West\SMP\Figure 10c

BRONX PARK AVENUE

EAST 178th STREET

EAST TREMONT AVENUE

LEBANON STREET

Approximate Site Boundary of Lebanon West Farms I

Approximate Site Boundary of Lebanon West Farms II

19.95 18.25 21.58 20.82 19.27 19.42 19.21 13.32 11.01 9.96 20.50 21.25 21.10 21.50 13.77 20.75 19.50 20.85 13.79 18.58 18.29 18.73

19.69 10.80 8.99 20.03 19.16 19.52 12.53 12.31 11.32 19.79 19.61 12.03 11.70

Legend

• 20.03 Elevation Relative to Bronx Topographic Bureau Datum (2.608 feet above mean sea level)

Adopted from Montrose Survey Numbers:
63929-1, 63929-5, 63929-8, 63929-9
Survey Dates:
3/18/13, 4/15/13, 5/10/13, 5/22/13, 6/12/13, 6/19/13

0 20 40 60
Graphic scale in feet

H:\Drawings\Phipps Lebanon West\SMP\Figure 11

CA RICH CONSULTANTS, INC.
Environmental Specialists Since 1982
17 Dupont Street, Plainview, New York 11803

TITLE: Elevation of Residuals Management Zone		DATE: 3/4/2014
		SCALE: AS SHOWN
FIGURE: 11	Lebanon West Farms I and II 1160 Lebanon Street & 1172 & 1175 E. Tremont Ave Bronx, New York	DRAWN BY: J.T.C./T.R.B
DRAWING NO: 2014-1		APPR. BY: J.P.

BRONX PARK AVENUE

EAST 178th STREET

EAST TREMONT AVENUE

LEBANON STREET

Trees

MW-8

MW-7

MW-6

MW-2

Building 3

Parking Lot

Building 2

Courtyard

Building 1

VOCs 7/10/14	
Cis 1,2 Dichloroethene	6.6 ppb
Tetrachloroethene	67.8 ppb
Trichloroethene	19.9 ppb

VOCs 11/6/14	
Acetone	265 ppb
Bromochloromethane	11.4 ppb
Bromomethane	39.2 ppb
2-Butanone (MEK)	114 ppb
Chloroform	10.4 ppb
1,2-Dichloroethane	3.3 ppb

CA RICH CONSULTANTS, INC.

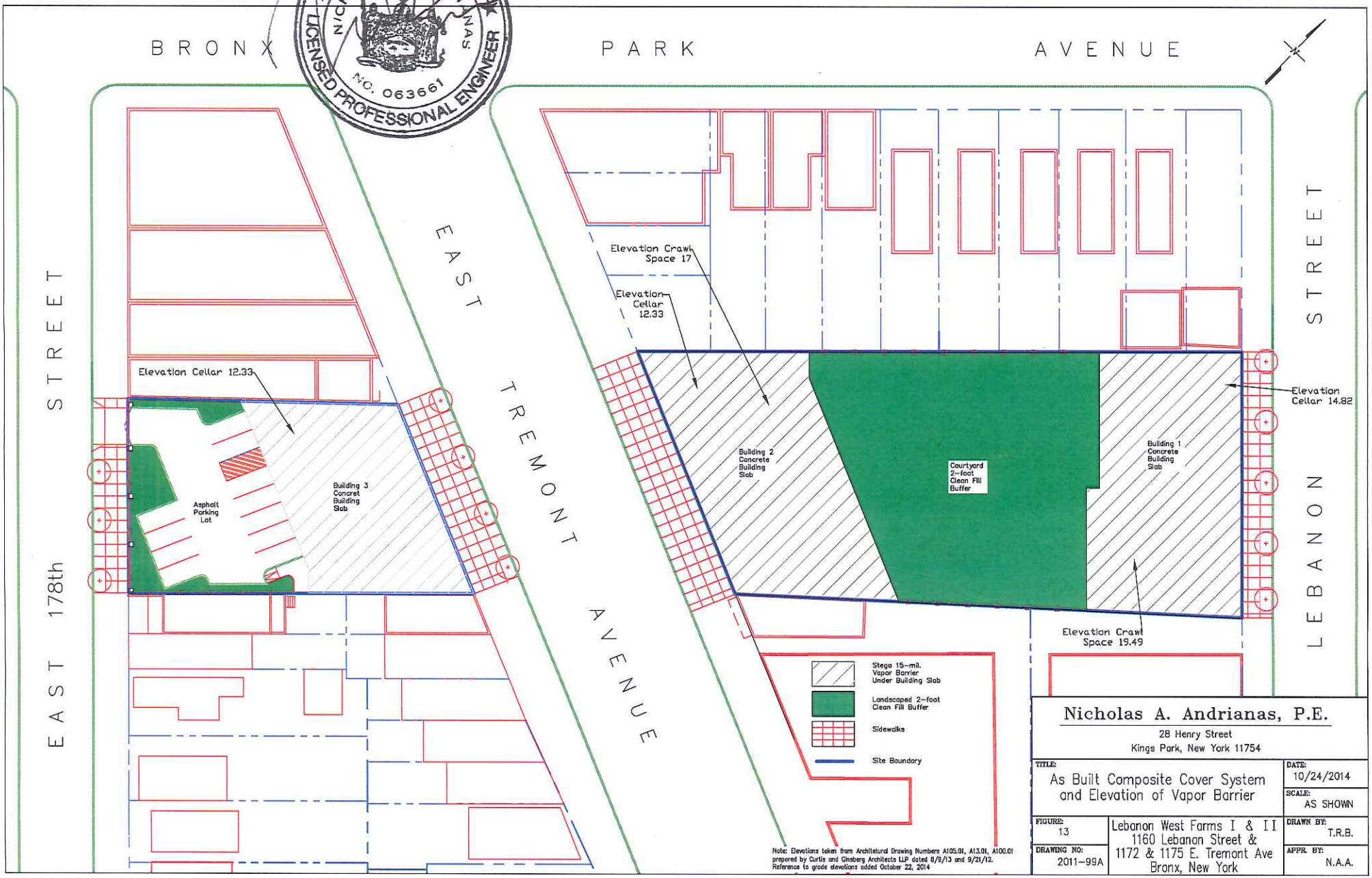
Environmental Specialists Since 1982

17 Dupont Street, Plainview, New York 11803

TITLE: Post-Remedial Groundwater Monitoring Well Locations & Concentraions in Groundwater Above NYSDEC TOGS	DATE: 11/14/2014
	SCALE: As Shown
FIGURE: 12	DRAWN BY: J.T.C./T.R.B.
DRAWING NO: 2014-42	APPR. BY: JEP

Lebanon West Farms I & II
1160 Lebanon Street &
1172 & 1175 E. Tremont Ave
Bronx, New York

anon West\FER\Figure 5 Post-Remedial Groundwater MW



STATE OF NEW YORK
NICHOLAS A. ANDRIANAS
NO. 063661
LICENSED PROFESSIONAL ENGINEER

Nicholas A. Andrianas, P.E.
28 Henry Street
Kings Park, New York 11754

TITLE: As Built Composite Cover System and Elevation of Vapor Barrier	DATE: 10/24/2014
	SCALE: AS SHOWN
FIGURE: 13	DRAWN BY: T.R.B.
DRAWING NO: 2011-99A	APPR. BY: N.A.A.

Lebanon West Farms I & II
1160 Lebanon Street &
1172 & 1175 E. Tremont Ave
Bronx, New York

APPENDIX A

Excavation Work Plan

APPENDIX A

EXCAVATION WORK PLAN
LEBANON WEST FARMS I AND II
BRONX, NY

Prepared by

CA RICH CONSULTANTS, INC.
17 Dupont Street
Plainview, NY 11803
(516) 576-8844

TABLE OF CONTENTS

APPENDIX A
EXCAVATION WORK PLAN
Lebanon West Farms I and II
Bronx, NY

A-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the Site owner or their representative will notify the Department. Currently, this notification will be made to:

Dana Kaplan
Project Manager
NYSDEC Region 2
Division of Environmental Remediation
47-40 21st Street
Long Island City, NY 11101
(718)482-7541
Email: dpkaplan@gw.dec.state.ny.us

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for Site re-grading, 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 an engineering control;
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;

- A copy of the contractor's health and safety plan, in electronic format, if it differs from the HASP provided in Appendix E of this document;
- Identification of disposal facilities for potential waste streams;
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

Any excavation beneath the composite cover system will be conducted under the Community Air Monitoring Plan (see SMP Appendix E).

A-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

A-3 STOCKPILE METHODS

At a minimum, a hose connected to a NYS fire hydrant will be available at the Site for dust control. Depending on the scope of the excavation, a dedicated water truck with water cannon may be required. Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced. Stockpiles will be

inspected at a minimum 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.

A-4 MATERIALS EXCAVATION AND LOAD OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

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).

A truck wash will be operated on-site. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

A-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be washed prior to leaving the site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Exact truck transport routes will be determined after a disposal facility is selected. All trucks loaded with Site materials will exit the vicinity of the Site using only approved truck routes. Suggested Truck Routes are illustrated on Figure A-1. These are the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stoping and idling in the neighborhood outside the project site. Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site to the extent possible in order to minimize off-site disturbance. Off-site queuing will be prohibited.

A-6 MATERIALS DISPOSAL OFF-SITE

All soil/fill/solid waste excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6 NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

A-7 MATERIALS REUSE ON-SITE

Chemical criteria for on-site reuse of material have been approved by NYSDEC and are listed in Table 1 of the SMP. The qualified environmental professional will ensure that procedures defined for materials reuse in the SMP are followed and that unacceptable material does not remain on-site. Visual, olfactory and PID soil screening and assessment will be performed by a Qualified Environmental Professional during excavations into known or potentially contaminated material (Residual Contamination Zone). Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for re-use on-site will be placed

below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

For soils to be removed and disposed of off-site, the direct load approach is intended, when possible, whereby the soil is excavated and then placed directly into trucks for disposal. This eliminates the need for staging soil on-site. Should excavated soil have to be staged for either disposal or reuse, it will be placed on, and covered with, secured plastic sheeting to prevent erosion by precipitation.

A-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, but will be managed off-site.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

A-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the RAWP. The demarcation layer, consisting of orange snow fencing material or equivalent material will be replaced to provide a visual reference to the top of the ‘Remaining Contamination Zone’, the zone that requires adherence to special

conditions for disturbance of remaining contaminated soils defined in this Site Management Plan. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the 'Remaining Contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the Site Management Plan.

A-10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6 NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are the lower of the protection of public health or protection of groundwater soil cleanup objectives for restricted residential use per Table 375-6.8b of 6 NYCRR. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

A-11 STORMWATER POLLUTION PREVENTION

Barriers and hay bale checks will be installed and inspected once a 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. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

A-12 CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, 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 invasive site work 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 reports prepared pursuant to Section 5 of the SMP.

A-13 COMMUNITY AIR MONITORING PLAN

A figure showing the location of air sampling stations based on generally prevailing wind conditions will be developed. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations. Volatile organic compounds will be monitored at the downwind perimeter of the work area on a continuous basis using a PID. If total organic vapor levels exceed 5 ppm above background, work activities must be halted and monitoring continued under the provisions of a Vapor Emission Response Plan. All readings must be recorded and be available for regulatory personnel to review. In addition, particulates should be continuously monitored upwind using a personal Dataram, downwind and within the work area at temporary particulate monitoring stations during excavation activities. If the downwind particulate level is 150 µg/m3 greater than the upwind particulate level, then dust suppression techniques must be employed. All readings must be recorded and be available for regulatory personnel to review. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers. The generic CAMP for the Site is presented in Appendix E of the SMP.

A-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site and on-site. Specific odor screening methods to be used on a routine basis will include use of a PID meter to screen for VOCs and olfactory observations by Field Technicians. 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. 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 halt of 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 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 soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work 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.

A-15 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

A-16 OTHER NUISANCES

A plan for rodent control will be developed and utilized by the contractor prior to and during Site clearing and Site grubbing, and during all remedial work.

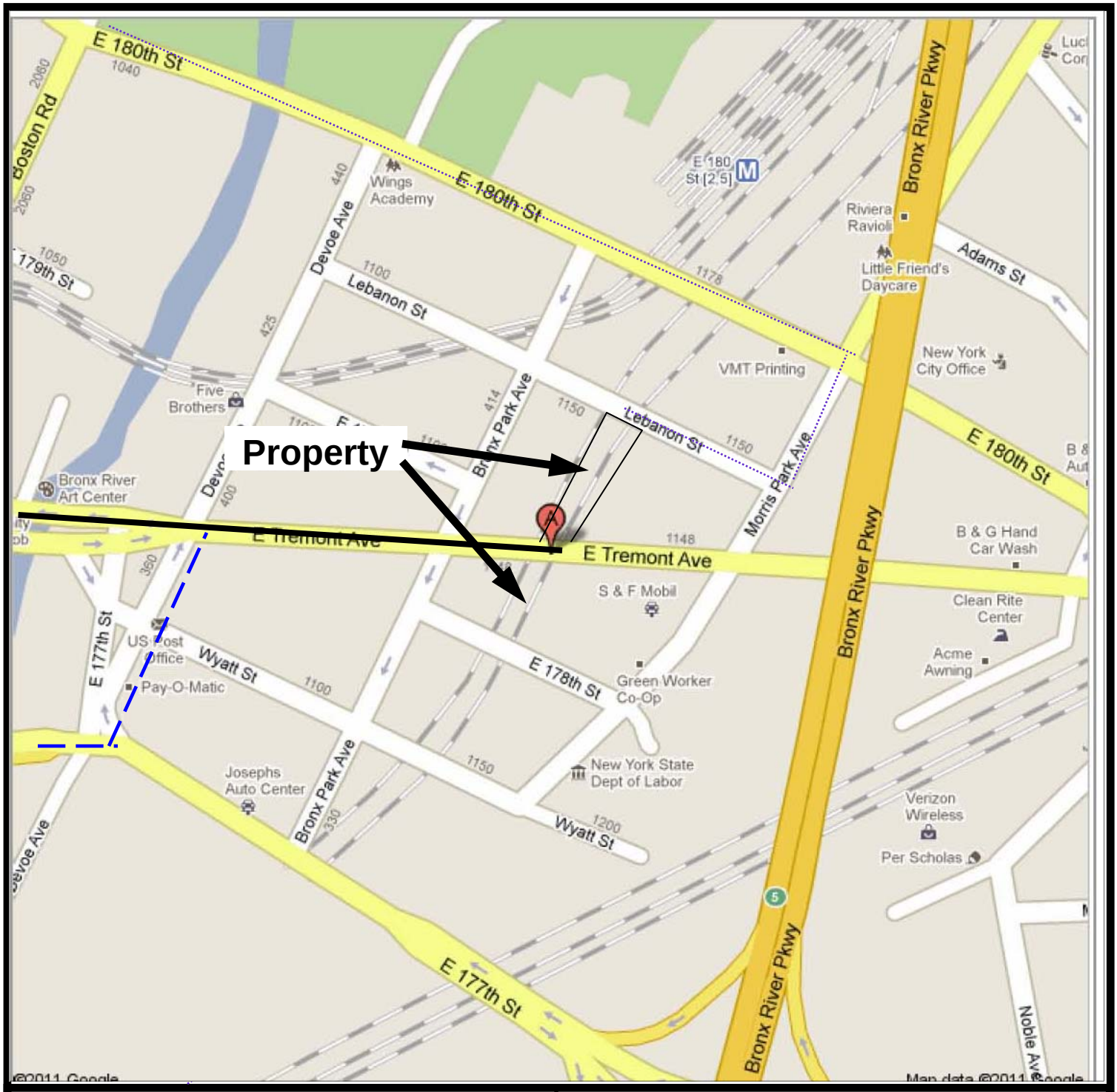
The rodent plan includes the following:

- Within the construction Site, tamper resistant rodent bait stations will be installed in appropriate locations and active rodent burrows will be baited.

- Upon installation, each bait station will be baited, labeled, and secured to the ground. Bait will be replenished and bait stations relocated as necessary to control rodent populations. A baiting program will be initiated prior to mobilization by the contractor in the construction area. Regular inspections and rebaiting of bait stations will be performed to ensure rodents will not be dispersed by construction activities and that rodents will not infest work areas.

Safety signs will be posted on the Site, which will include a copy of the product label and MSDS for the rodenticide in used. Signs will also list practical medical treatment, first aid procedures, and antidote. Caution signs in English and Spanish will be posted when bait stations are placed in areas accessible to the general public, domestic animals, and pets.

FIGURE



ALTERNATE TRUCK ROUTE 1

ALTERNATE TRUCK ROUTE 2

ALTERNATE TRUCK ROUTE 3

APPROX. SCALE (ft.)

0 500 1,000

N

CA RICH CONSULTANTS, INC.

Certified Ground Water and Environmental Specialists
17 Dupont Street, Plainview, NY 11803

TITLE: TRUCK ROUTE MAP	DATE: 6/27/14
	SCALE: AS SHOWN
FIGURE: A-1	DRAWN BY: J.p.
DRAWING: Lebanon West Farms I and II 1160 Lebanon Street, and 1172 and 1175 East Tremont Avenue Bronx, New York	APPR. BY: RJI

APPENDIX B

Environmental Easement

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 19th day of November, 2014, between Owner(s) Lebanon West Farms Housing Development Fund Corporation, (the "Grantor Fee Owner") having an office at 902 Broadway, 13th Floor, New York, NY 10010, County of New York, State of New York, and Lebanon West Farms Associates, L.P., (the "Grantor Beneficial Owner), having an office at 902 Broadway, 13th Floor, New York, New York 10010, County of New York, State of New York (collectively, 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 1172 East Tremont Avenue and 1160 Lebanon Street in the City of Bronx, County of Bronx and State of New York, known and designated on the tax map of the County Clerk of Bronx as tax map parcel numbers: Block(s) 3909 and 4007, Lot(s) 8 and 15 respectively, being the same as that property conveyed to Grantor by deed dated June 28, 2012 and recorded in the Office of The City Register of the City of New York in Instrument No. 2012000286403. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.782 +/- acres, and is hereinafter more fully described in the Land Title Survey dated April 4, 2014 prepared by Montrose Surveying, Co., LLP, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A;

WHEREAS, Grantor Beneficial Owner, is the owner of the beneficial interest in the Controlled Property being the same as a portion of that beneficial interest conveyed to Grantor Beneficial Owner by means of a Declaration of Interest and Nominee Agreement dated June 28, 2014 and recorded in the Office of The City Register of the City of New York in Instrument No. 2012000286404 ; 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 Brownfield Cleanup Agreement Index Number: C203060-10-11, 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. Purposes. 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. Institutional and Engineering Controls. 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:

Restricted Residential as described in 6 NYCRR Part 375-1.8(g)(2)(ii), Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and 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 Bronx 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 purposes as defined in 6NYCRR 375-1.8(g)(2)(i), 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 b 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. Reserved Grantor's Rights. 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. Notice. 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: C203060
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. Recordation. 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. Extinguishment. 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. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

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

Lebanon West Farms Housing Development Fund Corporation:

By: _____

Print Name: MICHAEL WADMAN

Title: VP Date: 10/28/14

Grantor Fee Owner's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF NEW YORK)

On the 28th day of OCTOBER, in the year 2014, before me, the undersigned, personally appeared MICHAEL WADMAN, 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/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public - State of New York
[illegible] G. CUNNINGHAM
[illegible]otary Public, State of New York
[illegible]o. 01CU6227096
[illegible]ualified in New York County
[illegible]erm Expires August 23, 2018

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

Lebanon West Farms Associates, L.P.
By Lebanon West Farms Management Corp., its General Partner:

By: _____

Print Name: MICHAEL WADMAN

Title: VP Date: 10/22/19

Grantor Beneficial Owner's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF NEW YORK)

On the 28th day of OCTOBER, in the year 2014, before me, the undersigned, personally appeared MICHAEL WADMAN, 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/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public - State of New York

MAC CUNNINGHAM
Notary Public, State of New York
No. 01CU6227096
Qualified in New York County
Term Expires August 23, 2018

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,

By: _____
Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 19th day of November, in the year 2014 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, 2018

SCHEDULE "A" PROPERTY DESCRIPTION

Title No.: 3214-00020

PARCEL 1:

ALL that certain plot, piece or parcel of land, situate, lying and being in the Borough of Bronx, County of Bronx, City and State of New York, more particularly designated on the Tax Map of The City of New York, for the Borough of Bronx, as Section 15, Block 3909, Lot 8 as said Tax Map was on the 25th day of April, 2011, said lot being bounded and described as follows:

BEGINNING at a point on the northerly side of East 178th Street distant 119.81 feet easterly, as measured along the said northerly side of East 178th Street, from the corner formed by the intersection of the easterly side of Bronx Park Avenue with the said northerly side of East 178th Street;

RUNNING THENCE northerly along a line which forms an interior angle of 88° 46' 27" with the northerly side of East 178th Street, a distance of 111.49 feet to a point on the southerly side of East Tremont Avenue, which is distant 131.66 feet easterly, as measured along the southerly side of East Tremont Avenue, from the intersection of the southerly side of East Tremont Avenue with the easterly side of Bronx Park Avenue;

THENCE easterly along the southerly side of East Tremont Avenue, which form an interior angle of 113° 05' 33" with the last described course, a distance of 83.85 feet;

THENCE southerly along a line which forms an interior angle of 68° 08' 30" with the southerly side of East Tremont Avenue, a distance of 142.71 feet to the northerly side of East 178th Street;

THENCE westerly along the northerly side of East 178th Street which forms an interior angle of 89° 59' 30" with the last described course, a distance of 80.22 feet to the point and place of BEGINNING.

(FOR INFORMATION: BLOCK: 3909, LOT 8)

Title No.: 3214-00020

PARCEL 2:

ALL that certain plot, piece or parcel of land, situate, lying and being in the Borough of Bronx, County of Bronx, City and State of New York, more particularly designated on the Tax Map of The City of New York, for the Borough of Bronx, as Section 15, Block 4007, Lot 15 as said Tax Map was on the 25th day of April, 2011, said lot being bounded and described as follows:

BEGINNING at a point on the northerly side of East Tremont Avenue distant 107.75 feet easterly, as measured along the said northerly side of East Tremont Avenue, from the corner formed by the intersection of the easterly side of Bronx Park Avenue with the said northerly side of East Tremont Avenue;

RUNNING THENCE northerly along a line which forms an interior angle of 68° 08' 00" with the northerly side of East Tremont Avenue, a distance of 249.75 feet to a point on the southerly side of Lebanon Street which is distant 100.00 feet easterly, as measured along the southerly side of Lebanon Street, from the intersection of the southerly side of Lebanon Street with the easterly side of Bronx Park

Avenue;

THENCE easterly along the southerly side of Lebanon Street at right angles to the last described course, a distance of 109.72 feet;

THENCE southerly along a line which forms an interior angle of 87°20'55" with the southerly side of Lebanon Street, a distance of 209.82 feet to the northerly side of East Tremont Avenue;

THENCE westerly along the northerly side of East Tremont Avenue which forms an interior angle of 114° 31' 05" with the last described course, a distance of 107.76 feet to the point and place of BEGINNING.

(FOR INFORMATION: BLOCK 4007, LOT 15)

APPENDIX C

Metes and Bounds

SCHEDULE "A" PROPERTY DESCRIPTION

Title No.: 3214-00020

PARCEL 1:

ALL that certain plot, piece or parcel of land, situate, lying and being in the Borough of Bronx, County of Bronx, City and State of New York, more particularly designated on the Tax Map of The City of New York, for the Borough of Bronx, as Section 15, Block 3909, Lot 8 as said Tax Map was on the 25th day of April, 2011, said lot being bounded and described as follows:

BEGINNING at a point on the northerly side of East 178th Street distant 119.81 feet easterly, as measured along the said northerly side of East 178th Street, from the corner formed by the intersection of the easterly side of Bronx Park Avenue with the said northerly side of East 178th Street;

RUNNING THENCE northerly along a line which forms an interior angle of 88° 46' 27" with the northerly side of East 178th Street, a distance of 111.49 feet to a point on the southerly side of East Tremont Avenue, which is distant 131.66 feet easterly, as measured along the southerly side of East Tremont Avenue, from the intersection of the southerly side of East Tremont Avenue with the easterly side of Bronx Park Avenue;

THENCE easterly along the southerly side of East Tremont Avenue, which form an interior angle of 113° 05' 33" with the last described course, a distance of 83.85 feet;

THENCE southerly along a line which forms an interior angle of 68° 08' 30" with the southerly side of East Tremont Avenue, a distance of 142.71 feet to the northerly side of East 178th Street;

THENCE westerly along the northerly side of East 178th Street which forms an interior angle of 89° 59' 30" with the last described course, a distance of 80.22 feet to the point and place of BEGINNING.

(FOR INFORMATION: BLOCK: 3909, LOT 8)

Title No.: 3214-00020

PARCEL 2:

ALL that certain plot, piece or parcel of land, situate, lying and being in the Borough of Bronx, County of Bronx, City and State of New York, more particularly designated on the Tax Map of The City of New York, for the Borough of Bronx, as Section 15, Block 4007, Lot 15 as said Tax Map was on the 25th day of April, 2011, said lot being bounded and described as follows:

BEGINNING at a point on the northerly side of East Tremont Avenue distant 107.75 feet easterly, as measured along the said northerly side of East Tremont Avenue, from the corner formed by the intersection of the easterly side of Bronx Park Avenue with the said northerly side of East Tremont Avenue;

RUNNING THENCE northerly along a line which forms an interior angle of 68° 08' 00" with the northerly side of East Tremont Avenue, a distance of 249.75 feet to a point on the southerly side of Lebanon Street which is distant 100.00 feet easterly, as measured along the southerly side of Lebanon Street, from the intersection of the southerly side of Lebanon Street with the easterly side of Bronx Park

Avenue;

THENCE easterly along the southerly side of Lebanon Street at right angles to the last described course, a distance of 109.72 feet;

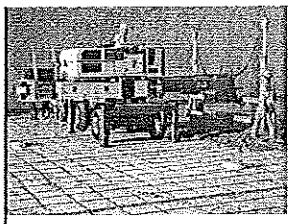
THENCE southerly along a line which forms an interior angle of 87°20'55" with the southerly side of Lebanon Street, a distance of 209.82 feet to the northerly side of East Tremont Avenue;

THENCE westerly along the northerly side of East Tremont Avenue which forms an interior angle of 114° 31' 05" with the last described course, a distance of 107.76 feet to the point and place of BEGINNING.

(FOR INFORMATION: BLOCK 4007, LOT 15)

APPENDIX D

Waterproofing Membrane/Vapor Barrier Specifications
SSDS As-built Drawings & Specifications
NYSDEC Confirmation for Passive SSDS



Stego® Wrap Vapor Barrier

STEGO INDUSTRIES, LLC

Vapor Retarders
07260, 03300

Manufacturer
Stego Industries, LLC
216 Avenida Fabricante, Suite 101
San Clemente, CA 92672
Sales, Technical Assistance
Ph: (877) 464-7834
Fx: (949) 257-4113
www.stegoindustries.com

Product Description
USES: Stego Wrap Vapor Barrier is used as a true below-slab vapor barrier, and as a protection course for below grade waterproofing applications.
COMPOSITION: Stego Wrap Vapor Barrier is a multi-layer plastic extrusion manufactured with only the highest grade of prime, virgin, polyolefin resins.
ENVIRONMENTAL FACTORS:
Stego Wrap Vapor Barrier can be used in systems for the control of soil gases (radon, methane), soil poisons (oil by-products) and sulfates.

Installation
UNDER SLAB: Unroll Stego Wrap Vapor Barrier over an aggregate, sand or tamped earth base. Overlap all seams a minimum of six inches and tape using Stego Tape. All penetrations must be sealed using a combination of Stego Wrap Vapor Barrier, Stego Tape and/or Stego Mastic.

VERTICAL WALL: Install Stego Wrap Vapor Barrier over the waterproofing membrane while still tacky. Mechanically fasten Stego Wrap Vapor Barrier to the wall at the top with termination bar and concrete nails. Drape Stego Wrap Vapor Barrier down across the footer and under the french drain.

Availability & Cost
Stego Wrap Vapor Barrier is available nationally via building supply distributors. For current cost information, contact your local Stego Wrap distributor or Stego Industries' sales department.

Warranty
Stego Industries, LLC believes to the best of its knowledge, that specifications and recommendations herein are accurate and reliable. However, since site conditions are not within its control, Stego Industries does not guarantee results from the use of the information provided and disclaims all liability from any loss or damage. No warranty, express or implied, is given as to the merchantability, fitness for a particular purpose, or otherwise with respect to the products referred to.

Maintenance
None required.

Technical Services
Technical advice, custom CAD drawings, and additional information can be obtained by contacting Stego Industries' technical assistance department or via the website.

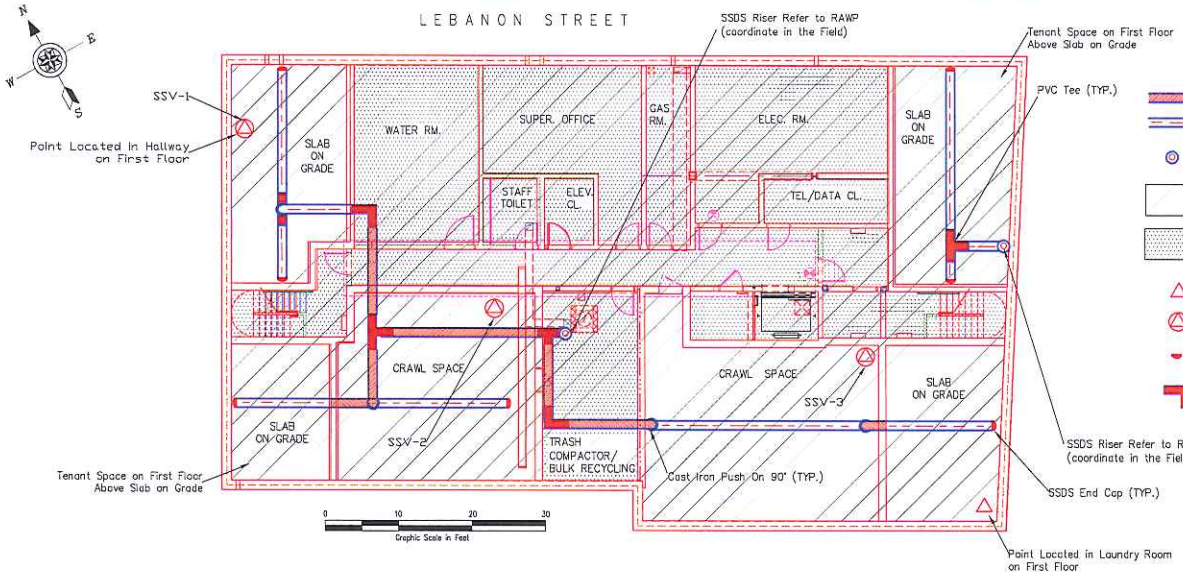
Filing Systems
- Stego Industries' website
- Buildsite
- GreenFormat
- 4Specs

Technical Data

TABLE 1: PHYSICAL PROPERTIES OF STEGO WRAP VAPOR BARRIER

PROPERTY	TEST	RESULTS
Under Slab Vapor Retarders	ASTM E 1745 Class A, B & C – Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs	Exceeds Class A, B & C
Water Vapor Permeance	ASTM F 1249 – Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor	0.0084 perms *0.0035 WVTR
Puncture Resistance	ASTM D 1709 – Test Methods for Impact Resistance of Plastic Film by Free-Falling Dart Method	2326 grams
Tensile Strength	ASTM D 882 – Test Method for Tensile Properties of Thin Plastic Sheeting	79.6 lbf/in.
Permeance After Conditioning (ASTM E 1745 Sections 7.1.2 - 7.1.5)	ASTM E 154 Section 8, F 1249 – Permeance after wetting, drying, and soaking ASTM E 154 Section 11, F 1249 – Permeance after heat conditioning ASTM E 154 Section 12, F 1249 – Permeance after low temperature conditioning ASTM E 154 Section 13, F 1249 – Permeance after soil organism exposure	0.0091 perms 0.0092 perms 0.0089 perms 0.0092 perms
Methane Transmission Rate	ASTM D 1434 – Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting	**149.6 GTR 2.12×10^{-6} perms
Radon Diffusion Coefficient		$1.3 \times 10^{-13} m^2$/second
Chemical Resistance	ASTM E 154 – Test Methods for Water Vapor Retarders Used in Contact with Earth under Concrete Slabs, on Walls, or as Ground Cover	Unaffected
Life Expectancy	ASTM E 154 - Test Methods for Water Vapor Retarders Used in Contact with Earth under Concrete Slabs, on Walls, or as Ground Cover	Indefinite
Thickness	ACI 302.1R-04 – Minimum Thickness (10 mils)	15 mils
Roll Dimensions		14 ft. wide x 140 ft. long or 1,960 ft^2
Roll Weight		140 lbs.

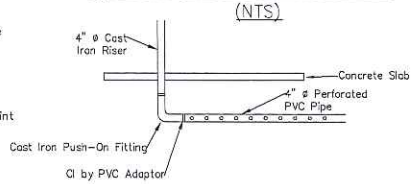
Note: perm unit = grains/(ft^2 *hr* in.Hg) * WVTR = Water Vapor Transmission Rate ** GTR = Gas Transmission Rate



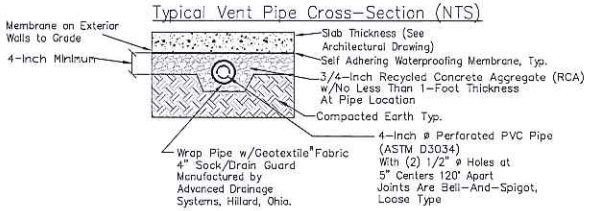
LEGEND

- 4" Diameter Aboveground Cast Iron Pipe
- 4" Diameter Perforated Sub-Slab PVC Pipe
- 4" Diameter Riser Vent to Roof
- Stego 15-mil. Waterproofing Membrane
- Basement Floor to be Constructed Directly Above Water Table
- Proposed Vacuum Monitoring Point To Be Used During Pilot Test
- Proposed Soil Vapor Point and Vacuum Point
- PVC End Cap
- PVC Tee
- Cast Iron 90

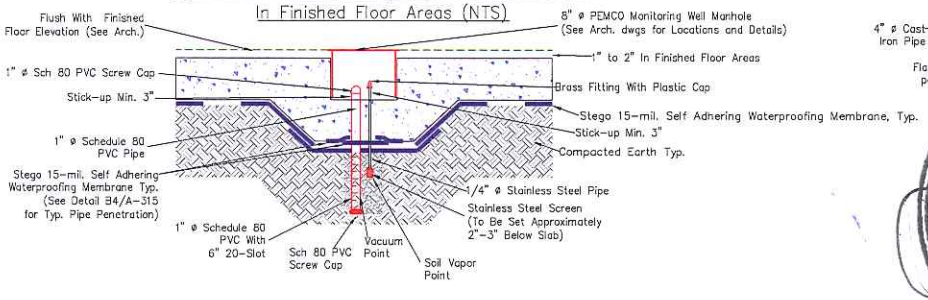
Typical Cast Iron Connection Detail (NTS)



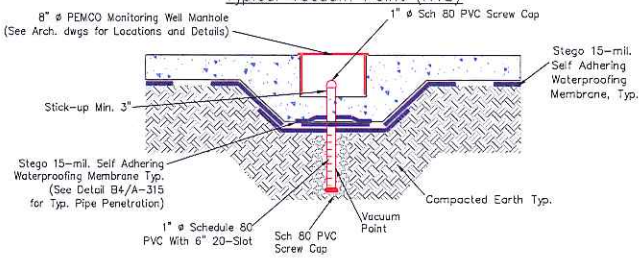
Typical Vent Pipe Cross-Section (NTS)



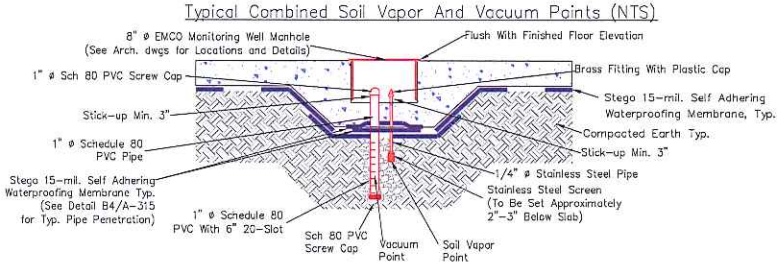
Typical Combined Soil Vapor And Vacuum Points In Finished Floor Areas (NTS)



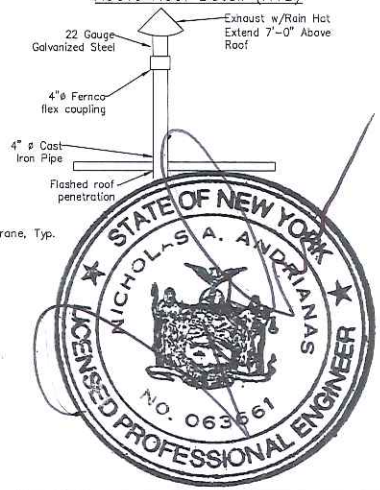
Typical Vacuum Point (NTS)



Typical Combined Soil Vapor And Vacuum Points (NTS)



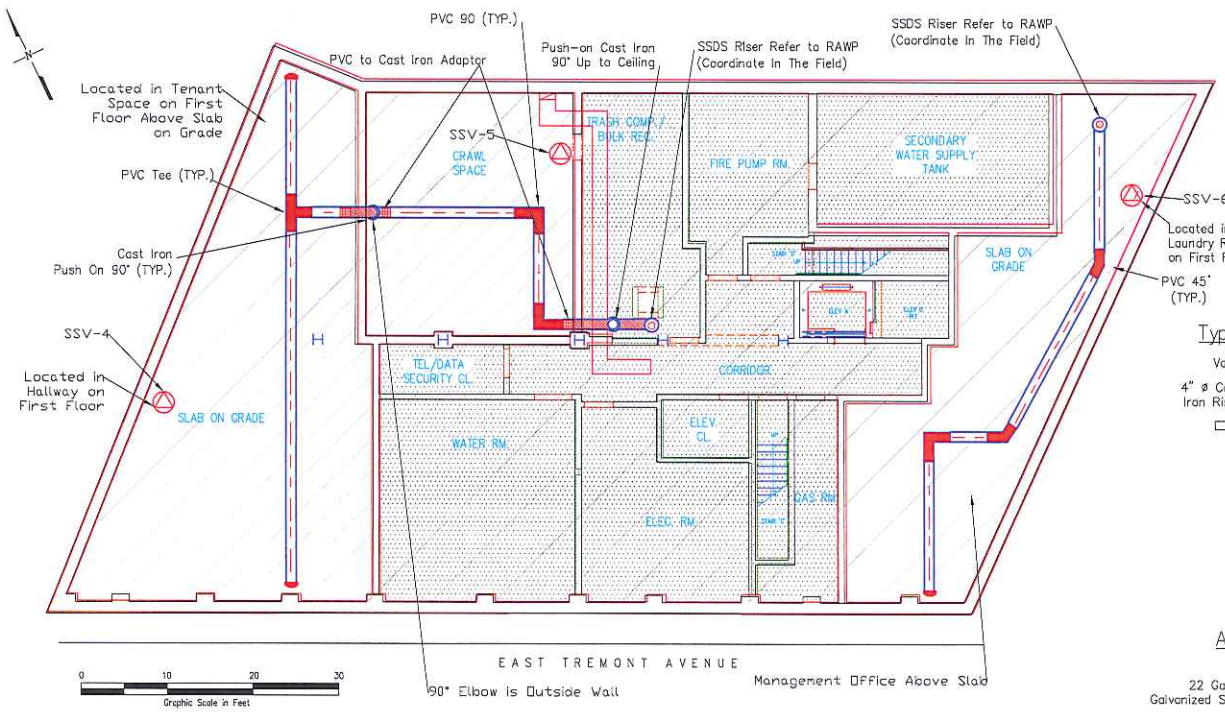
Above Roof Detail (NTS)



Nicholas A. Andrianas, P.E.
28 Henry Street
Kings Park, New York 11754

TITLE: As Built Waterproofing Membrane/SSDS Layout for Building 1		DATE: 9/29/2014
		SCALE: AS SHOWN
FIGURE: 10a	Lebanon West Farms I 1160 Lebanon Street & 1172 & 1175 E. Tremont Ave Bronx, New York	DRAWN BY: T.R.B.
DRAWING NO: Building 1		APPR. BY: N.A.A.

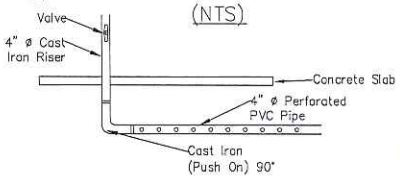
H:\Drawings\Phipps Lebanon West\SMP\Figure 10a



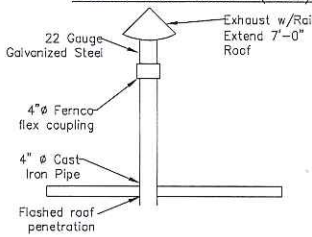
LEGEND

- 4" Diameter Aboveground Cast Iron Pipe
- 4" Diameter Perforated PVC Pipe
- 4" Diameter Riser Vent to Roof
- Stego 15-mil. Waterproofing Membrane
- Basement Floor to be Constructed Directly Above Water Table
- Proposed Soil Vapor Point and Vacuum Point
- PVC End Cap
- PVC 90°
- PVC "T"
- PVC 45°

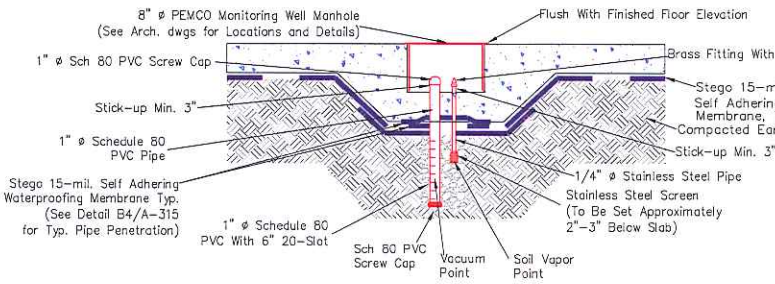
Typical Cast Iron Connection Detail (NTS)



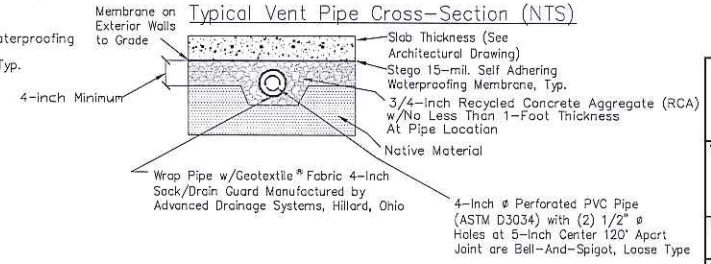
Above Roof Detail (NTS)



Typical Combined Soil Vapor And Vacuum Points (NTS)



Typical Vent Pipe Cross-Section (NTS)



Notes:
1) Grade Beam Locations Obtained from Drawing by Robert Silman Associates Structural Engineers Dated July 11, 2011.

Nicholas A. Andrianas, P.E.
28 Henry Street
Kings Park, New York 11754

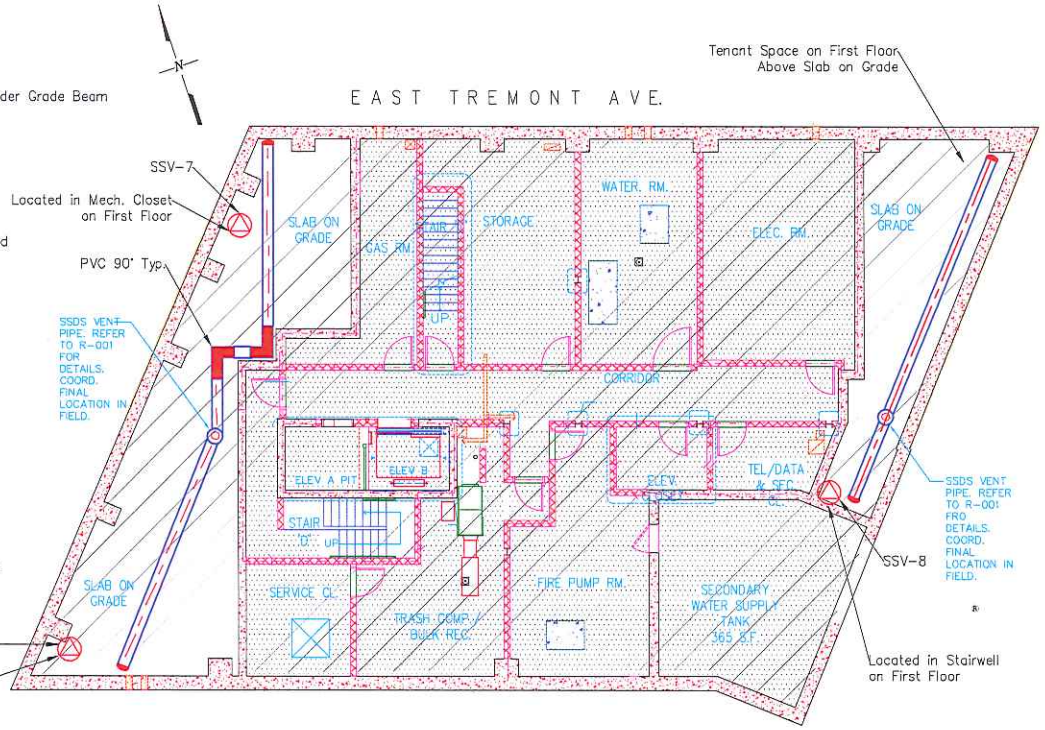
TITLE: As Built Waterproofing Membrane/SSD Layout for Building 2	DATE: 9/29/2014
	SCALE: AS SHOWN
FIGURE: 10b	DRAWN BY: T.R.B.
DRAWING NO: Building 2	APPR. BY: N.A.A.

Lebanon West Farms I
1160 Lebanon Street &
1172 & 1175 E. Tremont Ave
Bronx, New York

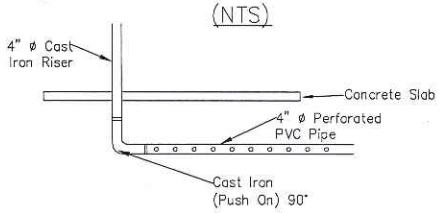
H:\Drawings\Phipps Lebanon West\SMP\Figure 10b

LEGEND

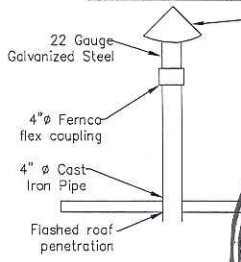
- 4" Diameter Perforated PVC Pipe Under Grade Beam
- 4" Diameter Riser Vent to Roof
- Stego 15-mil. Waterproofing Membrane
- Basement Floor to be Constructed Directly Above Water Table
- Proposed Soil Vapor Point and Vacuum Point
- PVC 90°
- PVC End Cap



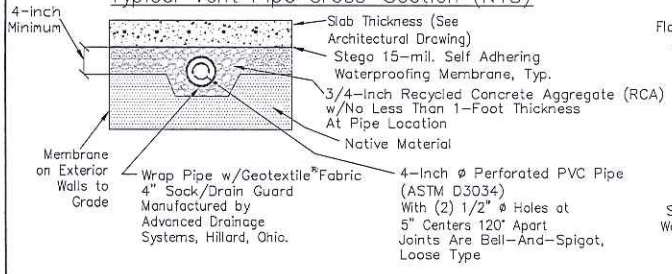
Typical Cast Iron Connection Detail (NTS)



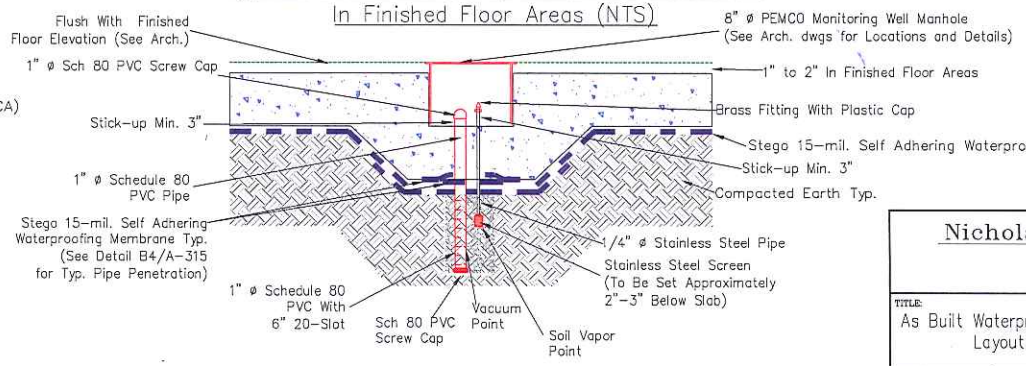
Above Roof Detail (NTS)



Typical Vent Pipe Cross-Section (NTS)



Typical Combined Soil Vapor And Vacuum Points In Finished Floor Areas (NTS)



Nicholas A. Andrianas, P.E.
28 Henry Street
Kings Park, New York 11754

TITLE: As Built Waterproofing Membrane/SSDS Layout for Building 3	DATE: 9/29/2014
	SCALE: AS SHOWN
FIGURE: 10c	DRAWN BY: T.R.B.
DRAWING NO: Building 3	APPR. BY: N.A.A.

Lebanon West Farms II
1160 Lebanon Street &
1172 & 1175 E. Tremont Ave
Bronx, New York

H:\Drawings\Phipps Lebanon West\SMP\Figure 10c

Rich Izzo

From: Jessica Proscia
Sent: Wednesday, June 04, 2014 11:52 AM
To: 'Dana Kaplan'
Cc: Rich Izzo; Michael Wadman
Subject: RE: Lebanon West Farms C203060 Bronx County _ Subslab Soil Vapor Data and Passive System Operation

Dana, great, thank you.

From: Dana Kaplan [mailto:dpkaplan@gw.dec.state.ny.us]
Sent: Wednesday, June 04, 2014 10:51 AM
To: Jessica Proscia
Cc: Rich Izzo; Michael Wadman
Subject: Fwd: Lebanon West Farms C203060 Bronx County _ Subslab Soil Vapor Data and Passive System Operation

Jessica,

I reviewed the sub-slab soil vapor data for the three Lebanon West Farms buildings that you submitted 5/22 and discussed it with DOH. Based on this data we agree that passive operation of the SSD systems is sufficient. Note that this decision is based on the data as submitted and a DUSR for the data should be included with the Final Engineering Report.

Dana

>>> "Boyd, Bridget (HEALTH)" <bridget.boyd@health.ny.gov> 6/4/2014 7:51 AM >>>
Dear Dana:
I have reviewed the results of the sub-slab soil vapor sampling conducted at the above-referenced site. Based on that review, I have no objection the passive operation of the sub-slab depressurization system and believe that the evaluation of the potential for soil vapor intrusion at the buildings sampled is complete at this time. If you have any questions, please contact me at the number below.
Sincerely,
Bridget

****PLEASE NOTE NAME AND EMAIL CHANGES BELOW****

Bridget K. Boyd (née Callaghan)
Public Health Specialist II
Bureau of Environmental Exposure Investigation
New York State Department of Health
Empire State Plaza, Corning Tower, Room 1787
Albany, NY 12237
Phone: (518) 402-7860
Fax: (518) 402-7859
Email: bridget.boyd@health.ny.gov

From: Dana Kaplan [mailto:dpkaplan@gw.dec.state.ny.us]
Sent: Thursday, May 22, 2014 5:06 PM

To: boyd, bridget (HEALTH)
Subject: Fwd: Lebanon West Farms Sub-Slab Vapor Results

Hi Bridget, please see below proposal regarding sub-slab soil vapor at the Lebanon West Farms site. The decision doc for this site did not require vapor mitigation, but required that future buildings be evaluated for the potential for SVI. Since the buildings are completed they did the sub-slab sampling already. They installed SSDS piping during development as a contingency.

thanks
Dana

>>> Jessica Proscia <JProscia@carichinc.com> 5/22/2014 11:16 AM >>>
Good morning Dana, attached is the analytical laboratory data, associated table, and figures depicting the sample designations for each building. Samples SSV-4 and SSV-6 were unable to be analyzed due to the limited amount of volume that accumulated in the sampler. Based upon our review of the sub-slab vapor data we recommend that the SSD system remain passive. The passive SSD system along with the vapor barrier should be more than sufficient for the protection of the indoor air quality. Please feel free to contact me with any questions or concerns.

Jessica E. Proscia
Environmental Scientist
CA Rich Consultants, Inc.
17 Dupont Street
Plainview, NY 11803
Phone: (516) 576-8844
Fax: (516) 576-0093
Email: JProscia@carichinc.com
Website: www.carichinc.com

APPENDIX E

Health & Safety and Community Air monitoring Plan

APPENDIX E

Health & Safety Plan and Community Air Monitoring Plan

for

Lebanon West Farms I and II
Bronx, New York

Prepared by

CA RICH CONSULTANTS, INC.
17 Dupont Street
Plainview, NY 11803
(516) 576-8844

TABLE OF CONTENTS

Health & Safety Plan and Community Air Monitoring Plan

for

Lebanon West Farms I and II
Bronx, New York

1.0 INTRODUCTION

This Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) is developed for utilization during implementation of the Site Management Plan (SMP) at the above referenced location (the Site). The HASP is to be enforced by CA RICH's Project Health and Safety Manager and the on-site Health & Safety Coordinator (HSC) or his/her designee. The on-site HSC will interface with the Project Manager and is vested with the authority to make field decisions including the termination of on-site activities if an imminent health and safety hazard, condition or related concern arises. Information and protocol in the HASP is applicable to all on-site personnel who will be entering the designated work zone.

2.0 POTENTIAL HAZARDS

2.1 Chemical Hazards

Based on the results of the Remedial Investigation (RI), the known contaminants of concern are in on-site soils beneath the composite cover system (i.e. the residuals management zone) are as follows; benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene; the pesticides dieldrin, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT; and, the metals arsenic, barium, cadmium, trivalent and hexavalent chromium, copper, lead, mercury, nickel, and zinc. The known contaminants in groundwater contaminants are the Volatile Organic Compounds (VOCs) Methyl Tertiary Butyl Ether (MTBE), cis-1,2-Dichloroethene, trichloroethene, and tetrachloroethene; and the naturally occurring metals manganese and sodium. The following VOCs were also identified in the soil vapor beneath the Site: acetone, benzene, carbon disulfide, chloromethane, cyclohexane, dichlorodifluoromethane, ethanol, ethyl acetate, heptane, hexane, isopropyl alcohol, methylene chloride, methyl ethyl ketone, propylene, 2,2,4-trimethylpentane, tertiary butyl alcohol, tetrachloroethylene, tetrahydrofuran, toluene, trichloroethylene, m,p-Xylene, and total xylenes.

The organic chemicals listed above are described as "sweet" or "aromatic" smelling and are narcotic in high concentrations. Acute exposure to significant concentrations of these chemicals can cause irritation of the skin, eyes and mucus membrane, headache, dizziness, nausea, and in high enough concentrations, loss of consciousness and death *(Sax, 1984)*. These compounds are suspected to be carcinogenic with chronic exposure.

Physical properties and additional toxicological information is included in Appendix A.

2.2 Other Health & Safety Risks

Normal physical hazards associated with using drilling and excavation equipment and hand tools as well as hazards associated with adverse climatic conditions (heat & cold) or physical site-related debris represent a certain degree of risk to be assumed by on-site personnel.

Certain provisions in this HASP, specifically the use of personnel protective equipment, may tend to increase the risk of physical injury, as well as susceptibility to cold or heat stress. This is primarily due to restrictions in dexterity, hearing, sight, and normal body heat transfer inherent in the use of protective gear.

3.0 RISK MANAGEMENT

3.1 Work / Exclusion Zones

For each proposed remedial activity (eg. soil excavation, soil and groundwater sampling, etc.), a work/exclusion zone will be established. Access to this area will be limited to properly trained, properly protected personnel directly involved with activity. Enforcement of the work/exclusion zone boundaries is the responsibility of the on-site Health & Safety Coordinator.

3.2 Personnel Protection

Health & Safety regulatory personnel have developed different levels of personnel protection to deal with differing degrees of potential risks of exposure to chemical constituents. The levels are designated as **A, B, C,** and **D** and are ranked according to the amount of personnel protection afforded by each level. Level **A** is the highest level of protection and Level **D** is the lowest level of protection.

The different levels are primarily dependent upon the degree of respiratory protection necessary, in conjunction with appropriate protective clothing. Levels of protection mandate a degree of respiratory protection. However, flexibility exists within the lower levels (B, C, and D) concerning proper protective clothing.

The four levels of protection were developed for utilization in situations which involve suspected or known atmospheric and/or environmental hazards including airborne contamination and skin-affecting substances.

It is anticipated that all of the investigation work will be performed using Level D protection (no respiratory protection with protective clothing requirements limited to long sleeved shirts, long pants or coveralls, work gloves and steel-toe leather work boots).

Level D may be modified by the HSC to include protective clothing or equipment (Saran-coated disposable coveralls or PVC splash suits, safety glasses, hard hat with face shield, and chemically resistant boots) based upon physical hazards, skin contact concerns, and real-time monitoring.

Real-time air monitoring for total airborne organics using either a Photo-Ionization Detector (PID) or a Flame-Ionization Detector (FID) will determine if and when an upgrade from Level D to a higher level of respiratory protection is warranted. Decisions for an upgrade from Level D to higher levels of protection, mitigative actions, and/or suspension of work are the responsibility of the Project Manager and/or the designated on-site HSC.

3.3 Air Monitoring

The HSC or his/her properly trained assignee will conduct ‘Real Time’ air monitoring for total organic vapors. 'Real time' monitoring refers to the utilization of instrumentation, which yields immediate measurements. The utilization of real time monitoring helps determine immediate or long-term risks to on-site personnel and the general public, the appropriate level of personnel respiratory protection necessary, and actions to mitigate the recognized hazard. Air monitoring will be conducted in accordance with NYSDOH’s Community Air Monitoring Program.

3.3.1. Particulate Monitoring

a. Instrumentation

Dust particulates in air will be monitored using a light scattering technique MINIRAM Model PDM-3 Miniature Real-time Aerosol Monitor (MINIRAM) or equivalent. The MINIRAM is capable of measuring airborne dust particles within the range of 10 to 100,000 micrograms per cubic meter ($\mu g/m^3$).

b. Application

Dust monitoring will occur at regular intervals of excavation work activities. Monitoring will be conducted in upgradient and downgradient locations, relative to prevailing wind direction along the perimeter of the work zone. The HSC or his designee will perform monitoring. As outlined in the NYSDOH Community Air Monitoring Plan, if particulate levels in the downwind location are 150 mg/m^3 greater than those measured in the upwind location, dust suppression techniques shall be employed.

3.3.2. Organic Vapor

A. Instrumentation

Real time monitoring for Total Organic Vapor (TOV) utilizes either a PID or FID. The appropriate PID is an intrinsically safe Minirae 2000 PID or equivalent, which is factory calibrated to benzene. The appropriate FID is a Foxboro model 128 Organic Vapor Analyzer (OVA), which is factory calibrated to methane.

B. Application

Organic vapor monitoring is performed as outlined in the NYSDOH Community Air Monitoring Plan. Specifically, monitoring shall be conducted at the downwind perimeter of the work zone periodically during work activities. If total organic vapor (TOV) levels exceed 5 milligrams per meter cubed (mg/m^3) above established pre-work background levels, work activities will be halted and monitoring will be continued under the provision of a Vapor Emission Response Plan (outlined in Section 5).

3.4 Worker Training

Personnel working in the contamination area must be trained, fit-tested, and medically-certified (OSHA 29 CFR 1910. 134).

All personnel working within the work/exclusion area must confirm their participation in an ongoing health-surveillance program. The program must consist of an initial "baseline" examination stipulated by OSHA (29 CFR 1910. 134). The examination is designed to screen for evidence of adverse effects of occupational exposure (particularly to toxic substances) and determine personnel fitness with respect to the use of respiratory protection.

Each worker enlisted in the medical surveillance program receives an annual examination similar to the baseline exam to evaluate irregularities or trends in his/her health with respect to potential exposure. Upon termination of employment, contract/subcontract or job completion, each worker/employee must take an 'exit examination' identical to the annual exam. All physicals will be performed by licensed physicians with medical histories to be confidentially maintained by their employer.

Prior to any work, all workers involved with the project should be aware of the potential chemical, physical and biological hazards discussed in this document, as well as the general safety

practices outlined below. A safety briefing by the on-site HSC and/or assistant designee shall take place at the outset of work activities.

3.5 General Safety Practices

The following safety practices shall be followed by all project personnel:

1. Avoid unnecessary skin exposure to subsurface materials. Sleeved shirts tucked into long pants (or coveralls), work gloves, and steel-toe leather work boots are required unless modified gear is approved by the HSC. Remove any excess residual soil from clothes prior to leaving the site.

2. No eating, drinking, gum or tobacco chewing, or smoking allowed in designated work areas. Thoroughly wash hands prior to these activities outside the work area. Avoid sitting on the ground during breaks or while eating and drinking. Thoroughly wash all exposed body areas at the end of the workday.

3. Some symptoms of acute exposure include: dizziness, light-headedness, drowsiness, headache, and nose/eye/skin irritation. If these symptoms are experienced or strong odor is detected, leave the work area and immediately report the incident to the on-site HSC.

3.6 Enforcement

Enforcement of the Site Safety Plan will be the responsibility of the HSC or his/her designee. The HSC or his/her designee should be on-site on a full-time basis and perform or directly oversee all aspects of Project Health & Safety operations including: air monitoring; environmental mitigation; personnel respiratory and skin protection; general safety practices; documentation; emergency procedures and protocol; and reporting and recordkeeping as described below.

3.7 Reporting & Recordkeeping

Incidents involving injury, symptoms of exposure, discovery of contained (potentially hazardous) materials, or unsafe work practices and/or conditions should be immediately reported to the HSC.

A logbook must be maintained on-site to document all aspects of HASP enforcement. The log is paginated and dated with entries made on a daily basis in waterproof ink, initialed by the HSC or designee. Log entries should include date and time of instrument monitoring, instrument type, measurement method, test results, calibration and maintenance information, as well as appropriate mitigative actions responding to detections. Miscellaneous information to be logged may include weather conditions, reported complaints or symptoms, regulatory inspections, and reasons to upgrade personnel protection above the normal specification (Level D).

4.0 EMERGENCIES

4.1 EMERGENCY RESPONSE SERVICES

(1)	**HOSPITAL** New York Foundling Hospital 2094 Boston Post Road Bronx, New York 10460	**(718) 617-4382**
(2)	**AMBULANCE**	**911**
(3)	**FIRE DEPARTMENT** **HAZARDOUS MATERIALS**	**911**
(4)	**POLICE DEPARTMENT**	**911**
(5)	**POISON CONTROL CENTER**	**(800) 222-1222**

The preceding list and associated attached map (Figure 1) illustrating the fastest route to the nearest hospital must be conspicuously posted in areas of worker congregation and adjacent to all on-site telephones (if any).

4.2 EMERGENCY PROCEDURES

4.2.1 Contact or Exposure to Suspected Hazardous Materials

In the event of a fire, chemical discharge, medical emergency, workers are instructed to immediately notify the HSC and proper emergency services (posted). Should physical contact with unknown or questionable materials occur, immediately wash the affected body areas with clean water and notify the HSC. Anyone experiencing symptoms of exposure should exit the work area, notify the HSC, and seek medical attention.

4.2.2 Personnel Decontamination, First Aid, and Fire Protection

The first step in the treatment of skin exposure to most chemicals is to rinse the affected area with water. For this reason, adequate amounts of potable water and soap are maintained on-site in a clearly designated and readily-accessible location. Portable emergency eyewash stations and a first aid kit must be made available and maintained in the same locations as the potable water. Fire extinguishers are also to be maintained on-site in designated locations. All on-site personnel are to be made aware of the locations of the above-mentioned on-site Health & Safety accommodations during the initial Health and Safety briefing.

4.2.3 Ingress/egress

Clear paths of ingress/egress to work zones and site entrances/exits must be maintained at all times. Unauthorized personnel are restricted from accessing the Site.

5.0 VAPOR EMISSIONS REPONSE PLAN

If the ambient air concentration of organic vapors exceeds 5 mg/m^3 above background at the perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor level decreases below 5 mg/m^3 above background, work activities can resume. If the organic vapor levels are greater than 5 mg/m^3 over background but less than 25 ppm over background at the perimeter of the work area, activities can resume provided:

- The organic vapor level 200 ft. downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 mg/m^3 over background.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the HSC will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

Major Vapor Emission

If any organic levels greater than 5 mg/m^3 over background are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 mg/m^3 above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and, if organic vapor levels are approaching 5 mg/m^3 above background for more than 30 minutes in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect;

However, the Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels are greater than 10 mg/m^3 above background.

Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in the HASP of the Corrective Action Plan will be notified.

2. The local police authorities will immediately be contacted by the HSC and advised of the situation.

3. Frequent air monitoring will be conducted at 30 minute intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the HSC.

6.0 HEALTH & SAFETY PLAN REFERENCES

1. American Conference Governmental Industrial Hygienists, 1989; Threshold Limit Values and Biological Exposure Indices, 111 Pp.

2. Geoenvironmental Consultants, Inc.; 1987; Safety & Operations At Hazardous Materials Sites

3. NIOSH Guide To Chemical Hazards, 2002, US Department Of Health And Human Services, Centers For Disease Control

4. US Department Of Labor Occupational Safety & Health Administration, 1989; Hazardous Waste Operations And Emergency Response Interim Final Rule, 29 CFR Part 1910

5. Sax, N. I. Dangerous Properties Of Industrial Materials; © 1984

7.0 KEY PERSONNEL

Responsibility	Name and Phone Number	Task Description
Project Manager	Jessica Proscia (516) 576-8844	Oversee and coordinate all technical aspects for the project
Site Safety Officer	Jason Cooper (516) 576-8844	Coordinate and inspect all health and safety operations from the project site
Client Representative:	Michael Wadman 212-243-9090	
Project Manager Alternate:	Richard Izzo (516) 576-8844	
Site Safety Officer Alternate:	Victoria Whelan (516) 576-8844	

Figure 1
Route to Hospital

Site Location: 1160 Lebanon Street, Bronx, New York

Nearest Hospital Name: East Tremont Medical Center

Hospital Location: 930 East Tremont Avenue, Bronx, NY 10460

Hospital Telephone: (718) 860-1111

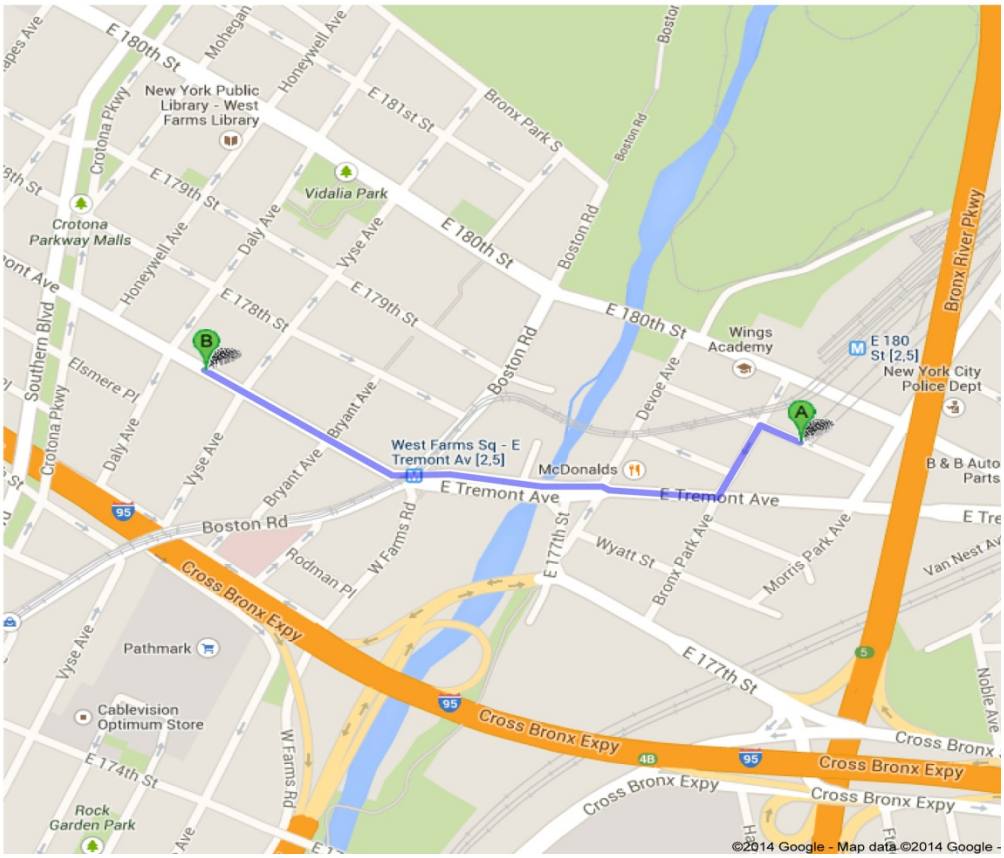
Directions to the Hospital:

1. Head northwest on Lebanon St toward Bronx Park Ave
2. Take the 1st left onto Bronx Park Ave
4. Take the 2nd right onto E Tremont Ave
5.

Total Distance: 0.5 miles

Total Estimated Time: 2 minutes

Map Showing Route from the Site to the Hospital:



Attachment

E-1 Physical Properties and Toxicological Information for Suspected Chemicals

Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

Arsenic (inorganic compounds, as As)

Synonyms & Trade Names Arsenic metal: Arsenia
Other synonyms vary depending upon the specific As compound. [Note: OSHA considers "Inorganic Arsenic" to mean copper acetoarsenite and all inorganic compounds containing arsenic except ARSINE.]

CAS No. 7440-38-2 (metal)	**RTECS No.** CG0525000 (metal) (/niosh-rtecs/CG802C8.html)	**DOT ID & Guide** 1558 152 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=152) (metal) 1562 152 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=152) (dust)
Formula As (metal)	**Conversion**	**IDLH** Ca [5 mg/m^3 (as As)] See: 7440382 (/niosh/idlh/7440382.html)
Exposure Limits **NIOSH REL** : Ca C 0.002 mg/m^3 [15-minute] See Appendix A (nengapdxa.html) **OSHA PEL** : [1910.1018] TWA 0.010 mg/m^3		**Measurement Methods** **NIOSH** 7300 (/niosh/docs/2003-154/pdfs/7300.pdf), 7301 (/niosh/docs/2003-154/pdfs/7301.pdf), 7303 (/niosh/docs/2003-154/pdfs/7303.pdf), 7900 (/niosh/docs/2003-154/pdfs/7900.pdf), 9102 (/niosh/docs/2003-154/pdfs/9102.pdf); **OSHA** ID105 (http://www.osha.gov/dts/sltc/methods/inorganic/id105/id105.html) See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description Metal: Silver-gray or tin-white, brittle, odorless solid.

MW: 74.9	**BP:** Sublimes	MLT: 1135°F (Sublimes)	**Sol:** Insoluble	**VP:** 0 mmHg (approx)	**IP:** NA
Sp.Gr: 5.73 (metal)	**Fl.P:** NA	**UEL:** NA	**LEL:** NA		

Metal: Noncombustible Solid in bulk form, but a slight explosion hazard in the form of dust when exposed to flame.

Incompatibilities & Reactivities Strong oxidizers, bromine azide [Note: Hydrogen gas can react with inorganic arsenic to form the highly toxic gas arsine.]

Exposure Routes inhalation, skin absorption, skin and/or eye contact, ingestion

Symptoms Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, resp irritation, hyperpigmentation of skin, [potential occupational carcinogen]

Target Organs Liver, kidneys, skin, lungs, lymphatic system

Cancer Site [lung & lymphatic cancer]

Personal Protection/Sanitation (See protection codes (protect.html))
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated/Daily
Remove: When wet or contaminated
Change: Daily
Provide: Eyewash, Quick drench

First Aid (See procedures (firstaid.html))
Eye: Irrigate immediately
Skin: Soap wash immediately
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations
(See Appendix E) (nengapdxe.html)

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted acid gas canister having an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 0013 (/niosh/ipcsneng/neng0013.html)
See MEDICAL TESTS: 0017 (/niosh/docs/2005-110/nmed0017.html)

Page last reviewed: April 4, 2011
Page last updated: November 18, 2010
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day -
cdcinfo@cdc.gov

Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

Barium chloride (as Ba)

Synonyms & Trade Names Barium dichloride

CAS No. 10361-37-2	**RTECS No.** CQ8750000 (/niosh-rtecs/CQ8583B0.html)	**DOT ID & Guide** 1564 154 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=154) (barium compound, n.o.s.)
Formula $BaCl_2$	**Conversion**	**IDLH** 50 mg/m^3 (as Ba) See: IDLH INDEX (/idlh/intridl4.html)

Exposure Limits

NIOSH REL *: TWA 0.5 mg/m^3 [*Note: The REL also applies to other soluble barium compounds (as Ba) except Barium sulfate.]

OSHA PEL *: TWA 0.5 mg/m^3 [*Note: The PEL also applies to other soluble barium compounds (as Ba) except Barium sulfate.]

Measurement Methods

NIOSH 7056 (/niosh/docs/2003-154/pdfs/7056.pdf), 7303 (/niosh/docs/2003-154/pdfs/7303.pdf);

OSHA ID121 (http://www.osha.gov/dts/sltc/methods/inorganic/id121/id121.html)

See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description White, odorless solid.

MW:	BP:	MLT:	Sol:	VP:	IP:
208.2	2840°F	1765°F	38%	Low	?

Sp.Gr:	Fl.P:	UEL:	LEL:
3.86	NA	NA	NA

Noncombustible Solid

Incompatibilities & Reactivities Acids, oxidizers

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms irritation eyes, skin, upper respiratory system; skin burns; gastroenteritis; muscle spasm; slow pulse, extrasystoles; hypokalemia

Target Organs Eyes, skin, respiratory system, heart, central nervous system

Personal Protection/Sanitation (See protection codes (protect.html))
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated

First Aid (See procedures (firstaid.html))
Eye: Irrigate immediately
Skin: Water flush immediately
Breathing: Respiratory support
Swallow: Medical attention immediately

Remove: When wet or contaminated **Change:** Daily	

Respirator Recommendations

NIOSH/OSHA

Up to 5 mg/m^3:
(APF = 10) Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
(APF = 10) Any supplied-air respirator

Up to 12.5 mg/m^3:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode
(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter.

Up to 25 mg/m^3:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
(APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Up to 50 mg/m^3:
(APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 0614 (/niosh/ipcsneng/neng0614.html)

Page last reviewed: April 4, 2011
Page last updated: November 18, 2010
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day - cdcinfo@cdc.gov

Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

Chromium metal

Synonyms & Trade Names Chrome, Chromium

CAS No. 7440-47-3	RTECS No. GB4200000 (/niosh-rtecs/GB401640.html)	DOT ID & Guide
Formula Cr	**Conversion**	**IDLH** 250 mg/m^3 (as Cr) See: 7440473 (/niosh/idlh/7440473.html)

Exposure Limits
NIOSH REL : TWA 0.5 mg/m^3 See Appendix C (nengapdxc.html)
OSHA PEL *: TWA 1 mg/m^3 See Appendix C (nengapdxc.html) [*Note: The PEL also applies to insoluble chromium salts.]

Measurement Methods
NIOSH 7024 (/niosh/docs/2003-154/pdfs/7024.pdf), 7300 (/niosh/docs/2003-154/pdfs/7300.pdf), 7301 (/niosh/docs/2003-154/pdfs/7301.pdf), 7303 (/niosh/docs/2003-154/pdfs/7303.pdf), 9102 (/niosh/docs/2003-154/pdfs/9102.pdf) ;
OSHA ID121 (http://www.osha.gov/dts/sltc/methods/inorganic/id121/id121.html), ID125G (http://www.osha.gov/dts/sltc/methods/inorganic/id125g/id125g.html)
See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description Blue-white to steel-gray, lustrous, brittle, hard, odorless solid.

MW: 52.0	BP: 4788°F	MLT: 3452°F	Sol: Insoluble	VP: 0 mmHg (approx)	IP: NA
Sp.Gr: 7.14	Fl.P: NA	UEL: NA	LEL: NA		

Noncombustible Solid in bulk form, but finely divided dust burns rapidly if heated in a flame.

Incompatibilities & Reactivities Strong oxidizers (such as hydrogen peroxide), alkalis

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms irritation eyes, skin; lung fibrosis (histologic)

Target Organs Eyes, skin, respiratory system

Personal Protection/Sanitation (See protection codes (protect.html))	First Aid (See procedures (firstaid.html))
Skin: No recommendation **Eyes:** No recommendation	**Eye:** Irrigate immediately **Skin:** Soap wash **Breathing:** Respiratory support

Wash skin: No recommendation **Remove:** No recommendation **Change:** No recommendation	**Swallow:** Medical attention immediately

Respirator Recommendations

NIOSH

Up to 2.5 mg/m^3:
(APF = 5) Any quarter-mask respirator.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.*

Up to 5 mg/m^3:
(APF = 10) Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.*
(APF = 10) Any supplied-air respirator*

Up to 12.5 mg/m^3:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode*
(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter.*

Up to 25 mg/m^3:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter*
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Up to 250 mg/m^3:
(APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 0029 (/niosh/ipcsneng/neng0029.html)

Page last reviewed: April 4, 2011
Page last updated: November 18, 2010
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day - cdcinfo@cdc.gov

Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

Coal tar pitch volatiles

Synonyms & Trade Names Synonyms vary depending upon the specific compound (e.g., pyrene, phenanthrene, acridine, chrysene, anthracene & benzo(a)pyrene). [Note: NIOSH considers coal tar, coal tar pitch, and creosote to be coal tar products.]

CAS No.	RTECS No.	DOT ID & Guide
65996-93-2	GF8655000 (/niosh-rtecs/GF841098.html)	2713 153 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=153) (acridine)
	Conversion	**IDLH** Ca [80 mg/m^3] See: 65996932 (/niosh/idlh/65996932.html)

Exposure Limits

NIOSH REL : Ca TWA 0.1 mg/m^3 (cyclohexane-extractable fraction)
See Appendix A (nengapdxa.html)
See Appendix C (nengapdxc.html)
OSHA PEL : TWA 0.2 mg/m^3 (benzene-soluble fraction) [1910.1002] See Appendix C (nengapdxc.html)

Measurement Methods
OSHA 58 (http://www.osha.gov/dts/sltc/methods/organic/org058/org058.html)
See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description Black or dark-brown amorphous residue.

Properties vary depending upon the specific compound.					

Combustible Solids

Incompatibilities & Reactivities Strong oxidizers

Exposure Routes inhalation, skin and/or eye contact

Symptoms dermatitis, bronchitis, [potential occupational carcinogen]

Target Organs respiratory system, skin, bladder, kidneys

Cancer Site [lung, kidney & skin cancer]

Personal Protection/Sanitation (See protection codes (protect.html))	First Aid (See procedures (firstaid.html))
Skin: Prevent skin contact **Eyes:** Prevent eye contact **Wash skin:** Daily **Remove:** No recommendation **Change:** Daily	**Eye:** Irrigate immediately **Skin:** Soap wash immediately **Breathing:** Respiratory support **Swallow:** Medical attention immediately

Respirator Recommendations

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister having an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 1415 (/niosh/ipcsneng/neng1415.html) See MEDICAL TESTS: 0054 (/niosh/docs/2005-110/nmed0054.html)

Page last reviewed: April 4, 2011
Page last updated: November 18, 2010
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day - cdcinfo@cdc.gov

Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

DDT

Synonyms & Trade Names p,p'-DDT; Dichlorodiphenyltrichloroethane; 1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane

CAS No. 50-29-3	**RTECS No.** KJ3325000 (/niosh-rtecs/KJ32BC48.html)	**DOT ID & Guide** 2761 151 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=151)
Formula $(C_6H_4Cl)_2CHCCl_3$	**Conversion**	**IDLH** Ca [500 mg/m^3] See: 50293 (/niosh/idlh/50293.html)
Exposure Limits **NIOSH REL** : Ca TWA 0.5 mg/m^3 See Appendix A (nengapdxa.html) **OSHA PEL** : TWA 1 mg/m^3 [skin]		**Measurement Methods** **NIOSH** S274 (II-3) See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description Colorless crystals or off-white powder with a slight, aromatic odor. [pesticide]

MW: 354.5	**BP:** 230°F (Decomposes)	MLT: 227°F	**Sol:** Insoluble	**VP:** 0.0000002 mmHg	**IP:** ?
Sp.Gr: 0.99	**Fl.P:** 162-171°F	**UEL:** ?	**LEL:** ?		

Combustible Solid

Incompatibilities & Reactivities Strong oxidizers, alkalis

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms irritation eyes, skin; paresthesia tongue, lips, face; tremor; anxiety, dizziness, confusion, malaise (vague feeling of discomfort), headache, lassitude (weakness, exhaustion); convulsions; paresis hands; vomiting; [potential occupational carcinogen]

Target Organs Eyes, skin, central nervous system, kidneys, liver, peripheral nervous system

Cancer Site [in animals: liver, lung & lymphatic tumors]

Personal Protection/Sanitation (See protection codes (protect.html)) **Skin:** Prevent skin contact	**First Aid** (See procedures (firstaid.html)) **Eye:** Irrigate immediately **Skin:** Soap wash promptly

Eyes: Prevent eye contact **Wash skin:** When contaminated/Daily **Remove:** When wet or contaminated **Change:** Daily **Provide:** Eyewash, Quick drench	**Breathing:** Respiratory support **Swallow:** Medical attention immediately

Respirator Recommendations

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister having an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 0034 (/niosh/ipcsneng/neng0034.html) See MEDICAL TESTS: 0065 (/niosh/docs/2005-110/nmed0065.html)

Page last reviewed: April 4, 2011
Page last updated: November 18, 2010
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day - cdcinfo@cdc.gov

Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

Dieldrin

Synonyms & Trade Names HEOD; 1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo,exo-5,8-dimethanonaphthalene

CAS No. 60-57-1	**RTECS No.** IO1750000 (/niosh-rtecs/IO1AB3F0.html)	**DOT ID & Guide** 2761 151 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=151)
Formula $C_{12}H_8Cl_6O$	**Conversion**	**IDLH** Ca [50 mg/m^3] See: 60571 (/niosh/idlh/60571.html)
Exposure Limits **NIOSH REL** : Ca TWA 0.25 mg/m^3 [skin] See Appendix A (nengapdxa.html) **OSHA PEL** : TWA 0.25 mg/m^3 [skin]		**Measurement Methods** **NIOSH** S283 (II-3) See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description Colorless to light-tan crystals with a mild, chemical odor. [insecticide]

MW:	BP:	MLT:	Sol:	VP(77°F):	IP:
380.9	Decomposes	349°F	0.02%	8 x 10^{-7} mmHg	?
Sp.Gr: 1.75	**Fl.P:** NA	**UEL:** NA	**LEL:** NA		

Noncombustible Solid

Incompatibilities & Reactivities Strong oxidizers, active metals such as sodium, strong acids, phenols

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms headache, dizziness; nausea, vomiting, malaise (vague feeling of discomfort), sweating; myoclonic limb jerks; clonic, tonic convulsions; coma; [potential occupational carcinogen]; in animals: liver, kidney damage

Target Organs central nervous system, liver, kidneys, skin

Cancer Site [in animals: lung, liver, thyroid & adrenal gland tumors]

Personal Protection/Sanitation (See protection codes (protect.html))
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated/Daily
Remove: When wet or contaminated
Change: Daily
Provide: Eyewash, Quick drench

First Aid (See procedures (firstaid.html))
Eye: Irrigate immediately
Skin: Soap wash immediately
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister having an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 0787 (/niosh/ipcsneng/neng0787.html) See MEDICAL TESTS: 0077 (/niosh/docs/2005-110/nmed0077.html)

Page last reviewed: April 4, 2011
Page last updated: November 18, 2010
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day - cdcinfo@cdc.gov

Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

Lead

Synonyms & Trade Names Lead metal, Plumbum

CAS No. 7439-92-1	RTECS No. OF7525000 (/niosh-rtecs/OF72D288.html)	DOT ID & Guide
Formula Pb	**Conversion**	**IDLH** 100 mg/m^3 (as Pb) See: 7439921 (/niosh/idlh/7439921.html)

Exposure Limits

NIOSH REL *: TWA (8-hour) 0.050 mg/m^3 See Appendix C (nengapdxc.html) [*Note: The REL also applies to other lead compounds (as Pb) -- see Appendix C.]

OSHA PEL *: [1910.1025] TWA 0.050 mg/m^3 See Appendix C (nengapdxc.html) [*Note: The PEL also applies to other lead compounds (as Pb) -- see Appendix C.]

Measurement Methods

NIOSH 7082 (/niosh/docs/2003-154/pdfs/7082.pdf), 7105 (/niosh/docs/2003-154/pdfs/7105.pdf), 7300 (/niosh/docs/2003-154/pdfs/7300.pdf), 7301 (/niosh/docs/2003-154/pdfs/7301.pdf), 7303 (/niosh/docs/2003-154/pdfs/7303.pdf), 7700 (/niosh/docs/2003-154/pdfs/7700.pdf), 7701 (/niosh/docs/2003-154/pdfs/7701.pdf), 7702 (/niosh/docs/2003-154/pdfs/7702.pdf), 9100 (/niosh/docs/2003-154/pdfs/9100.pdf), 9102 (/niosh/docs/2003-154/pdfs/9102.pdf), 9105 (/niosh/docs/2003-154/pdfs/9105.pdf);
OSHA ID121 (http://www.osha.gov/dts/sltc/methods/inorganic/id121/id121.html), ID125G (http://www.osha.gov/dts/sltc/methods/inorganic/id125g/id125g.html), ID206 (http://www.osha.gov/dts/sltc/methods/inorganic/id206/id206.html)
See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description A heavy, ductile, soft, gray solid.

MW: 207.2	BP: 3164°F	MLT: 621°F	Sol: Insoluble	VP: 0 mmHg (approx)	IP: NA
Sp.Gr: 11.34	Fl.P: NA	UEL: NA	LEL: NA		

Noncombustible Solid in bulk form.

Incompatibilities & Reactivities Strong oxidizers, hydrogen peroxide, acids

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition;

constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation eyes; hypertension

Target Organs Eyes, gastrointestinal tract, central nervous system, kidneys, blood, gingival tissue

Personal Protection/Sanitation (See protection codes (protect.html))
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: Daily
Remove: When wet or contaminated
Change: Daily

First Aid (See procedures (firstaid.html))
Eye: Irrigate immediately
Skin: Soap flush promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations
(See Appendix E) (nengapdxe.html)
NIOSH/OSHA

Up to 0.5 mg/m^3:
(APF = 10) Any air-purifying respirator with an N100, R100, or P100 filter (including N100, R100, and P100 filtering facepieces) except quarter-mask respirators.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
(APF = 10) Any supplied-air respirator

Up to 1.25 mg/m^3:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode
(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate filter.

Up to 2.5 mg/m^3:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
(APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Up to 50 mg/m^3:
(APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode

Up to 100 mg/m^3:
(APF = 2000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 0052 (/niosh/ipcsneng/neng0052.html) See MEDICAL TESTS: 0127 (/niosh/docs/2005-110/nmed0127.html)

Page last reviewed: April 4, 2011
Page last updated: November 18, 2010
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day - cdcinfo@cdc.gov

Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

Mercury compounds [except (organo) alkyls] (as Hg)

Synonyms & Trade Names Mercury metal: Colloidal mercury, Metallic mercury, Quicksilver
Synonyms of "other" Hg compounds vary depending upon the specific compound.

CAS No. 7439-97-6 (metal)	**RTECS No.** OV4550000 (metal) (/niosh-rtecs/OV456D70.html)	**DOT ID & Guide** 2809 172 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=172) (metal)
Formula Hg (metal)	**Conversion**	**IDLH** 10 mg/m^3 (as Hg) See: 7439976 (/niosh/idlh/7439976.html)
Exposure Limits **NIOSH REL** : Hg Vapor: TWA 0.05 mg/m^3 [skin] Other: C 0.1 mg/m^3 [skin] **OSHA PEL** † (nengapdxg.html): TWA 0.1 mg/m^3		**Measurement Methods** **NIOSH** 6009 (/niosh/docs/2003-154/pdfs/6009.pdf); **OSHA** ID140 (http://www.osha.gov/dts/sltc/methods/inorganic/id140/id140.html) See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description Metal: Silver-white, heavy, odorless liquid. [Note: "Other" Hg compounds include all inorganic & aryl Hg compounds except (organo) alkyls.]

MW:	BP:	FRZ:	Sol:	VP:	IP:
200.6	674°F	-38°F	Insoluble	0.0012 mmHg	?

Sp.Gr:	Fl.P:	UEL:	LEL:
13.6 (metal)	NA	NA	NA

Metal: Noncombustible Liquid

Incompatibilities & Reactivities Acetylene, ammonia, chlorine dioxide, azides, calcium (amalgam formation), sodium carbide, lithium, rubidium, copper

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms irritation eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, indecision, headache, lassitude (weakness, exhaustion); stomatitis, salivation; gastrointestinal disturbance, anorexia, weight loss; proteinuria

Target Organs Eyes, skin, respiratory system, central nervous system, kidneys

Personal Protection/Sanitation (See protection codes (protect.html))	**First Aid** (See procedures (firstaid.html)) **Eye:** Irrigate immediately

Skin: Prevent skin contact **Eyes:** No recommendation **Wash skin:** When contaminated **Remove:** When wet or contaminated **Change:** Daily	**Skin:** Soap wash promptly **Breathing:** Respiratory support **Swallow:** Medical attention immediately

Respirator Recommendations

Mercury vapor:

NIOSH

Up to 0.5 mg/m^3:
(APF = 10) Any chemical cartridge respirator with cartridge(s) providing protection against the compound of concern†
(APF = 10) Any supplied-air respirator

Up to 1.25 mg/m^3:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode
(APF = 25) Any powered, air-purifying respirator with cartridge(s) providing protection against the compound of concern†(canister)

Up to 2.5 mg/m^3:
(APF = 50) Any chemical cartridge respirator with a full facepiece and cartridge(s) providing protection against the compound of concern†
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern†
(APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and cartridge(s) providing protection against the compound of concern(canister)
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Up to 10 mg/m^3:
(APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern
Any appropriate escape-type, self-contained breathing apparatus

Other mercury compounds: NIOSH/OSHA

Up to 1 mg/m^3:
(APF = 10) Any chemical cartridge respirator with cartridge(s) providing protection against the compound of concern†
(APF = 10) Any supplied-air respirator

Up to 2.5 mg/m^3:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode
(APF = 25) Any powered, air-purifying respirator with cartridge(s) providing protection against the

compound of concern†(canister)

Up to 5 mg/m^3:
(APF = 50) Any chemical cartridge respirator with a full facepiece and cartridge(s) providing protection against the compound of concern†
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern†
(APF = 50) Any supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and cartridge(s) providing protection against the compound of concern(canister)
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepiece

Up to 10 mg/m^3:
(APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against the compound of concern
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 0056 (/niosh/ipcsneng/neng0056.html) See MEDICAL TESTS: 0136 (/niosh/docs/2005-110/nmed0136.html)

Page last reviewed: April 4, 2011
Page last updated: November 18, 2010
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day - cdcinfo@cdc.gov

Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

Nickel metal and other compounds (as Ni)

Synonyms & Trade Names **Nickel metal:** Elemental nickel, Nickel catalyst
Synonyms of other nickel compounds vary depending upon the specific compound.

CAS No. 7440-02-0 (Metal)	**RTECS No.** QR5950000 (Metal) (/niosh-rtecs/QR5ACA30.html)	**DOT ID & Guide**
Formula Ni (Metal)	**Conversion**	**IDLH** Ca [10 mg/m^3 (as Ni)] See: 7440020 (/niosh/idlh/7440020.html)
Exposure Limits **NIOSH REL** *: Ca TWA 0.015 mg/m^3 See Appendix A (nengapdxa.html) [*Note: The REL does not apply to Nickel carbonyl.] **OSHA PEL** *† (nengapdxg.html): TWA 1 mg/m^3 [*Note: The PEL does not apply to Nickel carbonyl.]		**Measurement Methods** **NIOSH** 7300 (/niosh/docs/2003-154/pdfs/7300.pdf), 7301 (/niosh/docs/2003-154/pdfs/7301.pdf), 7303 (/niosh/docs/2003-154/pdfs/7303.pdf), 9102 (/niosh/docs/2003-154/pdfs/9102.pdf) ; **OSHA** ID121 (http://www.osha.gov/dts/sltc/methods/inorganic/id121/id121.html), ID125G (http://www.osha.gov/dts/sltc/methods/inorganic/id125g/id125g.html) See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description Metal: Lustrous, silvery, odorless solid.

MW: 58.7	**BP:** 5139°F	MLT: 2831°F	**Sol:** Insoluble	**VP:** 0 mmHg (approx)	**IP:** NA
Sp.Gr: 8.90 (Metal)	**Fl.P:** NA	**UEL:** NA	**LEL:** NA		

Metal: Combustible Solid; nickel sponge catalyst may ignite SPONTANEOUSLY in air.

Incompatibilities & Reactivities Strong acids, sulfur, selenium, wood & other combustibles, nickel nitrate

Exposure Routes inhalation, ingestion, skin and/or eye contact

Symptoms sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]

Target Organs Nasal cavities, lungs, skin

Cancer Site [lung and nasal cancer]

Personal Protection/Sanitation (See	**First Aid** (See procedures (firstaid.html))

protection codes (protect.html)) **Skin:** Prevent skin contact **Eyes:** No recommendation **Wash skin:** When contaminated/Daily **Remove:** When wet or contaminated **Change:** Daily	**Skin:** Water flush immediately **Breathing:** Respiratory support **Swallow:** Medical attention immediately

Respirator Recommendations

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
Click here (pgintrod.html#nrp) for information on selection of N, R, or P filters.
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 0062 (/niosh/ipcsneng/neng0062.html) See MEDICAL TESTS: 0156 (/niosh/docs/2005-110/nmed0156.html)

Page last reviewed: April 4, 2011
Page last updated: November 18, 2010
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day -
cdcinfo@cdc.gov

Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

Tetrachloroethylene

Synonyms & Trade Names Perchlorethylene, Perchloroethylene, Perk, Tetrachlorethylene

CAS No. 127-18-4	**RTECS No.** KX3850000 (/niosh-rtecs/KX3ABF10.html)	**DOT ID & Guide** 1897 160 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=160)
Formula $Cl_2C=CCl_2$	**Conversion** 1 ppm = 6.78 mg/m^3	**IDLH** Ca [150 ppm] See: 127184 (/niosh/idlh/127184.html)
Exposure Limits **NIOSH REL** : Ca Minimize workplace exposure concentrations. See Appendix A (nengapdxa.html) **OSHA PEL** † (nengapdxg.html): TWA 100 ppm C 200 ppm (for 5 minutes in any 3-hour period), with a maximum peak of 300 ppm		**Measurement Methods** **NIOSH** 1003 (/niosh/docs/2003-154/pdfs/1003.pdf); **OSHA** 1001 (/niosh/docs/2003-154/pdfs/1001.pdf) See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)

Physical Description Colorless liquid with a mild, chloroform-like odor.

MW:	BP:	FRZ:	Sol:	VP:	IP:
165.8	250°F	-2°F	0.02%	14 mmHg	9.32 eV
Sp.Gr: 1.62	**Fl.P:** NA	**UEL:** NA	**LEL:** NA		

Noncombustible Liquid, but decomposes in a fire to hydrogen chloride and phosgene.

Incompatibilities & Reactivities Strong oxidizers; chemically-active metals such as lithium, beryllium & barium; caustic soda; sodium hydroxide; potash

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]

Target Organs Eyes, skin, respiratory system, liver, kidneys, central nervous system

Cancer Site [in animals: liver tumors]

Personal Protection/Sanitation (See protection codes (protect.html))
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated
Remove: When wet or contaminated
Change: No recommendation
Provide: Eyewash, Quick drench

First Aid (See procedures (firstaid.html))
Eye: Irrigate immediately
Skin: Soap wash promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 0076 (/niosh/ipcsneng/neng0076.html) See MEDICAL TESTS: 0179 (/niosh/docs/2005-110/nmed0179.html)

Page last reviewed: April 4, 2011
Page last updated: November 18, 2010
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day - cdcinfo@cdc.gov

APPENDIX F

Monitoring Well Boring Logs & Construction Details

CA RICH Consultants, Inc.

Environmental Specialists

17 Dupont Street, Plainview, NY 11803

FIELD BORING LOG

BOREHOLE NO.: **MW-2**

TOTAL DEPTH: **24**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Lebanon West Farms**	DRILLING CO.:	**Aarco Environmental**
SITE LOCATION:	**Bronx, New York**	DRILLER:	**Juan**
JOB NO.:	**Lebanon West Farms**	RIG TYPE:	**Drill Rig**
LOGGED BY:	**Jessica Proscia**	METHOD OF DRILLING:	**Hollow Stem Auger**
PROJECT MANAGER:	**Deborah Shapiro**	SAMPLING METHODS:	**Drill Cuttings**
DATES DRILLED:	**2/28/11**	HAMMER WT./DROP	**NA**

Water level in well

DEPTH	SOIL TYPE	SOIL DESCRIPTION	SAMPLE NUMBER	Blows per ft.	PID ppm	BORING COMPLETION	WELL DESCRIPTION
0		Surface: Organic matter		NA	0.0		Protective Cover
		Fill: Dark brown medium grained sand with some brick, wood, and concrete.					Concrete seal
5		Clay and Silt: Tan clay with silt.			0.0		2-inch Sch. 40 PVC Pipe
							Drill cuttings
							Bentonite Seal
10					0.0		
15							No. 2 Sand
							20 Slot Screen
20							

NOTES:

CA RICH Consultants, Inc.

Environmental Specialists

17 Dupont Street, Plainview, NY 11803

FIELD BORING LOG

BOREHOLE NO.: **MW-6**

TOTAL DEPTH: **25 ft**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Lebanon West Farms**	DRILLING CO.:	**Eastern Environmental**
SITE LOCATION:	**Bronx, New York**	DRILLER:	**Josh**
JOB NO.:	**Lebanon West Farms**	RIG TYPE:	**Drill Rig**
LOGGED BY:	**Jessica Proscia**	METHOD OF DRILLING:	**Direct Push**
PROJECT MANAGER:	**Richard Izzo**	SAMPLING METHODS:	**NA**
DATES DRILLED:	**6/30/14**	HAMMER WT./DROP	**NA**

Water level in well

DEPTH	SOIL TYPE	SOIL DESCRIPTION	SAMPLE NUMBER	Blows per ft.	PID ppm	BORING COMPLETION	WELL DESCRIPTION
0		Fill: Dark brown medium grain sand with some concrete.			0.0		Cover
					0.0		Surface seal
5		Clay and Silt: Tan clay with silt.			0.0		Sch. 40 PVC Pipe
					0.0		Bentonite Seal
10				Push	0.0		
15							No. 2 Sand
							20 Slot Screen
20							
25							

NOTES:

CA RICH Consultants, Inc.
Environmental Specialists
17 Dupont Street, Plainview, NY 11803

FIELD BORING LOG

BOREHOLE NO.: **MW-7**
TOTAL DEPTH: **25**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Lebanon West Farms**	DRILLING CO.:	**Eastern Environmental**
SITE LOCATION:	**Bronx, New York**	DRILLER:	**Eddie**
JOB NO.:	**Lebanon West Farms**	RIG TYPE:	**Drill Rig**
LOGGED BY:	**Jessica Proscia**	METHOD OF DRILLING:	**Direct Push**
PROJECT MANAGER:	**Richard Izzo**	SAMPLING METHODS:	**NA**
DATES DRILLED:	**7/29/13**	HAMMER WT./DROP	**NA**

Water level in well

DEPTH	SOIL TYPE	SOIL DESCRIPTION	SAMPLE NUMBER	Blows per ft.	PID ppm	BORING COMPLETION	WELL DESCRIPTION
0		Surface: Organic matter		NA	0.0		Protective Cover
		Fill: Dark brown medium grained sand with some brick, wood, and concrete.					Concrete seal
5		Clay and Silt: Tan clay with silt.			0.0		2-inch Sch. 40 PVC Pipe
							Drill cuttings
							Bentonite Seal
10					0.0		
15							No. 2 Sand
							20 Slot Screen
20							
25							

NOTES:

CA RICH Consultants, Inc.

Environmental Specialists

17 Dupont Street, Plainview, NY 11803

FIELD BORING LOG

BOREHOLE NO.: **MW-8**

TOTAL DEPTH: **25 ft**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Lebanon West Farms**	DRILLING CO.:	**Eastern Environmental**
SITE LOCATION:	**Bronx, New York**	DRILLER:	**Josh**
JOB NO.:	**Lebanon West Farms**	RIG TYPE:	**Drill Rig**
LOGGED BY:	**Jessica Proscia**	METHOD OF DRILLING:	**Direct Push**
PROJECT MANAGER:	**Richard Izzo**	SAMPLING METHODS:	**NA**
DATES DRILLED:	**6/30/14**	HAMMER WT./DROP	**NA**

Water level in well

DEPTH	SOIL TYPE	SOIL DESCRIPTION	SAMPLE NUMBER	Blows per ft.	PID ppm	BORING COMPLETION	WELL DESCRIPTION
0		Topsoil: Tan top soil.			0.0		Cover
		Fill: Dark brown medium grain sand with some concrete.			0.0		Surface seal
5		Clay and Silt: Tan clay with silt.			0.0		Sch. 40 PVC Pipe
					0.0		Bentonite Seal
10				Push	0.0		
15							No. 2 Sand
							20 Slot Screen
20							
25							

NOTES:

APPENDIX G

Quality Assurance Project Plan

APPENDIX G

QUALITY ASSURANCE PROJECT PLAN (QAPP)
FOR THE
SITE MANAGEMENT PLAN (SMP)
AT
Lebanon West Farms I and II
Bronx, New York
NYSDEC Site Number: C203060

Prepared By:

Prepared by
CA RICH CONSULTANTS, INC.
17 Dupont Street
Plainview, NY 11803
(516) 57608844

TABLE OF CONTENTS

Quality Assurance Project Plan

1.1 Introduction - The following Quality Assurance Project Plan ("QAPP") has been prepared specifically for the Site Management Plan (SMP) in connection with the Lebanon West Farms I and II cleanup under the NYSDEC brownfield Cleanup Program (BCP Site No. C203060). This Plan was prepared and approved as stated below.

Prepared by: _____ Date: 7/14/14
Jason Cooper, Quality Assurance Officer

Approved by: _____ Date: 7/14/14
Jessica Proscia., Project Manager

1.2 Project Description - The SMP subject to this QAPP have been prepared to address the following issues:

- Monitor groundwater quality below the site for volatile organic compounds (VOCs).

The investigative methods that will be used include monitoring well sampling. These are described in detail in the SMP.

1.3 Project Organization – Jessica Proscia will serve as the Project Manager (PM) and will be responsible for the overall scheduling and performance of all investigative activities.

Jason Cooper will serve as the Quality Assurance Officer (QAO) for this project. His duties will include:

- Review of laboratory data packages
- Interface with laboratory
- Performance of Field Audits

Experienced CA RICH staff will perform and/or oversee completion of all the field activities described in the SMP.

1.4 Quality Assurance Objectives and Data Measurement

Chemical Analysis – All environmental samples will delivered to a New York State-Certified laboratory contracted to CA RICH for chemical analysis. This data is intended to determine the potential for groundwater to contain detectable concentrations of VOCs. The laboratory will

follow the NYSDEC – Analytical Services Protocol dated 2005 for groundwater samples and the analytical reports will be prepared in NYSDEC ASP Category B deliverables. Groundwater samples will be placed in iced-filled coolers and delivered to the laboratory within 48 hours of collection.

Quality assurance objectives are generally defined in terms of five parameters:

- **Representativeness -** Representativeness is the degree to which sampling data accurately and precisely represents site conditions, and is dependent on sampling and analytical variability. The SMP has been designed to assess the presence of the constituents in the target media at the time of sampling. The Plan presents the rationale for sample quantities and location. The Plan also presents field sampling methodologies and laboratory analytical methodologies.

  The use of the prescribed field and laboratory analytical methods with associated holding times and preservation requirements are intended to provide representative data. Further discussion of QC checks is presented in Section 1.11.

- **Comparability** - Comparability is the degree of confidence with which one data set can be compared to another data set. Comparability between this investigation and to the extent possible, with existing data will be maintained through consistent sampling and analytical methodology set forth in the QAPP; the SMP; the NYSDEC ASP analytical methods (2005) with NYSDEC ASP QA/QC requirements (2005); and through use of QA/QC procedures and appropriately trained personnel.

- **Completeness -** Completeness is defined as a measure of the amount of valid data obtained from a sampling event compared to the amount that was expected to be obtained under normal conditions. This will be determined upon assessment of the analytical results.

- **Precision -** Precision is the measure of reproducibility of sample results. The goal is to maintain a level of analytical precision consistent with the objectives of the SMP. To maximize precision, sampling and analytical procedures will be followed. All work for the investigation phase of this project will adhere to established protocols presented in the QAPP, and the SMP. Checks for analytical precision will include the analysis of matrix spike duplicated, laboratory duplicates, and field duplicates. Checks for field measurement precision will include obtaining duplicate field measurements. Further discussion of precision QC checks is provided in Section 1.11.

- **Accuracy** - Accuracy is the deviation of a measurement from the true value of a known standard. Both field and analytical accuracy will be monitored through initial and continuing calibration of instruments. In addition, internal standards, matrix spikes, blank spikes, and surrogates (e.g. system monitoring compounds) will be used to assess the accuracy of the laboratory analytical data.

1.5 Sampling Procedures - The sampling procedures that will be employed are discussed in detail in the SMP.

1.6 Sample and Document Custody Procedures

- **General** - The Chain-of-Custody program allows for the tracing of possession and handling of the sample from its time of collection through its chemical analysis in the laboratory. The chain-of-custody program at this site will include:

  - Sample labels

- Chain-of-Custody records
- Field records

- **Sample Container Details**

Sample Matrix & Parameters	Container & Preservation	Method	Holding Time*
Groundwater			
TCL VOCs	Two 40 mil vials & ice	8260	14 days

- **Sample Labels** - To prevent misidentification of samples, a label will be affixed to the sample container and will contain the following information:

  - Site Name
  - Sample identification number
  - Date and time of collection
  - Initials of Sampler
  - Preservation (if any)
  - Type of analysis to be conducted.

- **Chain-of-Custody Records** - To establish the documentation necessary to trace sample possession from the time of collection, a chain-of-custody record will be filled out and will accompany samples at all times. The record will contain the following information:

  - Project name:
  - Printed name and signature of samplers
  - Sample Identification
  - Date and time of collection
  - Sampling location
  - Number of containers for each sample
  - Signature of individuals involved in sample transfer (when relinquishing and accepting samples)
  - Inclusive dates and times of possession.

- **Field Records** - Field records will be maintained during each sampling effort in a logbook. All aspects of sample collection, handling and visual observations will be recorded. All sample collection equipment, field analytical equipment and equipment utilized to make physical measurements will be identified in the field logbook.

  All calculations, results and calibration data for field sampling, field analytical and field physical measurement equipment will also be recorded in the field logbook. Entries will be dated and initialed. Entries will be made in ink, and will be legible.

1.7 Calibration Procedures and Frequency - The contracted laboratory will follow the NYSDEC Category-B requirements for equipment calibration procedures and frequency.

1.8 Analytical Procedures - All laboratory groundwater analysis will follow NYSDEC ASP (2005) protocols with Category B deliverables. The following samples will be collected for QA/QC purposes: 1 trip blank, 1 field blank, 1 duplicate sample, 1 matrix spike, and 1 matrix spike

duplicate per every twenty field samples per sample matrix. A qualified data validator will review the laboratory data and a Data Usability Summary Report (DUSR) will be prepared.

1.9 Data Reduction, Validation and Reporting

- **Field Data** - All field data recorded in logbooks or on log sheets will be evaluated in the Office and transferred to word processor text by field personnel or clerical staff. The QAO and/or PM will review this data for accuracy and completeness.

- **Laboratory Data** - The laboratory will transfer the instrument readings to laboratory report forms. A qualified Firm will perform independent data validation of all analytical data using NYSDEC DUSR protocols.

  The Data Validator will provide CA RICH with a Data Validation Summary Report. The QAO will review the summary report as well as other field data and prepare a Data Usability Report. CA RICH will prepare summary tables of the validated analytical data using an imported spreadsheet received from directly the laboratory.

1.10 Internal Quality Control Checks

Both field and laboratory quality control checks are proposed for this project. In the event that there are any deviations from these checks, the Project Manager and Quality Assurance Officer will be notified. The proposed field and laboratory control checks are discussed below.

Field Quality Control Checks

- **Field Measurements -** To verify the quality of data collected using field instrumentation, at least one duplicate measurement will be obtained per day and reported for all field analytical measurements.

- **Sample Containers -** Certified-clean sample containers will be supplied by the contracted laboratory.

- **Field Duplicates** – Field duplicates will be collected to check reproducibility of the sampling methods. Field duplicates will be prepared as discussed in the SMP. Field duplicates will be analyzed every 20 field samples.

- **Field Rinse Blanks** – Field rinse blanks are used to monitor the cleanliness of the sampling equipment and the effectiveness of the cleaning procedures. Field rinse blanks will be prepared by filling sample containers with analyte-free water (supplied by the laboratory), which has been routed through a cleaned sampling device.

- **Trip Blanks** – Trip blanks will be used to assess whether site samples have been exposed to non-site-related volatile constituents during storage and transport. Trip blanks will be analyzed at a frequency of once per day, and will be analyzed for volatile organic constituents. A trip blank will consist of a container filled with analyte-free water (supplied by the laboratory), which remains unopened with field samples throughout the sampling event. Trip blanks will only be analyzed for volatile organic constituents.

1.11 Performance and Systems Audits

Performance and systems audits will be completed in the field and the laboratory during the investigation phase of this project as described below.

- **Field Audits –** CA RICH's Project Manager and Quality Assurance Officer will monitor field performance and field meter calibrations to verify that measurements are taken according to established protocols. The Project Manager will review all field logs. In addition, the Project Manager and the Quality Assurance Officer will review the field rinse and trip blank data to identify potential deficiencies in field sampling and cleaning procedures.

- **Laboratory Audits** – The contracted laboratory will perform internal audits consistent with NYSDEC ASP (2005).

1.12 Preventive Maintenance

Preventive maintenance schedules have been developed for both field and laboratory instruments. A summary of the maintenance activities to be performed is presented below.

- **Field Instruments and Equipment -** Prior to any field sampling, each piece of field equipment will be inspected to assure it is operational. If the equipment is not operational, it must be serviced prior to use. All meters which require charging or batteries will be fully charged or have fresh batteries. If instrument servicing is required, it is the responsibility of the field personnel to follow the maintenance schedule and arrange for prompt service.

- **Laboratory Instruments and Equipment -** The laboratory will document Laboratory instrument and equipment procedures. Documentation includes details of any observed problems, corrective measure(s), routine maintenance, and instrument repair (which will include information regarding the repair and the individual who performed the repair).

  Preventive maintenance of laboratory equipment generally will follow the guidelines recommended by the manufacturer. A malfunctioning instrument will be repaired immediately by in-house staff or through a service call from the manufacturer.

1.13 Data Assessment Procedures

The analytical data generated during implementation of the SMP will be evaluated with respect to precision, accuracy, and completeness. The procedures utilized when assessing data precision, accuracy, and completeness are presented below.

- **Data Precision Assessment Procedures -** Field precision is difficult to measure because of temporal variations in field parameters. However, precision will be controlled through the use of experienced field personnel, properly calibrated meters, and duplicate field measurements. Field duplicates will be used to assess precision for the entire measurement system including sampling, handling, shipping, storage, preparation and analysis.

  Laboratory data precision for organic analyses will be monitored through the use of matrix spike duplicate sample analyses. For other parameters, laboratory data precision will be monitored through the use of field duplicates and/or laboratory duplicates.

The precision of data will be measured by calculation of the standard deviation (SD) and the coefficient of variation (CV) of duplicate sample sets. The SD and CV are calculated for duplicate sample sets by:

$$SD = (A-B)/1.414$$
$$CV = ((A-B)/1.414/((A+B)/2))$$

Where:

A = Analytical result from one of two duplicate measurements
B = Analytical result from the second measurement.

Where appropriate, A and B may be either the raw measurement or an appropriate mathematical transformation of the raw measurement (e.g., the logarithm of the concentration of a substance).

Alternately, the relative percent difference (RPD) can be calculated by the following equation:

$$RPD = \frac{(A-B)}{(A+B)/2} \times 100$$

$$RPD = 1.414\ (CV)(100)$$

- **Data Accuracy Assessment Procedures -** The accuracy of field measurements will be controlled by experienced field personnel, properly calibrated field meters, and adherence to established protocols. The accuracy of field meters will be assessed by review of calibration and maintenance logs.

  Laboratory accuracy will be assessed via the use of matrix spikes, surrogate spikes, and internal standards. Where available and appropriate, QA performance standards will be analyzed periodically to assess laboratory accuracy. Accuracy will be calculated as a percent recovery as follows:

$$Accuracy = \frac{A-X}{B} \times 100$$

  Where:

  A = Value measured in spiked sample or standard
  X = Value measured in original sample
  B = True value of amount added to sample or true value of standard

  This formula is derived under the assumption of constant accuracy over the original and spiked measurements. If any accuracy calculated by this formula is outside of the acceptable levels, data will be evaluated to determine whether the deviation represents unacceptable accuracy, or variable, but acceptable accuracy. Accuracy objectives for matrix spike recoveries and surrogate recovery objectives are identified in the NYSDEC, ASP (2005).

- **Data Completeness Assessment Procedures -** Completeness of a field or laboratory data set will be calculated by comparing the number of samples collected or analyzed to the proposed number.

$$\text{Completeness} = \frac{\text{No. Valid Samples Collected or Analyzed}}{\text{No. Proposed Samples Collected or Analyzed}} \times 100$$

As general guidelines, overall project completeness is expected to be at least 90 percent. The assessment of completeness will require professional judgment to determine data usability for intended purposes.

1.14 Corrective Action

Corrective actions are required when field or analytical data are not within the objectives specified in this QAPP, or the SMP. Corrective actions include procedures to promptly investigate, document, evaluate, and correct data collection and/or analytical procedures. Field and laboratory corrective action procedures for this project are described below.

- **Field Procedures** - When conducting the investigative fieldwork, if a condition is noted that would have an adverse effect on data quality, corrective action will be taken so as not to repeat this condition. Condition identification, cause and corrective action implemented will be documented as a memo to the project file and reported to the Project Manager.

  Examples of situations, which would require corrective actions, are provided below:

  - Protocols as defined by the QAPP and the SMP have not been followed;
  - Equipment is not in proper working order or properly calibrated;
  - QC requirements have not been met; and
  - Issues resulting from performance or systems audits.

  Project field personnel will continuously monitor ongoing work performance in the normal course of daily responsibilities.

- **Laboratory Procedures -** In the laboratory, when a condition is noted to have an adverse effect on data quality, corrective action will be taken so as not to repeat this condition. Condition identification, cause and corrective action to be taken will be documented, and reported to the Quality Assurance Officer.

  Corrective action may be initiated, at a minimum, under the following conditions:

  - Specific laboratory analytical protocols have not been followed;
  - Predetermined data acceptance standards are not obtained;
  - Equipment is not in proper working order or calibrated;
  - Sample and test results are not completely traceable;
  - QC requirements have not been met; and
  - Issues resulting from performance or systems audits.

  Laboratory personnel will continuously monitor ongoing work performance in the normal course of daily responsibilities.

1.15 Quality Assurance Reports and Management

- **Internal Reporting -** The analytical laboratory will submit analytical reports using NYSDEC ASP (2005), Category B requirements. The analytical reports will be submitted to the Data

Validator for review. Supporting data (i.e., historic data, related field or laboratory data) will also be reviewed to evaluate data quality, as appropriate. The Quality Assurance Officer will incorporate results of data validation reports (if any) and assessments of data usability into a summary report. This report will be filed in the project file and will include the following:

- Assessment of data accuracy, precision, and completeness for field & laboratory data;
- Results of the performance and systems audits;
- Significant QA/AC problems, solutions, corrections, and potential consequences;
- Analytical data validation report; and
- Data usability report.

- **Reporting** - The Groundwater Monitoring Reports will contain a separate QA/QC section including the DUSR and a summary of data collected and/or used as appropriate to the project DQOs. The Quality Assurance Officer will prepare the QA/QC summary tables and reports and memoranda documenting the data assessment and validation.

APPENDIX H

Groundwater Sampling Log

Groundwater Sampling Log
Lebanon West Farms I & II

Bronx, New York
NYSDEC Site Number: C203060

Well ID	Date	Well Integrity	Depth to Water (Feet)	Depth to Bottom (Feet)	Amount Purged (Gallons)	Sample Time	pH	Temperature (° Celsius)	Conductivity (ms/cm)	Oxygen/Reduction Potential (mv)	Dissolved Oxygen (mg/L)
		---	---	---	---						

Comments:

APPENDIX I

Inspection Form

Site-Wide Inspection Check List
Lebanon West Farms I and II

Bronx, New York
NYSDEC Site Number: C203060

Items to be Addressed	Yes/No	Comments	Corrective Action Taken Date
Provide an evaluation of the condition and continued effectiveness of engineering controls (foundation walls/slabs, vapor barrier, and concrete sidewalks).			
Are all institutional controls, including Site usage in compliance?			
What are the general Site conditions?			
Are Site management activies being conducted including, confirmation sampling and a health and safety inspection?			
Are all Site records up to date?			
Does Site access remain available to maintain engineering controls?			
Are all permits and schedules included in the Operation and Maintenance Plan in Compliance?			
Are the foundation walls, slabs, and asphalt paved area in good condition?			
Is the 2-foot clean fill buffer in landscaped areas intact?			

Name of Inspector-
Date/Time-
Follow-Up Name of Inspector-
Date/Time-