262 GREEN

262-276 GREEN STREET, AND 263 HURON STREET
BROOKLYN, NEW YORK
Block 2454 Lots 24, 26, 28 and 37

REMEDIAL ACTION WORK PLAN

August 2017
Revised February 2018

Prepared for:
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CERTIFICATIONS

I _____certify that I am currently a NYS registered professional engineer and that this Remedial Action Work 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).

_____	_____	_____
NYS Professional Engineer #	Date	Signature

It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law.

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ATTACHMENTS

LIST OF ACRONYMS

Acronym	Definition
AMC	AMC Engineering
AWQS	Ambient Water Quality Standards
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
CQMP	Construction Quality Management Plan
DUSR	Data Usability Summary Report
EBC	Environmental Business Consultants
FER	Final Engineering Report
HDPE	High Density Polyethylene
IRM	Interim Remedial Measure
NYC	New York City
NYCDEP	New York City Department of Environmental Protection
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PVC	Polyvinyl Chloride
RAO	Remedial Action Objectives
RAWP	Remedial Action Work Plan
RI	Remedial Investigation
SCOs	Soil Cleanup Objectives
SCG	Standards, Criteria, and Guidelines
SMMP	Soil/Materials Management Plan
SMP	Site Management Plan
SSDS	Sub-slab Depressurization System
SWPPP	Stormwater Pollution Prevention Plan
SVOCs	Semi-Volatile Organic Compounds
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

EXECUTIVE SUMMARY

Site Description/Physical Setting/Site History

This Remedial Action Work Plan (RAWP) was prepared on behalf of 270 Green LLC and 270 Green Holdings LLC for the property known as the 262 Green, located at 262-276 Green Street, and 263 Huron Street in Brooklyn, NY. An application for acceptance into the New York State Brownfield Cleanup Program (BCP) was submitted to the New York State Department of Environmental Conservation (NYSDEC) with this RAWP.

An unrestricted use is proposed for the property. When completed, the Site will be redeveloped with a new 6-story mixed-use commercial retail and office building which will cover the entire Site. Refer to the Brownfield Cleanup Program (BCP) application for additional details.

The street address for the Site is 262-276 Green Street, and 263 Huron Street in Brooklyn, NY. (**Figure 1**). The Site is located in the City of New York and Borough of Brooklyn. The Site has approximately 175 ft of street frontage on Green Street, 100 feet of frontage on Provost Street and 75 feet of street frontage on Huron Street (**Figure 2**). Currently the property is a vacant construction lot surrounded by an 8-foot-high construction fence. Historically, the property was used for metal fabrication, iron painting, manufacturing, a knitting mill and auto repair.

The Site is currently owned by the Requestors, 270 Green LLC and 270 Green Holdings LLC. The Requestors purchased the property in January 2016.

Summary of the Remedial Investigation

A Remedial Investigation was completed at the Site in July 15, 2014 and August 6-15, 2014 and August 1, 2017 and documented in a Remedial Investigation Report dated August 2017. The goals of the Remedial Investigation were to define the nature and extent of contamination in soil, groundwater and any other impacted media; to identify the source(s) of the contamination; to assess the impact of the contamination on public health and/or the environment; and to provide information to support the development of a Remedial Work Plan to address the contamination.

Activities completed under the RI:

- Sampling for non-petroleum contaminants such as pesticides, PCBs and metals in soil and groundwater including the analysis of soil and groundwater samples
- Soil sampling and analysis for petroleum compounds in soil samples from 7 soil boring locations;
- The installation of 6 groundwater monitoring wells;
- The collection and analysis of groundwater samples for petroleum compounds;
- The collection of analysis of soil gas samples for VOCs from 6 soil gas sampling locations.

The results of sampling performed during the RI, identified tert-butylbenzene in soil on lot 37 adjacent to the main building at a depth interval of 10-13 ft below surface grade. Other parameters such as sec-butylbenzene and n-butylbenzene were also present in samples in this area below SCOs. Given the absence of other petroleum VOCs, it is likely that the source of the butylbenzenes was a solvent associated with the preparation of steel for painting, or as part of the painting / coating process. The location behind the main building suggests a surface discharge of the solvent in this area of the Site.

Elevated levels of SVOCs, pesticides and PCBs are present in fill materials on lot 37. Metals including arsenic, barium, copper, zinc and hazardous levels of lead are present in both shallow and deep soils throughout the site and may be related to fill materials, historic painting / coating operations or a combination of both.

Minor levels of tert-butylbenzene have transferred to the dissolved phase as evidenced by its presence slightly above its standard in monitoring wells MW2, MW3 and MW4. Other VOC detections reported slightly above groundwater standards included 2-Isopropyltoluene, naphthalene and sec-Butylbenzene.

SVOC detections above groundwater standards were limited to those parameters with part per trillion standards including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene. The SVOCs / concentrations report are commonly associated with background conditions.

Several dissolved metals were detected above standards including iron, magnesium, manganese, and sodium in most of the wells. These metals are consistent with general groundwater quality throughout the area and are representative of brackish conditions. Lead was also reported above standards at the MW2 location

CVOCs including TCE and PCE were reported in five soil vapor locations across the Site. Concentrations were generally low with the exception of two locations in which elevated levels of either TCE or PCE were reported separately. There was no evidence that the CVOCs were site related.

Qualitative Human Health Exposure Assessment

The qualitative exposure assessment identified potential completed routes of exposure to construction workers and remediation workers through inhalation, ingestion and dermal contact of petroleum compounds, VOCs, SVOCs, pesticides and heavy metals during excavation activities. The Health and Safety Plan prepared for the site identifies such exposures and provides instructions for on-site workers to minimize potential exposure. Occupants in the proposed on-site building may be exposed to CVOCs through the vapor intrusion pathway, if remedial action is not taken to remove the source.

The exposure assessment indicated a limited potential exposure to residents and commercial workers in adjacent buildings from dust or vapors during excavation of impacted soil. A site-specific Community Air Monitoring Plan has been developed to identify and minimize the potential for off-site exposure to residents through continuous air monitoring during excavation activity. There were no other identified potential impacts to off-site populations from site-related contaminants.

Potential environmental impacts through the groundwater to surface water discharge were considered unlikely based on the concentrations of VOCs in groundwater, the groundwater flow direction (east), and the distance to Whale Creek (900 feet).

Summary of the Remedy

The remedy recommended for the Site is a Track 1 alternative (Alternative 1) which consists of the removal of all on-site soils which exceed the unrestricted use SCOs. It is expected that a Track 1 alternative will require excavation to a minimum depth of 15 feet across the Site with additional excavation with possible over-excavation in some areas. In addition, all fill material with parameters above unrestricted SCOs will be removed from the Site and properly disposed of at an off-site facility. The remedy will include the following items:

1. Excavation of soil/fill exceeding Track 1 unrestricted use SCOs as listed in **Table 1** to depths of 15 feet below grade site-wide with over excavation as necessary to meet unrestricted use SCOs;
2. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work;
3. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of Track 1 SCOs;
4. 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;
5. Dewatering and treatment of groundwater before discharging to the NYC sewer system under a NYCDEP sewer discharge permit.
6. Import of materials to be used for backfill and cover in compliance with: (1) chemical limits and other specifications included in **Table 1**, (2) all Federal, State and local rules and regulations for handling and transport of material.
7. If a Track 1 cleanup is not achieved, an Environmental Easement will be filed against the Site to limit use of the Site to Restricted Commercial.
8. If a Track 2 cleanup is not achieved, a Site Management Plan will be prepared to maintain a site cover system.

Although the goal of the remedy will be to remove all soil exceeding the Track 1 SCOs, if Track 1 SCOs cannot be achieved then a Track 2 or Track 4 remedy may result. All responsibilities associated with the Remedial Action, including permitting requirements and pretreatment requirements, will be addressed in accordance with all applicable Federal, State and local rules and regulations.

REMEDIAL ACTION WORK PLAN

1.0 INTRODUCTION

This Remedial Action Work Plan (RAWP) was prepared on behalf of was prepared on behalf of 270 Green LLC and 270 Green Holdings LLC for the property known as the 262 Green, located at 262-276 Green Street, and 263 Huron Street in Brooklyn, NY. An application for acceptance into the New York State Brownfield Cleanup Program (BCP) was submitted to the New York State Department of Environmental Conservation (NYSDEC) with this RAWP.

This RAWP summarizes the nature and extent of contamination as determined from data gathered during the Remedial Investigation (RI), performed between June 2014 and August 2017. It provides an evaluation of a Track 1 cleanup and other applicable Remedial Action alternatives, their associated costs, and the recommended and preferred remedy. The remedy described in this document is consistent with the procedures defined in DER-10 and complies with all applicable standards, criteria and guidance. The remedy described in this document also complies with all applicable Federal, State and local laws, regulations and requirements. The NYSDEC and New York State Department of Health (NYSDOH) have determined that this Site does not pose a significant threat to human health and the environment. The RI for this Site did not identify fish and wildlife resources.

A formal Remedial Design document will not be prepared.

1.1 SITE LOCATION AND DESCRIPTION

The street address for the Site is 262-276 Green Street, and 263 Huron Street in Brooklyn, NY. (**Figure 1**). The Site is located in the City of New York and Borough of Brooklyn. The Site has approximately 175 ft of street frontage on Green Street Avenue, 100 feet of frontage on Provost Street and 75 feet of street frontage on Huron Street (**Figure 2**). Currently the property is a vacant construction lot surrounded by an 8-foot-high construction fence. Historically, the property was used for metal fabrication, iron painting, manufacturing, a knitting mill and auto repair.

The elevation of the Site is approximately 11 feet above the National Geodetic Vertical Datum (NGVD). The area topography gradually slopes to the north. The depth to groundwater beneath the Site is approximately 9-11 feet below grade. Based on regional groundwater elevation maps, groundwater in the area generally flows OK north. However, local flow at the Site was calculated as east to southeast.

A boundary map will be attached to the BCA as required by Environmental Conservation Law (ECL) Title 14 Section 27-1419. The 0.57-acre property is fully described in **Attachment A – Metes and Bounds.**

1.2 CONTEMPLATED REDEVELOPMENT PLAN

The Requestors intend to redevelop the property with a new 6-story mixed-use commercial retail and office building. One hundred percent of the lot would be excavated to a depth of approximately 15 feet to meet remedial goals and for the cellar level of the proposed building.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

Surrounding land use includes the NYC Department of Public works water treatment plant to the east, commercial and industrial properties to the north and south and commercial properties to the west (**Figure 3**).

There are no schools or daycare facilities identified within 1,000 feet of the project Site. The nearest schools are The NY League for Early Learning located at 725 Leonard Street approximately 1,900 feet to the southwest, P.S. 31 Samuel F. Dupont - Elementary School, located at 75 Meserole Avenue approximately 2,700 ft southwest and P.S. 34 Oliver H Perry - Elementary School located at 131 Norman Avenue approximately 2,700 feet to the south. There are no other identified sensitive receptors (i.e. nursing homes, hospitals, etc.) located in the vicinity of the Site.

2.0 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS

The field work portion of the RI was conducted by EBC on July 15, 2014 and August 6-15, 2014, and August 1, 2017. The investigation is summarized in the sections below. Further details are provided in the Remedial Investigation Report (EBC January 2016).

2.1 SUMMARY OF REMEDIAL INVESTIGATIONS PERFORMED

2.1.1 Soil Borings

A total of seven soil borings were advanced between July 15, 2014 and August 6-15, 2014 to determine if the historical occupancy of manufacturing tenants had impacted the subsurface of the Site (**Figure 4**).

At each soil boring location soil samples were collected continuously in 5-foot intervals from grade to a depth of 15 to 20 feet below grade using a Geoprobe™ 6720DT, probe drilling machine. The Geoprobe™ system uses a direct push hydraulic percussion system to drive and retrieve core samplers. Soil samples were retrieved using a 1.25-inch diameter, 5-foot long dual-tube sampler with disposable acetate liners. Soil recovered from each soil boring was field screened by an environmental professional for the presence of VOCs with a photo-ionization detector (PID) and visually inspected for evidence of contamination.

Fourteen soil samples were sampled and retained for analysis from the seven soil boring locations. Retained samples were submitted for laboratory analysis of one or more of the following analyses: volatile organic compounds (VOCs) by EPA Method 8260, semi-volatile organic compounds (SVOCs) by EPA Method 8270, TAL Metals, pesticides and PCBs by EPA Method 8081/8082. Soil boring locations are identified in **Figure 4**.

2.1.2 Monitoring Wells

Six groundwater monitoring wells (MW1-MW6) were installed at the Site on August 1, 2017 to evaluate the direction of groundwater flow and to collect groundwater samples. In addition to the those collected from the monitoring wells, groundwater samples were also collected using a Geoprobe sampler at seven locations (B1 and B3 through B8) at the Site on July 15, 2014,

August 7, 2014, and. The installation of all of the monitoring wells and the advancement of the probe sampler with completed with a track mounted GeoprobeTM Model 6712DT drilling machine.

Monitoring wells were installed to a depth of approximately 20 feet below grade with 10 feet of 0.010 PVC well screen and 10 feet of PVC riser. A No. 00 morie filter-pack sand filled the annulus surrounding the screen within two feet above the top of the screen. A one-foot hydrated bentonite seal was then placed on top of the filter sand and the remainder of the borehole was backfilled to grade. Following installation, each of the wells were surveyed to determine relative casing elevation to the nearest 0.01 ft and horizontal position to the nearest 0.1 ft. Prior to sampling, a synoptic round of depth-to-groundwater (DTW) measurements were obtained from wells MW1-MW6 on August 1, 2017 to determine the water table elevation and to calculate the volume of standing water in the well.

Temporary probe samples were collected using a geoprobe SP22 stainless steel retractable groundwater sampler. Sampling consisted of driving the rods to a depth of 15 feet below grade and then retracting the rods approximately 4 feet to expose the screen. Groundwater sampling from both the temporary probe sampler and the monitoring wells was performed utilizing a peristaltic pump with dedicated silicon pump tubing and polyethylene sample tubing.

Monitoring well and temporary probe sampling locations are identified in **Figure 5.** Well completion reports detailing monitoring well construction are provided in **Appendix B**.

2.1.3 Samples Collected

A summary of the sampling performed during the RI is provided in **Table 2**.

2.1.3.1 Soil Samples

A total of fourteen soil samples were collected from 7 soil borings for laboratory analysis of VOCs (EPA Method 8260), SVOCs (EPA Method 8270), TAL metals and pesticides/PCBs (EPA Method 8081/8082).

2.1.3.2 Groundwater Samples

Groundwater samples were obtained from thirteen locations including seven using a Geoprobe sampler and six water table monitoring wells. All groundwater samples were analyzed for VOCs. In addition, samples from Wells MW1-MW6 were analyzed for SVOCs by EPA method 8260 / 8270, pesticides / PCBs by EPA method 8081 / 8082 and target analyte list (TAL) metals.

2.1.3.3 Soil Gas Samples

To assess the presence of VOCs in soil gas beneath the site, six soil vapor implants were installed at the Site and sampled on August 1, 2017. The vapor implants (Geoprobe™ Model AT86 series), were constructed of a 6-inch length of double woven stainless steel wire and installed to a depth of 9 ft below grade using Geoprobe™ equipment. All soil gas samples were collected over a 2 hr sampling period.

Soil vapor samples were collected in accordance with the procedures as described in section 2.4 of the approved RIR and the *Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH 10/06).*

2.1.4 Chemical Analytical Work Performed

Each soil and groundwater sample was placed in pre-cleaned laboratory supplied glassware, and placed in a cooler packed with ice for transport to the laboratory. Laboratory services for soil and groundwater sample analysis were provided by Phoenix Environmental Laboratories of Manchester, CT, a New York State ELAP certified environmental laboratory (ELAP Certification No. 11301).

Retained soil samples were submitted for laboratory analysis of one or more of the following analyses: volatile organic compounds (VOCs) by EPA Method 8260, semi-volatile organic compounds (SVOCs) by EPA Method 8270, TAL Metals, pesticides and PCBs by EPA Method 8081/8082.

All groundwater samples were analyzed for VOCs. In addition, samples from Wells MW1-MW6 were analyzed for SVOCs by EPA method 8260 / 8270, pesticides / PCBs by EPA method 8081 / 8082 and target analyte list (TAL) metals.

2.1.5 Documentation

A map showing the locations of the soil borings is provided in **Figure 4.** The locations of the monitoring wells and soil gas sample collection points are provided in **Figure 5**. The results of sample soil, groundwater and soil gas samples collected during the RI are summarized in **Tables 3** through **14** and **Figures 7** through **9**. Below is a summary of the RI findings.

The results of sampling performed during the RI, identified tert-butylbenzene in soil on lot 37 adjacent to the main building at a depth interval of 10-13 ft below surface grade. Other parameters such as sec-butylbenzene and n-butylbenzene were also present in samples in this area below SCOs. Given the absence of other petroleum VOCs, it is likely that the source of the butylbenzenes was a solvent associated with the preparation of steel for painting, or as part of the painting / coating process. The location behind the main building suggests a surface discharge of the solvent in this area of the Site.

Elevated levels of SVOCs, pesticides and PCBs are present in fill materials on lot 37. Metals including arsenic, barium, copper, zinc and hazardous levels of lead are present in both shallow and deep soils throughout the site and may be related to fill materials, historic painting / coating operations or a combination of both.

Minor levels of tert-butylbenzene have transferred to the dissolved phase as evidenced by its presence slightly above its standard in monitoring wells MW2, MW3 and MW4. Other VOC detections reported slightly above groundwater standards included 2-Isopropyltoluene, naphthalene and sec-Butylbenzene.

SVOC detections above groundwater standards were limited to those parameters with part per trillion standards including benz(a)anthracene, benzo(a)pyrene, (b)fluoranthene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene. The SVOCs / concentrations report are commonly associated with background conditions.

Several dissolved metals were detected above standards including iron, magnesium, manganese, and sodium in most of the wells. These metals are consistent with general groundwater quality

throughout the area and are representative of brackish conditions. Lead was also reported above standards at the MW2 location

CVOCs including TCE and PCE were reported in soil vapor at five locations across the Site. Concentrations were generally low with the exception of two locations in which elevated levels of either TCE or PCE were reported separately. There was no evidence that the CVOCs were site related.

2.2 SIGNIFICANT THREAT

The NYSDEC and NYSDOH will review the RI Report and will determine whether the Site does or does not pose a significant threat to human health and the environment. Notice of that determination will be provided during the public comment period, through fact sheet No. 2 and the Proposed Decision Document.

2.3 SITE HISTORY

2.3.1 Past Uses and Ownership

The Site is currently owned by the requestors, 270 Green LLC and 270 Green Holdings LLC who purchased the property on January 28, 2016. The site is currently vacant with no building structures remaining.

The historic use of the Site includes a construction company, a steel company, a metal products company, a knitting mill, a jewelry manufacturing facility, a truck appraisals company and a packing facility. The property was most recently used by a steel fabrication and painting facility that occupied the Site for the past 40 years.

From 1905 to 1942, the Site was developed with wagon sheds, a storage building in the southern portion (from 1905 to 1916) and stables. From 1942 to 1965, the northeast portion of the Site was vacant, the northwest portion was developed with a single-story commercial/manufacturing building occupied by a portable beds manufacturing facility and the south portion of the Site was developed with a single-story structure which was occupied by a feather sorting facility from

1942 to 1951 and vacant from 1951 to 1965. From 1965 to 1978, two single-story buildings located in the northwest and south portions of the Site were occupied by factories. In the period between 1978 to 1986, the northeast portion of the Site was utilized for iron painting, the northwest portion was occupied by a factory and a building on the south portion was occupied by a warehouse. From 1987 to 2007, the northeast portion was utilized for iron painting, the south portion of the Site was vacant and the northwest portion of the Site was developed with a building occupied by a factory. A listing of previous owners and operators for the property is as follows:

Previous Owners (All Lots)

Dates	Name	Comments	Contact Info
Prior to 2/19/2016	Achilles Steel Fabricators Inc.	Deed	262 Green Street, Brooklyn, NY 11222
From 2/19/2016 to Present	270 Green LLC, 270 Green Holdings LLC	Deed	209 Harrison Ave, Brooklyn, NY 11206

Previous Operators (Lot 28)

Dates	Name	Comments	Contact Info
1941	Auto Wrecking, Repair and sales	Certificate of Occupancy	81-87 Provost Street, Brooklyn, NY 11222
1978-2007	Iron Painting	Sanborn Maps	81-87 Provost Street, Brooklyn, NY 11222
2014	Steel and construction material storage, wood pallet storage	Phase I Inspection	81-87 Provost Street, Brooklyn, NY 11222

Previous Operators (Lots 24 and 26)

Dates	Name	Comments	Contact Info
1928-1934	Arthur Eastley General Contractor (262 Green)	City Directory	262 Green Street, Brooklyn, NY 11222
1940-2013	Achilles Construction Co. (262 Green)	City Directory	262 Green Street, Brooklyn, NY 11222
1949-1976	Leo Sumin Metal Products (262 Green)	City Directory	262 Green Street, Brooklyn, NY 11222
1960	Chas-Mar Mfg Corp, Efficiency Devices Knitting Equip, Fillinger L Truck Appraisals, Hasco Jewelry Mfg Co, Joseph Knitting Mills, National Cyclo	City Directory	262 Green Street, Brooklyn, NY 11222
1976-1992	Sebro Packing Corp. (262 Green)	City Directory	262 Green Street, Brooklyn, NY 11222
2014	Metal fabrication and painting	Phase I Inspection	262 Green Street, Brooklyn, NY 11222

Previous Operators (Lot 37)

Dates	Name	Comments	Contact Info
1942	Feather Sorting	Sanborn Maps	265-269 Huron Street, Brooklyn, NY 11222
1951	Vacant	Sanborn Maps	265-269 Huron Street, Brooklyn, NY 11222
1965	Manufacturing	Sanborn Maps	265-269 Huron Street, Brooklyn, NY 11222
1978-1986	Warehouse	Sanborn Maps	265-269 Huron Street, Brooklyn, NY 11222
1987-2007	Vacant	Sanborn Maps	265-269 Huron Street, Brooklyn, NY 11222
2014	Storage of construction materials, iron and wood pallets	Phase I Inspection	265-269 Huron Street, Brooklyn, NY 11222

2.3.2 Summary of Previous Reports

Environmental investigations performed at the Site include the following:

- Phase I Environmental Site Assessment (EBC - June 2014)
- Phase II Subsurface Investigation (EBC - November 2014)

June 2014 – Phase I Environmental Site Assessment (EBC)

EBC was able to establish a history for the property dating back to 1887. In 1887, the Site was vacant undeveloped land. From 1905 to 1942, the Site was developed with wagon sheds, a storage building in the southern portion (from 1905 to 1916) and stables. From 1942 to 1965, the northeast portion of the Site was vacant, the northwest portion was developed with the present day single-story commercial/manufacturing building occupied by a portable beds manufacturing facility and the south portion of the Site was developed with a single-story structure which was occupied by a feather sorting facility from 1942 to 1951 and vacant from 1951 to 1965. From 1965 to 1978, the two single-story buildings located in the northwest and south portions of the Site were occupied by factories. In the period between 1978 to 1986, the northeast portion of the Site was utilized for iron painting, the northwest portion was occupied by a factory and the building on the south portion was occupied by a warehouse. From 1987 to 2007, the northeast portion was utilized for iron painting, the south portion of the Site was vacant and the northwest portion of the Site was developed with the a building occupied by a factory. At the time of the Phase I the manufacturing building on the northwest portion of the Site was occupied by a steel fabrication facility and the northeast and south portions of the Site are utilized for storage of wooden pallets, steel, plywood and construction materials. Several commercial and

manufacturing tenants have historically occupied the Site including a construction company, a steel company, a metal products company, a knitting mill, a jewelry manufacturing facility, a truck appraisals company and a packing facility. The steel fabrication facility has been a tenant of the Site for the past 40 years.

RECOGNIZED ENVIROMENTAL CONDITIONS

Based upon reconnaissance of the Site and surrounding properties, interviews and review of historical records and regulatory agency databases, this assessment has revealed recognized environmental conditions in connection with the Site and is further discussed below:

- The present day steel fabrication facility has occupied the manufacturing building located in the northwest portion of the Site at 262-266 Green Street for nearly forty (40) years since at least 1976. During the onsite reconnaissance, EBC noted the presence of several containers of chemicals including paints, paint thinners and diesel and a drum of waste oil in the building. The usage of these chemicals in connection with the steel fabrication operations conducted onsite represents a significant environmental concern as it is likely that these chemicals have impacted the subsurface of the Site due to the prolonged duration of operations.

- The current manufacturing building located in the northwest portion of the Site at 262-266 Green Street (Lots 24, 26) has been occupied by various manufacturing tenants from as far back as 1942. These include a portable bed manufacturing facility from 1942 to 1965 and various factories from 1965 to 1976 including a metal products facility, a steel company, a construction company and a jewelry manufacturing facility. The historical manufacturing operations would have likely involved the use of cutting oils and solvents, and generated waste containing oils, solvents, and heavy metals. Due to the duration of historical occupancy by factories (nearly 36 years), the unknown operations performed onsite, and the likely use of other petroleum products and hazardous substances, all under circumstances outside of regulatory agency oversight (prior to modern oversight standards), it is likely that the historical use of the northwest portion of the Site has resulted in a release of hazardous substances or petroleum products to the subsurface of the Site.

- According to historical resources reviewed, the northeast portion of the Site at 268-276 Green Street (Lot 28) was utilized for auto wrecking and auto repair activities in 1941 and for iron painting operations beginning 1978 to 2007 (29 years). These historical operations would have involved the use of solvents, paints and petroleum products which would have likely impacted the subsurface of the Site. Hence the historical iron painting and auto repair activities conducted in the northeast portion of the Site represent a significant environmental concern.

- According to historical resources reviewed, the prior single-story commercial/manufacturing building located in the south portion of the Site at 267-269 Huron Street (Lot 37) was occupied by a factory from 1965 to circa 1978. The historical manufacturing operations would have involved the use of cutting oils and solvents, and generated waste containing oils, solvents, and heavy metals. Therefore, is likely that the historical use of the south portion of the Site has resulted in a release of hazardous substances or petroleum products to the subsurface of the Site.

- EBC noted a vent pipe in on the northeast corner of 266 Green Street likely associated with a heating oil AST or UST during the site inspection. Due to the amount of materials stored adjacent to this location, EBC was unable to determine the location of the suspect tank. The owner indicated that the Site was not equipped with a UST or a AST and is currently heated by natural gas fired equipment. The UST/AST was not identified during the regulatory database search. However, the likely presence of a UST/AST on the Site as indicated by the presence of the vent pipe represents a significant environmental concern.

EBC recommends that a Phase II subsurface investigation be performed on the entire Site (as manufacturing/painting operations have been conducted in the northwest, northeast and the majority of the south portions) to determine if the historical and current occupancy of manufacturing tenants has impacted the subsurface of the Site. In addition, EBC recommends a GPR survey to identify the location of the suspect UST/AST on the Site.

November 2014 - Phase II Subsurface Investigation Report (EBC)

The field work portion of the subsurface investigation was performed on July 15, 2014, and August 7, 2014. The subsurface investigation consisted of the collection and analysis of seven soil samples and seven groundwater samples.

The report concluded the following:

Based on the soil borings, soil at the Site consists of a 2 to 5 foot layer of historic fill material (black/brown silty sand with brick, concrete and wood) underlain by a brown sand. Grey stained soil with PID readings of approximately 2,750 ppm was noted for soil recovered from soil boring SB1 from immediately above and immediately below the groundwater interface. Grey stained soil and elevated PID readings were also encountered at soil borings SB3 and SB8 at the groundwater interface. Groundwater was encountered in each of the soil borings at depths varying from 10.40 to 11.86 ft below grade.

Petroleum related VOCs were detected in multiple soil samples collected at the Site at concentrations below Unrestricted Use Soil Cleanup Objectives, including 2-isopropyltoluene, n-butylbenzene, and sec-butylbenzene. Additional VOCs detected in on-site soil below Unrestricted Use SCOs included acetone, carbon disulfide, methyl ethyl ketone, 1,1,2-and trichloroethane. The petroleum related VOC tert-butylbenzene was detected above Unrestricted Use SCOs in soil sample B3(10-13'), but the concentration was below Restricted Residential Use SCOs.

SVOCs were reported above Industrial Use SCOs (benzo(a)pyrene) and Restricted Residential Use SCOs (benzo(a)anthracene, benzo(b)pyrene) and Unrestricted Use SCOs (benzo(k)fluorenthene, chrysene).

PCB-1248 (maximum 800 ppm) was detected above Unrestricted Use SCOs within two of the shallow soil samples collected from the 0-2ft interval.

The metals arsenic (maximum 28.3 mg/Kg), and lead (maximum 4,120 mg/Kg) were reported above Industrial Use SCOs. Lead was also reported as hazardous with a TCLP lead

concentration of 9.79 mg/L. Barium (maximum 786 mg/Kg), copper (maximum 845 mg/Kg) and mercury (maximum 3.85 mg/Kg) were all reported above Commercial Use SCOs. Cadmium (2.95 mg/Kg), was detected above the Restricted Residential Use SCO. Chromium, nickel and zinc were all reported above Unrestricted Use SCOs.

Based on the TCLP Lead concentration of 9.79 mg/L reported, soil at the Site will require classification as hazardous (D008). EBC recommends a Soil/Materials management Plan (SMMP) be prepared to address soil excavated as part of Site redevelopment. The SMMP should include procedures for (a) characterization of fill/soil to be excavated for the proposed redevelopment in accordance with the proposed soil/fill disposal facility, (b) soil screening, (c) community air monitoring, (d) soil/fill excavation, loading and disposal, (e) soil reuse and/or soil import, (f) odor control, and (g) underground storage tank contingency plan.

2.4 GEOLOGICAL CONDITIONS

Long Island's present configuration is primarily the result of glaciation which during the Pleistocene Era, predominately that of the last ice age, the Wisconsin, which ended about ten thousand years ago. Two advances of the Wisconsin ice sheet during the Upper Pleistocene of the Quaternary Period caused the island to be blanketed with till, ice contact stratified drift, outwash deposits and deposits composed of clay, silt, sand, gravel and boulders. The terminal moraines and the north shore are composed primarily of stratified drift with some till. The area between the moraines and south of them are mostly the outwash deposits. Central and South Long Island are of the glaciofluvial origin. The Pleistocene deposits lie atop the gently-dipping Cretaceous rocks.

The bedrock was eroded to a peneplain before the overlying Cretaceous sediments were deposited; its surface shows signs of later erosion by Pleistocene glaciation in the north. Bedrock crops out in northwestern Queens County near the East River and slopes southward at about eighty (80) feet per mile. Consequently, the overlying formations form a southward-dipping wedge that attains a maximum thickness of one-thousand fifty (1,050) feet in the southeast corner of Queens County. The maximum thickness of unconsolidated deposits in Kings County is about eight-hundred (800) feet in southeast Kings.

Overlying bedrock is the Raritan Formation of Late Cretaceous age, consisting of the Lloyd Sand Member and an upper, unnamed clay member. Overlying the Raritan Formation is the Magothy Formation and Matawan Group, undifferentiated, also of Late Cretaceous age, the Jameco Gravel of Pleistocene age, the Gardiners Clay of Pleistocene age, upper Pleistocene deposits of Wisconsin age, and a generally thin soil mantle of Holocene age. Holocene beach deposits make up most of the Rockaway Peninsula and Coney Island in the south, and Holocene salt-marsh deposits underlie and fringe the south-shore bay areas. Artificial filling has been done in low and swampy shoreline areas. Because Holocene deposits occur in relative small areas of Kings and Queens and are not significant water bearers, they are not included in the geologic descriptions that follow. The four distinct formations on Long Island: The Upper Glacial, the Jameco, the Magothy and the Lloyd aquifers. They all occur in the unconsolidated materials overlying the bedrock.

Subsurface soils at the Site consist of historic fill materials to a depth of approximately 12 to 15 feet below the surface followed by silty-sand. Groundwater at the Site is present under water table conditions at a depth of 10.40 to 11.86 feet below grade and flows east. Based on regional groundwater elevation maps, groundwater flow is to the northeast (**Figure 6**).

Considering the poor quality of groundwater in the area, including high levels of sodium and magnesium associated with saltwater intrusion and impacts from petroleum and industrial solvents related to the former commercial / industrial use of the area, there is no anticipated future groundwater use.

2.5 CONTAMINATION CONDITIONS

2.5.1 Conceptual Model of Site Contamination

VOC contamination at the Site is limited to tert-butylbenzene in a single location (B3), though other parameters such as sec-butylbenzene and n-butylbenzene were also present in the sample below SCOs. Tert-butylbenzene, sec-butylbenzene and n-butylbenzene below SCOs were reported in only one other location, B1. Both locations are on Lot 37, which was an open area behind the main building and used for storage of equipment and materials. Given the absence of

other petroleum VOCs it is likely that the source of the butylbenzenes was a solvent associated with the preparation of steel for painting, or as part of the painting / coating process. The location behind the main building suggests a surface discharge of the solvent in this area of the Site.

The discharge was sufficient to reach the water table as indicated by the presence of tert-butylbenzene above its unrestricted SCO at the 10-13 ft interval. Minor levels of tert-butylbenzene have transferred to the dissolved phase as evidenced by its presence slightly above its standard in monitoring wells MW2, MW3 and MW4.

Elevated levels of SVOCs and PCBs on lot 37 are likely related to fill materials as are some of the metals present across the Site. However, it is also possible that some of the metals including arsenic, barium, lead and zinc may be related to the industrial painting / coating operations historically present on the Site.

2.5.2 Description of Areas of Concern

The source area identified during the RI consists of tert-butylbenzene in soil on lot 37 adjacent to the main building. This contamination is present in both shallow and deeper soils to some degree.

Elevated levels of SVOCs, pesticides and PCBs are present in fill materials on lot 37. Metals including hazardous levels of lead are present in both shallow and deep soils throughout the site and may be related to fill materials, historic painting / coating operations or a combination of both.

2.5.3 Soil/Fill Contamination

VOC contamination at the Site consists of tert-butylbenzene at a depth of 10-13 feet on Lot 37.

Historic fill material has been identified across the Site to depths of 12 feet below grade. Depending on location, the historic fill material contains one or more metals including arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel and zinc, pesticides, PAHs and PCBs above unrestricted and / or restricted use SCOs.

2.5.3.1 Summary of Soil/Fill Data

Soil sample results from the RI are summarized in **Tables 3-6**. Further information on soil sample collection, handling and analysis can be found in the RI Report (EBC 8/17).

2.5.3.2 Comparison of Soil/Fill with SCGs

Table 7 shows sample results above Track 1 Unrestricted SCOs for all overburden soil at the Site. **Figure 7** is spider map which shows soil sampling locations and summarizes shallow and deep sample results above Track 1 Unrestricted SCOs for all overburden soil.

2.5.4 On-Site and Off-Site Groundwater Contamination

VOC detections above groundwater standards were limited to 2-Isopropyltoluene, naphthalene, sec-Butylbenzene, and tert-Butylbenzene in sampling locations B3, B7, MW2, MW3, and MW4. SVOC detections above groundwater standards included benz(a)anthracene, benzo(a)pyrene, (b)fluoranthene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene in wells MW1 through MW6.

Several dissolved metals were detected above standards including iron, magnesium, manganese, and sodium in most of the wells. These metals are consistent with general groundwater quality throughout the area. Lead was also reported above standards at the MW2 location

2.5.4.1 Summary of Groundwater Data

The results of groundwater samples collected during the RI are summarized in **Tables 8-12**. Further information on groundwater sample collection, handling and analysis can be found in the RI Report (EBC 8/17).

2.5.4.2 Comparison of Groundwater with SCGs

Sample results above GA groundwater standards in monitor wells prior to the remedy are shown in **Table 13**. Spider maps which show groundwater sampling locations and summarize results above GA groundwater standards prior to the remedy are shown in **Figure 8**.

2.5.5 On-Site and Off-Site Soil Vapor Contamination

Petroleum-related VOCs were generally low in all soil vapor samples and consistent with levels typically found in this area of Brooklyn. Chlorinated VOCs (CVOCs) including TCE and PCE were reported in SG1, SG2, SG4, SG5, and SG6. Concentrations were generally low with the exception of PCE in SG6 at 63.5 ug/m^3, and TCE in SG1 at 40.2 ug/m^3

2.5.5.1 Summary of Soil Vapor Data

A table of soil vapor data collected prior to the remedy is shown in **Table 14**. Further information on soil gas sample collection, handling and analysis can be found in the RI Report (EBC 8/17). Soil vapor results are posted on **Figure 9**.

2.6 ENVIRONMENTAL AND PUBLIC HEALTH ASSESSMENTS

2.6.1 Qualitative Human Health Exposure Assessment

The objective of the qualitative exposure assessment under the Brownfields Cleanup Program (BCP) is to identify potential receptors to the contaminants of concern (COC) that are present at, or migrating from, the Site. The identification of exposure pathways describes the route that the COC takes to travel from the source to the receptor. An identified pathway indicates that the potential for exposure exists; it does not imply that exposures actually occur. An exposure pathway has five elements; a contaminant source, release and transport mechanisms, point of exposure, route of exposure and a receptor population.

The potential exposure pathways identified below, represent both current and future exposure scenarios.

Contaminant Source

Source areas of the Site include tert-butylbenzene in soil on lot 37 adjacent to the main building. This contamination is present in both shallow and deeper soils to some degree.

Elevated levels of SVOCs, pesticides and PCBs are present in fill materials on lot 37. Metals including hazardous levels of lead are present in both shallow and deep soils throughout the site

and may be related to fill materials, historic painting / coating operations or a combination of both.

Contaminant Release and Transport Mechanism

Contaminants including tert-butylbenzene in deeper soil in contact with groundwater have transferred to the dissolved phase at low but elevated concentrations (slightly above standards). Shallow soil can affect groundwater quality as surface runoff infiltrates the impacted zone and acts as transport water for dissolved constituents. Dissolved components migrating from the source area or infiltrating through surface runoff would travel east with groundwater flow.

Although elevated levels of PCE and TCE were each reported separately in soil vapor at two locations, there is no evidence that the CVOCs are site related. There does not appear to be any significant migration of contaminants at the Site in either groundwater or soil vapor.

Point of Exposure, Route of Exposure and Potentially Exposed Populations

Potential On-Site Exposures: Remediation workers and construction workers engaged in the excavation of impacted and non-impacted soil at the site may be exposed to petroleum VOCs / SVOCs, CVOCs and heavy metals through several routes including inhalation, ingestion and dermal contact. A site specific Health and Safety Plan has been developed to identify and minimize the potential hazards to on-site workers. Site trespassers could also be exposed to impacted soil during excavation; however security measures including an 8 ft high construction fence and 24 hr security will minimize potential exposure through this route.

Potential Off-Site Exposures: Off-Site residents could also be exposed to dust or vapors during the excavation of impacted soil. A site-specific Community Air Monitoring Plan has been developed to identify and minimize the potential for off-site exposure to residents through continuous air monitoring during excavation activity.

The entire area is serviced by the New York City Water System which distributes water from the Croton Reservoir system. Since there are no public or private potable supply wells in the area, exposure from contact with tap water is not a concern. Off-site exposure is therefore limited to

vapor intrusion from light end petroleum VOCs or CVOCs. This potential will be further reduced following the removal of the source area under the planned redevelopment of the Site.

2.6.2 Fish & Wildlife Remedial Impact Analysis

Since VOCs in groundwater may be migrating beneath the Site at low concentrations in an easterly direction, the groundwater to surface water discharge pathway was evaluated. The nearest surface water to the Site is Whale Creek (Newtown Creek) located approximately 900 feet to the east. Based upon the concentrations of contaminants currently in groundwater beneath the Site, there are no expected impacts to surface water environments from contaminants migrating from the Site.

2.7 REMEDIAL ACTION OBJECTIVES

Based on the results of the Remedial Investigation, the following Remedial Action Objectives (RAOs) have been identified for this Site.

2.7.1 Groundwater

RAOs for Public Health Protection

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

RAOs for Environmental Protection

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

2.7.2 Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

- Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota due to ingestion/direct contact with contaminated soil that would cause toxicity or bioaccumulation through the terrestrial food chain.

2.7.3 Soil Vapor

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

3.0 DESCRIPTION OF REMEDIAL ACTION PLAN

3.1 EVALUATION OF REMEDIAL ALTERNATIVES

The goal of the remedy selection process under the BCP is to select a remedy that is protective of human health and the environment taking into consideration the current, intended and reasonably anticipated future use of the property. The remedy selection process begins by establishing RAOs for media in which chemical constituents were found in exceedance of NYSDEC standards, criteria and guidance values (SCGs). A remedy is then developed based on the following nine criteria:

- Protection of human health and the environment;
- Compliance with SCGs;
- Short-term effectiveness and impacts;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume of contaminated material;
- Implementability;
- Cost effectiveness;
- Community Acceptance; and
- Land use.

The first two criteria are threshold criteria and must be satisfied in order for an alternative to be considered for selection. The remaining seven criteria are balancing criteria which are used to compare the positive and negative aspects of each of the remedial alternatives, provided the alternative satisfies the threshold criteria.

3.2 STANDARDS, CRITERIA AND GUIDANCE (SCG)

A criterion for remedy selection is evaluation for conformance with SCGs that are applicable, relevant and appropriate. Principal SCGs that are applicable, relevant and appropriate for evaluating the alternatives for remediation of this BCP site include the following:

- 29 CFR Part 1910.120 - Hazardous Waste Operations and Emergency Response

- 10 NYCRR Part 67 – Lead
- 6 NYCRR Part 371 - Identification and Listing of Hazardous Wastes (November 1998)
- 6 NYCRR Part 372 - Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities (November 1998)
- 6 NYCRR Subpart 374-1 - Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities (November 1998)
- 6 NYCRR Part 375 - 6 NYCRR Part 375 Environmental Remediation Programs Subparts 375-1, 375-3 and 375-6 (December 2006)
- 6 NYCRR Part 376 - Land Disposal Restrictions
- 6 NYCRR Part 608 - Use and Protection of Waters
- 6 NYCRR Parts 700-706 - Water Quality Standards (June 1998)
- 6 NYCRR Part 750 through 758 - Implementation of NPDES Program in NYS ("SPDES Regulations")
- 6 NYCRR Part 375-6 Soil Cleanup Objectives
- New York State Groundwater Quality Standards – 6 NYCRR Part 703;
- NYSDEC Ambient Water Quality Standards and Guidance Values – TOGS 1.1.1;
- NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation - May 2010;
- NYSDEC Draft Brownfield Cleanup Program Guide – May 2004;
- New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan
- NYS Waste Transporter Permits – 6 NYCRR Part 364;
- NYS Solid Waste Management Requirements – 6 NYCRR Part 360 and Part 364.
- TAGM 4059 - Making Changes To Selected Remedies (May 1998)
- STARS #1 - Petroleum-Contaminated Soil Guidance Policy
- TAGM 3028 - "Contained In" Criteria for Environmental Media: Soil Action Levels (August 1997)
- DER-10, Technical Guidance for Site Investigation and Remediation, May 2010
- DER-23 / Citizen Participation Handbook for Remedial Programs, January 2010

- OSWER Directive 9200.4-17 - Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites (November 1997)

Additional regulations and guidance are applicable, relevant, and appropriate to the remedial alternatives and will be complied in connection with implementation of the remedial program; however, the list above is intended to represent the principal SCGs which should be considered in evaluating the remedial alternatives for the BCP site.

Conformance with the appropriate standards for remediation of contaminated soil is an important criterion in evaluating the remedial alternatives for the BCP site. Presently, in New York State 6 NYCRR Part 375 establishes the primary SCGs associated with remediation of contaminated soil at sites which are in the BCP. If proposing remediation pursuant to a Track other than Track 1 (Unrestricted Use), 6 NYCRR Part 375 requires evaluation of at least one remedial alternative pursuant to Track I (Unrestricted Use) and one other alternative developed by the applicant for the proposed use of the BCP site. The remedial alternatives presented in Section 3.3 of this work plan have been prepared in conformance with this requirement.

3.3 ALTERNATIVES ANALYSIS

The goal of the remedy selection process under the BCP is to select a remedy that is protective of human health and the environment taking into consideration the current, intended and reasonably anticipated future use of the property. The remedy selection process begins by establishing RAOs for media in which chemical constituents were found in exceedance of NYSDEC standards, criteria and guidance values (SCGs). A remedy is then developed based on the following nine criteria:

- Protection of human health and the environment;
- Compliance with SCGs;
- Short-term effectiveness and impacts;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume of contaminated material;
- Implementability;

- Cost effectiveness;
- Community Acceptance; and
- Land use.

The following is a detailed description of the alternatives analysis and remedy selection to address impacted media at the Site. This analysis was prepared in accordance with 6 NYCRR Part 375-1.8(f) and Part 375-3.8(f) and Section 4.3(c) of NYSDEC DER-10. As required, a minimum of two remedial alternatives (including a Track 1 scenario) are evaluated, as follows:

- Alternative 1 - Track 1, remediation of all soils above bedrock to unrestricted use criteria. Excavation to a minimum depth of 15 feet across the Site with the excavation of the hot spot areas as needed to meet unrestricted use SCOs. The Alternative includes full dewatering / treatment of groundwater beneath the entire Site to facilitate excavation of soils below the water table. This alternative does not allow the use of long-term institutional /engineering controls to address impacted media or prevent exposures which may be required beneath the new building.

- Alternative 2 - Track 2, remediation of all soils to restricted commercial use criteria to a depth of 15 feet if soils below 15 feet do not represent a source of contamination. This alternative would require excavation across most of the site to a depth of 15 ft. This alternative does not allow the use of long-term institutional /engineering controls to meet soil cleanup objectives. Long-term institutional /engineering controls are allowed to address or prevent exposures from other impacted media. It is presented as an Alternative to Track 1 in the event that Track 1 cannot be achieved with an excavation of 15 ft.

- Alternative 3 - Track 4, remediation of all soils to site specific SCOs. This alternative would require a base excavation depth to approximately 10 feet with over-excavation as needed to remove hazardous soils. Track 4 does allow the use of long-term institutional/engineering controls (>5yrs) to meet soil cleanup objectives and to address or prevent exposures from other impacted media such as soil gas which will be evaluated following remediation. This alternative will require institutional controls in the form of

an environmental easement. Alternative 3 is presented as a contingency to Alternative 2 in the event that commercial SCOs cannot be achieved in the top 15 feet of soil. This alternative will require both institutional and engineering controls including a cover system (building slab), an environmental easement and a Site Management Plan.

3.4 REMEDIAL ALTERNATIVE 1

The following sections provide an evaluation of Alternative 1 based on the nine evaluation criteria as previously discussed.

3.4.1 Overall Protection of Human Health and the Environment

Alternative 1 will be protective of human health and the environment by eliminating constituents in soil related to petroleum, hazardous lead, metals, pesticides and PCBs. The potential for human and environmental exposure to these constituents on-site will be eliminated by excavation of all soils with parameters in excess of unrestricted criteria, disposing of excavated materials off-site, full dewatering and treatment of groundwater beneath the Site and backfilling as needed with certified clean fill, virgin mined materials or recycled concrete materials from a NYSDEC permitted recycling facility.

Potential post-remediation exposures to on-site residents from soil vapors are not expected to require the operation of SSD systems, though groundwater use will be restricted at the Site until groundwater quality recovers.

During remedial and construction activity workers and area residents may be exposed to impacted soil and vapors. Worker exposure to soil and vapors will be minimized through implementation of a Health and Safety Plan. Exposures to area residents from dust and/or vapors will be minimized through the use of engineering controls and through implementation of a Community Air Monitoring Plan (CAMP).

3.4.2 Compliance with Remedial Goals, SCGs and RAOs

Alternative 1 will achieve compliance with the remedial goals, SCGs and RAOs for soil through source removal to Track 1 unrestricted cleanup levels. SCGs for groundwater will also be

achieved as impacted groundwater will be fully extracted and treated prior to discharge into the NYC sewer system (see Section 5.5.10). Compliance with SCGs for soil vapor is expected following completion of the remedial action.

3.4.3 Long-Term Effectiveness and Permanence

Alternative 1 achieves long term effectiveness and permanence by permanently removing and/or remediating all soils affected by Site contaminants or historic fill materials and by remediating groundwater. Under this Alternative, risk from soil impacts and groundwater will be eliminated. Aternative 1 will continue to meet RAOs for soil, groundwater and soil vapor in the future, providing a permanent long-term solution for the Site.

3.4.4 Reduction in Toxicity, Mobility or Volume through Treatment

Alternative 1 will permanently eliminate the toxicity, mobility, and volume of contaminants from on-site soil by meeting unrestricted objectives through excavation and from on-site groundwater by extraction, treatment and off-site discharge (sewer system) of groundwater beneath the Site during construction.

3.4.5 Short-Term Effectiveness

The potential for short-term adverse impacts and risks to the workers, the community, and the environment during the implementation of Alternative 1 is minimal.

Short-term exposure to on-site workers during excavation and loading activities will be addressed with a HASP and mitigated through the use of personal protective equipment, monitoring and engineering controls. Potential short-term exposure to the surrounding community will be addressed through the use of odor and dust-suppression techniques and through the implementation of a CAMP which will require air monitoring activities during all excavation and soil disturbance activities.

Other potential impacts to the community such as construction-related noise, vibrations and traffic, will be controlled and regulated under the terms of the NYS Department of Buildings issued building permit which can place a Stop Work Order on the property for unsafe conditions,

community impacts or violation of the terms and conditions of the permit. Decontamination procedures of equipment, including trucks transporting soil to off-site disposal facilities, will minimize the potential for impacted soil to be dispersed beyond the Site boundary. A truck traffic plan has also been prepared to minimize disturbance to the local roads and community.

3.4.6 Implementability

The techniques, materials and equipment to implement Alternative 1 are readily available and have been proven effective in remediating the contaminants associated with the Site. Excavation and construction dewatering for the remediation of soils and groundwater are both a "low tech" and reliable method which has a long and proven track record on the remediation of hazardous waste and petroleum spill sites.

3.4.7 Cost

Costs associated with Alternative 1 are estimated at approximately $ 5,691,111. This cost estimate includes the following elements and assumptions:

- Excavate the entire site to a depth of 15 ft below grade or greater as necessary to remediate and remove all soil at the Site with constituents above unrestricted SCOs.
- Disposal of approximately 6,388 cy of hazardous lead soil (TCLP>5 mg/L);
- Disposal of approximately 3,147 cy of historic fill soil as non-hazardous with lead levels >1,000 ppm;
- Disposal of approximately 3,985 cy of historic fill soil as non-hazardous with lead levels <1,000 ppm;
- Groundwater dewatering and treatment to allow excavation below the water table,
- Endpont verification sampling to confirm achievement of the remedy; and,
- HASP and CAMP monitoring for the duration of the remedial activities.

3.4.8 Compatibility with Land Use

The proposed redevelopment of the Site is compatible with its current M3-1 zoning. Following remediation, the Site will meet unrestricted use objectives which will exceed the objectives for

its planned commercial use. A groundwater use restriction may be required to prevent future exposure to affected groundwater.

3.4.9 Community Acceptance

No questions regarding the Site have been raised regarding remedial options to date. This RAWP will be subject to a 45-day public comment period to determine if the community had comments on the presented remedial alternatives and selected remedy. If no comments are received regarding Alternative 1, it will be considered to be acceptable to the community.

3.5 REMEDIAL ALTERNATIVE 2

The following sections provide an evaluation of Alternative 2 based on the nine evaluation criteria as previously discussed.

3.5.1 Overall Protection of Human Health and the Environment

Alternative 2 will be protective of human health and the environment by eliminating constituents in soil related to petroleum and historic fill. The potential for human and environmental exposure to these constituents on-site will be eliminated by excavation of all petroleum contaminated and historic fill soils with parameters in excess of commercial criteria within the top 15 feet, disposing of excavated materials off-site and backfilling as needed with certified clean fill, virgin mined materials or recycled concrete materials from a NYSDEC permitted recycling facility.

Potential post-remediation exposures to on-site residents from soil vapors are not expected to require the operation of SSD systems, though groundwater use will be restricted at the Site until groundwater quality recovers.

During remedial and construction activity, workers and area residents may be exposed to impacted soil and vapors. Worker exposure to soil and vapors will be minimized through implementation of a HASP. Exposures to area residents from dust and or vapors will be minimized through the use of engineering controls and through implementation of a CAMP.

3.5.2 Compliance with Remedial Goals, SCGs and RAOs

Alternative 2 will achieve compliance with the remedial goals, SCGs and RAOs for soil through source removal to restricted commercial cleanup levels for the top 15 feet. SCGs for groundwater are also expected to be achieved over time since groundwater is only slightly impacted and will improve through removal of source materials. Compliance with SCGs for soil vapor is expected following completion of the remedial action by removal of all impacted soil.

3.5.3 Long-term Effectiveness and Permanence

Alternative 2 achieves long term effectiveness and permanence by permanently removing and/or remediating all soils affected by Site contaminants above restricted commercial objectives to a depth of 15 feet. Under this Alternative risk from soil impacts and groundwater will be eliminated. Alternative 2 will continue to meet RAOs for soil, groundwater and soil vapor in the future, providing a permanent long-term solution for the Site.

3.5.4 Reduction in Toxicity, Mobility or Volume through Treatment

Alternative 2 will permanently eliminate the toxicity, mobility, and volume of contaminants from on-site soil by meeting restricted commercial objectives in the upper 15 feet and from further improvement to groundwater quality over time.

3.5.5 Short-term Effectiveness

The potential for short-term adverse impacts and risks to the workers, the community, and the environment during the implementation of Alternative 2 is minimal. Short-term exposure to on-site workers during excavation and loading activities will be addressed with a HASP and mitigated through the use of personal protective equipment, monitoring and engineering controls. Potential short-term exposure to the surrounding community will be addressed through the use of odor and dust-suppression techniques and through the implementation of a CAMP which will require air monitoring activities during all excavation and soil disturbance activities.

Other potential impacts to the community such as construction-related noise, vibrations and traffic will be controlled and regulated under the terms of the NYS Department of Buildings issued building permit which can place a Stop Work Order on the property for unsafe conditions,

community impacts or violation of the terms and conditions of the permit. Decontamination procedures of equipment, including trucks transporting soil to off-site disposal facilities will minimize the potential for impacted soil to be dispersed beyond the Site boundary. A truck traffic plan will also be prepared to minimize disturbance to the local roads and community.

3.5.6 Implementability

The techniques, materials and equipment to implement Alternative 2 are readily available and have been proven effective in remediating the contaminants associated with the Site. Excavation for the remediation of soils is a "low tech" and reliable method which has a long and proven track record on the remediation of hazardous waste and petroleum spill sites.

3.5.7 Cost

Costs associated with Alternative 2 are slightly lower than Alternative 1 requiring less excavation overall to meet SCOs in the upper 15 feet of soil. Alternative 2 does add the cost of an Environmental Easement package, however. The total cost associated with Alternative 2 is $ 5,473,005. This cost estimate includes the following elements and assumptions:

- Excavate to 15 ft below grade on Lots 24, 26, 37 and a portion (1/4) of Lot 28 to remove soil with parameters above Restricted Commercial SCOs.
- Excavate to 10 ft below grade on 3/4ths of Lot 28 to remove soil with parameters above Restricted Commercial SCOs.
- Disposal of approximately 6,388 cy of hazardous lead soil (TCLP>5 mg/L);
- Disposal of approximately 2,700 cy of historic fill soil as non-hazardous with lead levels >1,000 ppm;
- Disposal of approximately 2,700 cy of historic fill soil as non-hazardous with lead levels <1,000 ppm;
- Groundwater dewatering and treatment to allow excavation below the water table,
- HASP and CAMP monitoring for the duration of the remedial activities,
- Endpoint verification sampling to confirm achievement of the remedy; and,
- Preparation and Filing of an Environmental Easement.

3.5.8 Compatibility with Land Use

The proposed redevelopment of the Site is compatible with its current M3-1 zoning. Following remediation, the Site will meet restricted-commercial use objectives which will meet objectives for its planned commercial use. A groundwater use restriction may be required to prevent future exposure to affected groundwater.

3.5.9 Community Acceptance

No questions regarding the Site have been raised regarding remedial options to date. This RAWP will be subject to a 45-day public comment period to determine if the community has any comments on the presented remedial alternatives and selected remedy. If no comments are received, it will be considered to be acceptable to the community.

3.6 REMEDIAL ALTERNATIVE 3

The following sections provide an evaluation of Alternative 3 based on the nine evaluation criteria as previously discussed.

3.6.1 Overall Protection of Human Health and the Environment

Alternative 3 will be protective of human health and the environment by eliminating constituents in soil related to petroleum and historic fill. The potential for human and environmental exposure to these constituents on-site will be eliminated by excavation of all petroleum contaminated and historic fill soils with parameters in excess of site-specific cleanup criteria, disposing of excavated materials off-site and backfilling as needed with certified clean fill, virgin mined materials or recycled concrete materials from a NYSDEC permitted recycling facility.

Potential post-remediation exposures to on-site residents from soil vapors are not expected to require the operation of SSD systems, though groundwater use will be restricted at the Site until groundwater quality recovers.

During remedial and construction activity, workers and area residents may be exposed to impacted soil and vapors. Worker exposure to soil and vapors will be minimized through

implementation of a HASP. Exposures to area residents from dust and or vapors will be minimized through the use of engineering controls and through implementation of a CAMP.

3.6.2 Compliance with Remedial Goals, SCGs and RAOs

Alternative 2 will achieve compliance with the remedial goals, SCGs and RAOs for soil through source removal and the removal of lead hazardous soil. SCGs for groundwater are also expected to be achieved over time since groundwater is only slightly impacted and will improve through removal of source materials. Compliance with SCGs for soil vapor is expected following completion of the remedial action by removal of all impacted soil.

3.6.3 Long-term Effectiveness and Permanence

Alternative 3 achieves long term effectiveness and permanence by permanently removing and/or remediating all lead hazardous soils and those affected by Site contaminants above site specific SCOs. Under this Alternative risk from soil impacts and groundwater will be eliminated. Alternative 3 will continue to meet RAOs for soil, groundwater and soil vapor in the future, providing a permanent long-term solution for the Site.

3.6.4 Reduction in Toxicity, Mobility or Volume through Treatment

Alternative 3 will permanently eliminate the toxicity, mobility, and volume of contaminants from on-site soil by meeting site specific SCOs and from further improvement to groundwater quality over time.

3.6.5 Short-term Effectiveness

The potential for short-term adverse impacts and risks to the workers, the community, and the environment during the implementation of Alternative 3 is minimal. Short-term exposure to on-site workers during excavation and loading activities will be addressed with a HASP and mitigated through the use of personal protective equipment, monitoring and engineering controls. Potential short-term exposure to the surrounding community will be addressed through the use of odor and dust-suppression techniques and through the implementation of a CAMP which will require air monitoring activities during all excavation and soil disturbance activities.

Other potential impacts to the community such as construction-related noise, vibrations and traffic will be controlled and regulated under the terms of the NYS Department of Buildings issued building permit which can place a Stop Work Order on the property for unsafe conditions, community impacts or violation of the terms and conditions of the permit. Decontamination procedures of equipment, including trucks transporting soil to off-site disposal facilities will minimize the potential for impacted soil to be dispersed beyond the Site boundary. A truck traffic plan will also be prepared to minimize disturbance to the local roads and community.

3.6.6 Implementability

The techniques, materials and equipment to implement Alternative 3 are readily available and have been proven effective in remediating the contaminants associated with the Site. Excavation for the remediation of soils is a "low tech" and reliable method which has a long and proven track record on the remediation of hazardous waste and petroleum spill sites.

3.6.7 Cost

Costs associated with Alternative 3 are lower than Alternative 2 requiring less excavation overall to meet SCOs. Alternative 3 adds the cost of a Site Management Plan in addition to the Environmental Easement package required under Alternative 2. The total cost associated with Alternative 3 is $ 5,066,566. This cost estimate includes the following elements and assumptions:

- Excavate to 15 ft below grade on Lot 37, 12 ft below grade on Lots 24 and 26 and 7 ft below grade on Lot 28 to remove all hazardous lead soil.
- Disposal of approximately 6,388 cy of hazardous lead soil (TCLP>5 mg/L);
- Disposal of approximately 1,666 cy of historic fill soil as non-hazardous with lead levels >1,000 ppm;
- Disposal of approximately 833 cy of historic fill soil as non-hazardous with lead levels <1,000 ppm;
- Groundwater dewatering and treatment to allow excavation below the water table;
- HASP and CAMP monitoring for the duration of the remedial activities;
- Preparation of a Site Management Plan; and,

- Preparation and Filing of an Environmental Easement.

3.6.8 Compatibility with Land Use

The proposed redevelopment of the Site is compatible with its current M3-1 zoning. Following remediation, the Site will meet site specific objectives which will be compatable with its planned commercial use. A groundwater use restriction may be required to prevent future exposure to affected groundwater.

3.6.9 Community Acceptance

No questions regarding the Site have been raised regarding remedial options to date. This RAWP will be subject to a 45-day public comment period to determine if the community has any comments on the presented remedial alternatives and selected remedy. If no comments are received, it will be considered to be acceptable to the community.

3.7 SELECTION OF THE PREFERRED REMEDY

The remedy recommended for the site is a Track 1 alternative which consists of the removal and proper off-site disposal of all petroleum impacted soil, hazardous lead soil and historic fill material with parameters above unrestricted SCOs.

Any backfill materials used at the site will either consist of clean native soil excavated from other areas of the site, virgin mined materials, recycled materials or certified fill which meets unrestricted SCOs.

Groundwater will be remediated through construction dewatering and treatment followed by discharge into the NYC sewer system.

3.7.1 Preferred Remedy Land Use Factor Evaluation

As required by Article 27, Title 14 of the Environmental Conservation Law 27-1415, the following land use factor evaluation examines whether the preferred alternative is acceptable based on the 14 criteria presented in the following subsections.

Zoning

The proposed redevelopment project, which includes the construction of new 6-story mixed-use commercial retail and office building is in compliance with the M3-1. Therefore the project will be constructed as-of-right regardless of the remedy implemented. The preferred remedy will comply with current zoning.

Applicable Comprehensive Community Master Plans or Land Use Plans

The proposed redevelopment project and selected remedy are consistent with comprehensive master and land use plans, specifically the Greenpoint-Williamsburg rezoning action (CEQR No. 04DCP003K). This area-wide comprehensive re-zoning was completed by the New York City Department of City Planning and adopted by the City Council in May 2005. The preferred remedy will be in full compliance with this applicable land use plan.

Surrounding Property Uses

Surrounding land use includes the NYC Department of Public works water treatment plant to the east, commercial and industrial properties to the north and south and residential properties (one-two family, multi-family) to the west.

There are no schools or daycare facilities identified within 1,000 feet of the project Site. The nearest schools are The NY League for Early Learning located at 725 Leonard Street approximately 1,900 feet to the southwest, P.S. 31 Samuel F. Dupont - Elementary School, located at 75 Meserole Avenue approximately 2,700 ft southwest and P.S. 34 Oliver H Perry - Elementary School located at 131 Norman Avenue approximately 2,700 feet to the south. There were no nursing homes or hospitals identified within 1,000 feet of the Site

The proposed project is compatible with the surrounding land use and will be in compliance with the current zoning. The proposed remedy will not interfere with surrounding property uses and considers the short term affects to neighboring properties.

Citizen Participation

Citizen participation for implementation of the preferred alternative will be performed in accordance with DER 23 and NYCRR Part 375-1.10 and Part 375-3.10. A Citizen Participation

Plan has been prepared and is available for public review at the identified document repositories (Brooklyn Community Board 1, Greenpoint Branch of the Brooklyn Public Library).

Environmental Justice Concerns

The Site is located within a potential environmental justice area. The NYSDEC defines a potential environmental justice area as a "minority or low-income community that may bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Environmental justice means the fair treatment and meaningful involvement of all people regardless of race, color, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Since the goal of the remedy will achieve the highest level of cleanup and will remove contaminated materials from the community, the remedy poses no environmental justice concerns.

Land use designations

The proposed remedy is consistent with land-use designations.

Population growth patterns

Population growth patterns support the proposed use for the Site. The preferred remedy will not negatively affect on population growth patterns.

Accessibility to existing infrastructure

The Site is accessible to existing infrastructure. The close proximity of the Site to the Brooklyn - Queens Expressway (I-287) will assist soil transportation and contractor access to the Site. The Site is also accessible to mass transit and is within walking distance to the G line with a subway

stop on Greenpoint Avenue and Java Street (2 blocks to the west and 3 blocks to the south). The preferred remedy will not alter accessibility to existing infrastructure.

Proximity to cultural resources

The proposed remedy will not negatively impact cultural resources.

Proximity to natural resources

The proposed remedy will improve the local environment and will not negatively impact affect natural resources.

Off-Site groundwater impacts

The proposed remedy will improve potential off-site groundwater impacts by removing petroleum impacted soil from the site and treating VOC impacted groundwater. The proposed remedy will not affect natural resources other than to potentially improve the quality of groundwater on a local basis.

Proximity to floodplains

The entire Site is located within a designated moderate risk flood zone area. The nearest high risk flood zone is located approximately 450 feet to the northeast.

Geography and geology of the Site

The selected remedy will excavate historic fill materials and soil with parameters above unrestricted SCOs across the Site to an anticipated depth as great as 15 feet and petroleum impacted soil. The selected alternative and development of the site have considered the geography and geology of the Site.

Current Institutional Controls

There are no institutional controls presently assigned to the Site.

3.8 SUMMARY OF SELECTED REMEDIAL ACTIONS

The remedy recommended for the Site is a Track 1 alternative (Alternative 1) which consists of the removal of all on-site soils which exceed the UUSCOs. It is expected that a Track 1

alternative will require excavation to a minimum depth of 15 feet across the Site with additional excavation with possible over-excavation in some areas. In addition, all fill material with parameters above unrestricted SCOs will be removed from the Site and properly disposed of at an off-site facility. The remedy will include the following items:

1. Excavation of soil/fill exceeding Track 1 unrestricted use SCOs as listed in **Table 1** to depths of 15 feet below grade site-wide with over excavation as necessary to meet unrestricted use SCOs;
2. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work;
3. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of Track 1 SCOs;
4. 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;
5. Dewatering and treatment of groundwater before discharging to the NYC sewer system under a NYCDEP sewer discharge permit.
6. Import of materials to be used for backfill and cover in compliance with: (1) chemical limits and other specifications included in **Table 1**, (2) all Federal, State and local rules and regulations for handling and transport of material.
7. If a Track 1 cleanup is not achieved, an Environmental Easement will be filed against the Site to limit use of the Site to Restricted Commercial.
8. If a Track 2 cleanup is not achieved, a Site Management Plan will be prepared to maintain a site cover system.

Although the goal of the remedy will be to remove all soil exceeding the Track 1 SCOs, if Track 1 SCOs cannot be achieved then a Track 2 or Track 4 remedy may result. All responsibilities associated with the Remedial Action, including permitting requirements and pretreatment requirements, will be addressed in accordance with all applicable Federal, State and local rules and regulations.

Remedial activities will be performed at the Site in accordance with this NYSDEC-approved RAWP. Any anticipated deviations to the RAWP shall be submitted to the NYSDEC for review.

4.0 REMEDIAL ACTION PROGRAM

The objective of this section of the Remedial Action Work Plan, is to present a scope of work which will be approved by NYSDEC and when completely implemented will ready the BCP site for development under the Contemplated Use consistent with the requirements of the Brownfield Cleanup Program.

4.1 GOVERNING DOCUMENTS

Governing documents and procedures included in the Remedial Work Plan include a Site-specific Health and Safety Plan (HASP), a Community Air Monitoring Plan (CAMP), a Citizen Participation Plan, a Soil Management Plan (SoMP), a Quality Assurance Project Plan (QAPP), fluid management procedures, and contractors' site operations and quality control procedures. Highlights of these documents and procedures are provided in the following sections.

4.1.1 Health & Safety Plan (HASP)

Contractors and subcontractors will have the option of adopting this HASP or developing their own site-specific document. If a contractor or subcontractor chooses to prepare their own HASP, the Remedial Engineer will insure that it meets the minimum requirements as detailed in the site-specific HASP prepared for the Site.

Activities performed under the HASP will comply with applicable parts of OSHA Regulations, primarily 29 CFR Parts 1910 and 1926. Modifications to the HASP may be made with the approval of the Remedial Engineer (RE), Site Safety Manager (SSM) and/or Project Manager (PM).

All remedial work performed under this plan will be in full compliance with governmental requirements, including Site and worker safety requirements mandated by Federal OSHA.

The Volunteer and associated parties preparing the remedial documents submitted to the State and those performing the construction work, are completely responsible for the preparation of an

appropriate Health and Safety Plan and for the appropriate performance of work according to that plan and applicable laws.

The Health and Safety Plan (HASP) and requirements defined in this Remedial Action Work Plan pertain to all remedial and invasive work performed at the Site until the issuance of a Certificate of Completion.

The Site Safety Coordinator will be Ms. Chawinie Reilly. Her resume is provided in **Attachment E**. Confined space entry will comply with all OSHA requirements to address the potential risk posed by combustible and toxic gasses. A copy of the Site Specific Health and Safety Plan is provided in **Attachment B.**

4.1.2 Quality Assurance Project Plan (QAPP)

The fundamental QA objective with respect to accuracy, precision, and sensitivity of analysis for laboratory analytical data is to achieve the QC acceptance of the analytical protocol. The accuracy, precision and completeness requirements will be addressed by the laboratory for all data generated.

Collected samples will be appropriately packaged, placed in coolers and shipped via overnight courier or delivered directly to the analytical laboratory by field personnel. Samples will be containerized in appropriate laboratory provided glassware and shipped in plastic coolers. Samples will be preserved through the use of ice or a cold-pak(s) to maintain a temperature of 4^{o}C.

Dedicated disposable sampling materials will be used for both soil and groundwater samples (if collected), eliminating the need to prepare field equipment (rinsate) blanks. However, if non-disposable equipment is used, (stainless steel scoop, etc.) field rinsate blanks will be prepared at the rate of 1 for every eight samples collected.

Decontamination of non-dedicated sampling equipment will consist of the following:

- Gently tap or scrape to remove adhered soil
- Rinse with tap water
- Wash with alconox® detergent solution and scrub
- Rinse with tap water
- Rinse with distilled or deionized water

Prepare field blanks by poring distilled or deionized water over decontaminated equipment and collecting the water in laboratory provided containers. Trip blanks will accompany samples each time they are transported to the laboratory. Matrix spike and matrix spike duplicates (MS/MSD) will be collected at the rate of one per 20 samples submitted to the laboratory. Laboratory reports will be upgradeable to ASP category B deliverables for use in the preparation of a data usability report (DUSR). The QAPP for the Site is provided in **Attachment C**.

4.1.3 Construction Quality Assurance Plan (CQAP)

All construction work related to the remedy (i.e. soil excavation) will be monitored by EBC / AMC field personnel under the direct supervision of the Remedial Engineer. Monitoring during soil excavation will be performed to protect the health of site workers and the surrounding community. A Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) have been specifically developed for this project. These plans specify the monitoring procedures, action levels, and contingency measures that are required to protect public health.

All intrusive and soil disturbance activities will be monitored by an environmental professional (EP) under the direct supervision of the Remedial Engineer who will record observations in the site field book and complete a photographic log of the daily activities. The EP will provide daily updates to the Project Manager and Remedial Engineer who will both make periodic visits to the site as needed to assure construction quality. Daily updates will also be submitted to the NYSDEC. See section 4.4.1 Daily Reports.

4.1.4 Soil/Materials Management Plan (SoMP)

A SoMP has been prepared for excavation, handling, storage, transport and disposal of all soils/materials that are disturbed / excavated at the Site. The SoMP includes all of the controls that will be applied to these efforts to assure effective, nuisance-free performance in compliance with all applicable Federal, State and local laws and regulations. The SoMP is presented in Section 5.4.

4.1.5 Erosion and Sediment Control Plan (ESCP)

Erosion and sediment controls will be performed in conformance with requirements presented in the New York State Guidelines for Urban Erosion and Sediment Control. Typical measures that will be utilized at various stages of the project to limit the potential for erosion and migration of soil include the use of hay bales, temporary stabilized construction entrances/exits, placement of silt fencing and/or hay bales around soil stockpiles, and dust control measures.

4.1.6 Community Air Monitoring Plan (CAMP)

The CAMP provides measures for protection for on-site workers and the downwind community (i.e., off-site receptors including residences, businesses, and on-site workers not directly involved in the remedial work) from potential airborne contaminant releases resulting from remedial activities.

The action levels specified require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that the remedial work did not spread contamination off-site through the air. The primary concerns for this site are vapors, nuisance odors and dust particulates.

The primary concerns for this site are vapors, nuisance odors and dust particulates. The CAMP prepared for implementation of the RAWP is provided in **Attachment D**.

4.1.7 Contractors Site Operations Plan (SOP)

The Remedial Engineer has reviewed all plans and submittals for this remedial project (including those listed above and contractor and sub-contractor document submittals) and confirms that they

are in compliance with this RAWP. The Remedial Engineer is responsible to ensure that all later document submittals for this remedial project, including contractor and sub-contractor document submittals, are in compliance with this RAWP. All remedial documents will be submitted to NYSDEC and NYSDOH in a timely manner and prior to the start of work.

4.1.8 Citizen Participation Plan (CPP)

The Citizen Participation Plan will be prepared for this project to keep the public informed of key project documents and events through the distribution of fact sheets through the Department's List Serv. The public was initially informed of the Site and the opportunity to join the List Serv through an ad placed in the local newspaper and mailed fact sheets.

No changes will be made to approved Fact Sheets authorized for release by NYSDEC without written consent of the NYSDEC. No other information, such as brochures and flyers, will be included with the Fact Sheet mailing.

Document repositories have been established at the following locations and contain all applicable project documents:

Brooklyn Public Library – Greenpoint Branch

107 Norman Avenue, Brooklyn, NY 11222 - (718) 349-8504

Hours

Mon 10:00 AM - 6:00 PM Thu 10:00 AM - 8:00 PM Sun - Closed
Tue 10:00 AM - 8:00 PM Fri 10:00 AM - 6:00 PM
Wed 10:00 AM - 8:00 PM Sat 10:00 AM - 5:00 PM

Brooklyn Community Board 1

435 Graham Avenue,
Brooklyn, NY 11211
Phone: 718-389-0009

4.2 GENERAL REMEDIAL ACTION INFORMATION

4.2.1 Project Organization

The Project Manager for the Remedial Activity will be Mr. Keith Butler. Overall responsibility for the BCP project will be Mr. Charles B. Sosik, P.G., P.HG. The Remedial Engineer for this project is Mr. Ariel Czemerinski, P.E. Resumes of key personnel involved in the Remedial Action are included in **Attachment E**.

4.2.2 Remedial Engineer

The Remedial Engineer for this project will be Mr. Ariel Czemerinski, P.E. The Remedial Engineer is a registered professional engineer licensed by the State of New York. The Remedial Engineer will have primary direct responsibility for implementation of the remedial program for the Site. The Remedial Engineer will certify in the Final Engineering Report that the remedial activities were observed by qualified environmental professionals under his supervision and that the remediation requirements set forth in the Remedial Action Work Plan and any other relevant provisions of ECL 27-1419 have been achieved in full conformance with that Plan. Other Remedial Engineer certification requirements are listed later in this RAWP.

The Remedial Engineer will review all pre-remedial plans submitted by contractors and subcontractors involved in all aspects of remedial construction, including soil excavation, stockpiling, characterization, removal and disposal, air monitoring, emergency spill response services, import of back fill material, and management of waste transport and disposal, and will certify compliance in the Final Remediation Report. The Remedial Engineer will provide the certifications listed in Section 10.1 in the Final Engineering Report.

4.2.3 Remedial Action Schedule

The remedial action will begin with mobilization of equipment and material to the Site, which will begin approximately 1 week following RAWP approval and 10 days after the distribution of the remedial construction Fact Sheet. A pre-construction meeting will be held among NYSDEC, the Remedial Engineer, and the selected remedial contractor prior to site mobilization. Mobilization will be followed by soil removal and disposal and confirmation sampling. The

work is expected to take 6 months as part of the construction excavation and foundation installation.

4.2.4 Work Hours

The hours for operation of remedial construction will conform to the New York City Department of Buildings construction code requirements or according to specific variances issued by that agency. DEC will be notified by the Applicant of any variances issued by the Department of Buildings. NYSDEC reserves the right to deny alternate remedial construction hours.

4.2.5 Site Security

A construction fence has been erected around the entire property as required by the NYC Department of Buildings. The fence will be maintained as required and secured at the end of each work day.

4.2.6 Traffic Control

The Volunteer's construction management personnel will direct the arrival or departure of construction vehicles, and provide flag services as needed to maintain safe travel exiting and entering the Site from Bedford Avenue. Traffic related to on-going remedial activity will require the staging of 10-wheel dump trucks on Green, Provost and Huron Streets on a daily basis during soil excavation activity. The soil disposal transport route will be as follows:

- ENTERING SITE - from the Long Island Expressway heading west; take the Van Dam Street Exit (No. 15), heading west on Borden Avenue to Greenpoint Avenue. Turn left on Greenpoint Avenue heading southwest to Provost Street. Turn right on Provost Street, heading North to Huron Street. Turn Left on Huron Street heading west to the Site entrance on the right (1 block).

- EXITING SITE – Turn right onto Green Street heading east one block to Provost Street. Turn right onto Provost Street heading south to Greenpoint Avenue. Turn left on Greenpoint Avenue heading northeast to the Long Island Expressway Service Road.

Turn Right heading east on the service Road and merge left onto the Long Island Expressway.

A map showing the truck routes is included as **Figure 10**.

4.2.7 Worker Training and Monitoring

An excavation contractor with appropriate experience, personnel and training is required to perform the removal of the petroleum impacted and historic fill soil. The excavation contractor's on-site personnel engaged in petroleum impacted soil and historic fill removal will have a minimum of 24 hour Hazardous Waste Operations and Emergency Response Operations training.

All field personnel involved in remedial activities will participate in training, if required under 29 CFR 1910.120, including 24 and 40-hour hazardous waste operator training and annual 8-hour refresher training. The Site Safety Officer will be responsible for maintaining workers training records.

Personnel entering any exclusion zone will be trained in the provisions of the HASP and be required to sign a HASP acknowledgment.

All on-site personnel engaged in remedial or sampling activities must receive adequate site-specific training in the form of an on-site Health and Safety briefing prior to participating in field work with emphasis on the following:

- Protection of the adjacent community from hazardous vapors and / or dust which may be released during intrusive activities.
- Identification of chemicals known or suspected to be present on-site and the health effects and hazards of those substances.
- The need for vigilance in personnel protection, and the importance of attention to proper use, fit and care of personnel protective equipment.
- Decontamination procedures.

- Site control including work zones, access and security.
- Hazards and protection against heat or cold.
- The proper observance of daily health and safety practices, such as entry and exit of work zones and site. Proper hygiene during lunch, break, etc.
- Emergency procedures to be followed in case of fire, explosion and sudden release of hazardous gases.

4.2.8 Agency Approvals

The Applicant has addressed all SEQRA requirements for this Site. All permits or government approvals required for remedial construction have been, obtained prior to the start of remedial construction.

The planned end use for the Site is in conformance with the current zoning for the property as determined by New York City Department of Planning. A Certificate of Completion will not be issued for the project unless conformance with zoning designation is demonstrated.

A complete list of all local, regional and national governmental permits, certificates or other approvals or authorizations required to perform the remedial and development work is attached in **Table 15**. This list includes a citation of the law, statute or code to be complied with, the originating agency, and a contact name and phone number in that agency. This list will be updated in the Final Remediation Report.

4.2.9 Pre-Construction Meeting with NYSDEC

A pre-construction meeting with the Project Manager, Remedial Engineer, Construction Manager, Owner's Representative and the NYSDEC will take place prior to the start of major construction activities.

4.2.10 Emergency Contact Information

An emergency contact sheet with names and phone numbers is included in **Table 16**. That document will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency.

4.2.11 Remedial Action Costs

The total estimated cost of the Remedial Action is $ 5,691,111. An itemized and detailed summary of estimated costs for all remedial activity is attached as **Attachment F**. This will be revised based on actual costs and submitted as an appendix to the Final Remediation Report.

4.3 SITE PREPARATION

4.3.1 Mobilization

Mobilization will include the delivery of construction equipment and materials to the site. All construction personnel will receive site orientation and training in accordance with the site specific HASP, CAMP and established policies and procedures to be followed during the implementation of the RAWP. The remediation contractor, construction manager and all associated subcontractors will each receive a copy of the RAWP and the site specific HASP and will be briefed on their contents.

4.3.2 Erosion and Sedimentation Controls

Soil erosion and sediment control measures for management of storm water will be installed in accordance with the New York Guidelines for Urban Erosion and Sediment Control. Haybales and/or silt fence will be placed by the remedial contractor at locations surrounding excavation areas and within the perimeter fencing as needed, to control stormwater runoff and surface water from exiting the excavation. These control measures will be installed prior to initiating the soil excavation.

4.3.3 Stabilized Construction Entrance(s)

Stabilized construction entrances will be installed at all points of vehicle ingress and egress to the Site. The stabilized entrances will be constructed of a 4 to 6-inch bed of crushed stone or crushed concrete which will be sloped back toward the interior of the Site. The stabilized entrances will be inspected on a daily basis during soil loading activities and reinforced as needed with additional stone/concrete material to prevent the accumulation of ruts, mud or soil.

4.3.4 Utility Marker and Easements Layout

The Applicant and its contractors are solely responsible for the identification of utilities that might be affected by work under the RAWP and implementation of all required, appropriate, or necessary health and safety measures during performance of work under this RAWP. The Applicant and its contractors are solely responsible for safe execution of all invasive and other work performed under this RAWP. The Applicant and its contractors must obtain any local, State or Federal permits or approvals pertinent to such work that may be required to perform work under this RAWP. Approval of this RAWP by NYSDEC does not constitute satisfaction of these requirements.

The presence of utilities and easements on the Site has been investigated by the Remedial Engineer. It has been determined that no risk or impediment to the planned work under this Remedial Action Work Plan is posed by utilities or easements on the Site.

4.3.5 Sheeting and Shoring

Appropriate management of structural stability of on-Site or off-Site structures during on-Site activities including excavation is the sole responsibility of the Applicant and its contractors. The Applicant and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan. The Applicant and its contractors must obtain any local, State or Federal permits or approvals that may be required to perform work under this Plan. Further, the Applicant and its contractors are solely responsible for the implementation of all required, appropriate, or necessary health and safety measures during performance of work under the approved Plan.

4.3.6 Equipment and Material Staging

All equipment and work materials will be staged on-Site in areas as designated by the General Contractor, and / or Construction Site Superintendant.

4.3.7 Decontamination Area

A temporary truck decontamination pad will be constructed to decontaminate trucks and other vehicles/equipment leaving the Site. The pad will be constructed by placing a 4 to 6-inch bed of

stone aggregate such as crushed rock or RCA. The pad will be bermed at the sides and sloped back to the interior of the Site. The truck pad will be sized to accommodate the largest construction vehicle used and located in line with the stabilized construction entrance. The pad will be inspected on a daily basis during soil loading activities and reinforced as needed with additional stone/concrete material to prevent the accumulation of ruts, mud or soil.

4.3.8 Site Fencing

An 8-foot high chain-link fence is present around the portions of the Site which are not bordered by adjacent buildings with entrance / exit gates located on Green and Huron Streets. This fence will be properly secured at the end of the day and supplemented, as needed, by installing orange safety fencing around open excavations to ensure on-site worker safety.

4.3.9 Demobilization

Demobilization will consist of the restoration of material staging areas and the disposal of materials and/or general refuse in accordance with acceptable rules and regulations. Materials used in remedial activities will be removed and disposed properly. All equipment will be decontaminated prior to leaving the Site.

4.4 REPORTING

All daily and monthly Reports will be included in the Final Engineering Report.

4.4.1 Daily Reports

Daily reports will be submitted to NYSDEC and NYSDOH Project Managers by the end of each day in which remedial activity takes place. Daily reports will include:

- An update of progress made during the reporting day;
- A summary of any and all complaints with relevant details (names, phone numbers);
- A summary of CAMP finding, including excursions;
- Photos of the work being performed;
- An explanation of notable Site conditions.

Daily reports are not intended to be the mode of communication for notification to the NYSDEC of emergencies (accident, spill), requests for changes to the RAWP or other sensitive or time critical information. However, such conditions must also be included in the daily reports. Emergency conditions and changes to the RAWP will be addressed directly to NYSDEC Project Manager via personal communication.

These reports will include a summary of air sampling results, odor and dust problems and corrective actions, and all complaints received from the public.

4.4.2 Monthly Reports

Monthly reports will be submitted to NYSDEC and NYSDOH Project Managers within one week following the end of the month of the reporting period and will include:

- Activities relative to the Site during the previous reporting period and those anticipated for the next reporting period, including a quantitative presentation of work performed (i.e. tons of material exported and imported, etc.);
- Description of approved activity modifications, including changes of work scope and/or schedule;
- Problems encountered and steps to resolve;
- Sampling results received, as applicable; and,
- An update of the remedial schedule including the percentage of project completion, unresolved delays encountered or anticipated that may affect the future schedule, and efforts made to mitigate such delays.

4.4.3 Other Reporting

Photographs will be taken of all remedial activities and submitted to NYSDEC in digital (JPEG, PDF) format. Photos will illustrate all remedial program elements and will be of acceptable quality. Representative photos of the Site prior to any Remedial Actions will be provided. Representative photos will be provided of each contaminant source, source area and Site structures before, during and after remediation. Photos will be included in the daily reports and a comprehensive collection of photos will be included in the Final Engineering Report.

Job-site record keeping for all remedial work will be appropriately documented. These records will be maintained on-Site at all times during the project and be available for inspection by NYSDEC and NYSDOH staff.

4.4.4 Complaint Management Plan

Complaints from the public regarding nuisance or other Site conditions including noise, odor, truck traffic etc., will be recorded in the Site field book and reported to the NYSDEC via email on the same day as the complaint is received.

4.4.5 Deviations from the Remedial Action Work Plan

Minor deviations from the RAWP will be identified in the daily update report and will be noted in the Final Engineering Report. When deviations are reported, a brief discussion will be provided which will state the following:

- Reasons for deviating from the approved RAWP;
- Effect of the deviations on overall remedy.

Major changes to the scope of work must be discussed with the NYSDEC and the NYSDOH prior to implementation. If the changes are considered to be significant enough, an addendum to the RAWP Work Plan will be prepared and submitted to NYSDEC / NYSDOH for review.

5.0 REMEDIAL ACTION: MATERIAL REMOVAL FROM SITE

Excavation work includes the following; the removal and off-Site disposal of the top 15 feet of soil across the Site with additional excavation as needed to remove all fill material / soil with parameters above unrestricted SCOs. Soil excavation will be performed using conventional equipment such as track-mounted excavators, backhoes and loaders.

All excavation work will be performed in accordance with the Site-specific HASP and CAMP. If an underground storage tank (UST) is discovered during excavation the NYSDEC Project Manager will be immediately notified and the UST removed and closed in accordance with DER-10, NYSDEC PBS regulations and NYC Fire Department regulations. It is anticipated that the excavation of petroleum and historic fill soils will be performed by the excavation contractor for the construction project using personnel with 24 hr HAZWOPER training.

Historic fill materials and petroleum contaminated soils will be excavated to a depth of approximately 15 feet (sitewide), as needed to achieve SCOs. An excavation plan showing the excavation depths to achieve the Track 1 remedy is provided in **Figure 11**.

Dewatering will be required for excavation of contaminated areas and for foundation construction.

5.1 CONTINGENCY

5.1.1 UST Removal Methods

USTs, if encountered during excavation activities at the Site, will be removed in accordance with the procedures described under the NYSDEC Memorandum for the Permanent Abandonment of Petroleum Storage Tanks and Section 5.5 of Draft DER-10 as follows:

- Remove all product to its lowest draw-off point
- Drain and flush piping into the tank
- Vacuum out the tank bottom consisting of water product and sludge

- Dig down to the top of the tank and expose the upper half of the tank
- Remove the fill tube and disconnect the fill, gauge, product and vent lines and pumps. Cap and plug open ends of lines
- Temporarily plug all tank openings, complete the excavation, remove the tank and place it in a secure location
- Render the tank safe and check the tank atmosphere to ensure that petroleum vapors have been satisfactorily purged from the tank
- Clean tank or remove to a storage yard for cleaning
- If the tank is to be moved it must be transported by a licensed waste transporter. Plug and cap all holes prior to transport leaving a 1/8 inch vent hole located at the top of the tank during transport
- After cleaning the tank must be made acceptable for disposal at a scrap yard by cleaning the tank interior with a high pressure rinse and cutting the tank in several pieces.

During the tank and pipe line removal the following field observations should be made and recorded:

- A description and photographic documentation of the tank and pipe line condition (pitting, holes, staining, leak points, evidence of repairs, etc.)
- Examination of the excavation floor and sidewalls for physical evidence of contamination (odor, staining, sheen, etc.)
- Periodic field screening (through bucket return) of the floor and sidewalls of the excavation with a calibrated photoionization detector (PID).

5.2 SOIL CLEANUP OBJECTIVES

The Soil Cleanup Objectives for this Site are listed in **Table 1**. **Table 7** summarizes all soil samples that exceed the SCOs proposed for this Remedial Action. Spider maps showing all soil samples that exceed the SCOs proposed for this Remedial Action are shown in **Figure 7**.

5.3 REMEDIAL PERFORMANCE EVALUATION (POST EXCAVATION END-POINT SAMPLING)

Post excavation (endpoint) soil samples will be collected from across the Site to verify that remedial goals have been achieved. Endpoint soil samples will be collected from the Site as follows:

(1) Site-wide endpoint soil samples will be collected following removal of all soil to verify that remedial goals have been achieved (**Figure 12**). The Site-wide endpoint soil samples will be analyzed for VOCs, SVOCs, pesticides, PCBs and metals. The collection of sidewall endpoint soil samples will be not be performed when soil is excavated to the property line.

5.3.1 End-Point Sampling Frequency

Endpoint sampling frequency will be in accordance with DER-10 section 5.4 which recommends the collection of one bottom sample per 900 sf of bottom area and one sidewall sample per 30 liner feet. Sidewall samples will not be collected where sheeting or shoring is present and will not be part of this program as soil will be fully excavated to the site boundaries.

5.3.2 Methodology

Collected samples be placed in glass jars supplied by the analytical laboratory and stored in a cooler with ice to maintain a temperature of 4 degrees C. Samples will either be picked up at the Site by a laboratory dispatched courier at the end of the day or transported back to the EBC /AMC office where they will be picked up the following day by the laboratory courier. All samples will be analyzed by a NYSDOH ELAP certified environmental laboratory

All post excavation (endpoint) soil samples will be analyzed for VOCs by EPA Method 8260B, SVOCs by EPA method 8270, pesticides/PCBs by EPA method 8081/8082 and TAL metals.

5.3.3 Reporting of Results

Sample analysis will be provided by a New York State certified environmental laboratory. Laboratory reports will include ASP category B deliverables for use in the preparation of a data

usability summary report (DUSR). All results will be provided in accordance with the NYSDEC Environmental Information Management System (EIMS) electronic data deliverable (EDD) format.

5.3.4 QA/QC

The fundamental QA objective with respect to accuracy, precision, and sensitivity of analysis for laboratory analytical data is to achieve the QC acceptance of the analytical protocol. The accuracy, precision and completeness requirements will be addressed by the laboratory for all data generated.

Collected samples will be appropriately packaged, placed in coolers and shipped via overnight courier or delivered directly to the analytical laboratory by field personnel. Samples will be containerized in appropriate laboratory provided glassware and shipped in plastic coolers. Samples will be preserved through the use of ice or cold-pak(s) to maintain a temperature of 4^{o}C.

Dedicated disposable sampling materials will be used for soil samples, eliminating the need to prepare field equipment (rinsate) blanks. However, if non-disposable equipment is used, (stainless steel scoop, etc.) field rinsate blanks will be prepared at the rate of 1 for every eight samples collected. Field blanks will be prepared by pouring distilled or deionized water over decontaminated equipment and collecting the water in laboratory provided containers.

Trip blanks will accompany samples each time they are transported to the laboratory. Matrix spike and matrix spike duplicates (MS/MSD) will be collected at the rate of one per 20 samples submitted to the laboratory.

5.3.5 DUSR

The DUSR provides a thorough evaluation of analytical data without third party data validation. The primary objective of a DUSR is to determine whether or not the data, as presented, meets the site/project specific criteria for data quality and data use. Verification and/or performance monitoring samples collected under this RAWP will be reviewed and evaluated in accordance with the Guidance for the Development of Data Usability Summary Reports as presented in

Appendix 2B of DER-10. The completed DUSR for verification/performance samples collected during implementation of this RAWP will be included in the final Engineering Report.

5.3.6 Reporting of End-Point Data in FER

All endpoint data collected as part of this remedial action will be summarized and presented in the Final Engineering Report. The summary tables will include comparison of results to unrestricted SCOs to verify attainment of Track 1. Laboratory reports and the DUSR will be included as an appendix in the FER.

5.4 ESTIMATED MATERIAL REMOVAL QUANTITIES

It is expected that 13,520 cubic yards (20,280 tons) will be generated by excavating the site area as shown on **Figure 11** to a depth of 15 ft below grade. This includes approximately 6,388 cy (9582 tons) of lead-hazardous soil, 3,147 cy (4,720 tons) of non-hazardous high lead soil and 3,985 cy (5,977 tons) of non-hazardous low lead soil for off-site disposal.

5.5 SOIL/MATERIALS MANAGEMENT PLAN

Pre-characterization samples have been collected to allow the soil to be loaded directly onto trucks for transport to the disposal facility. Waste classification for disposal purposes is as follows:

- Hazardous Lead — Lots 24 & 26: 3-6 ft, 9-12 ft
  Lot 37: 0-6 ft, 12-15 ft
  Lot 28: 0-6 ft
- Non-Hazardous (Lead>1,000) — Lots 24 & 26: 0-3 ft
  Lot 28: 6-8 ft, 12-14 ft
- Non-Hazardous (Lead<1,000) — Lots 24 & 26: 6-9 ft, 12-15 ft
  Lot 37: 6-12 ft
  Lot 28: 8-12 ft

Soil excavation will be performed in accordance with the procedures described under Section 5.5 of DER-10 as follows:

- A description and photographic documentation of the excavation.
- Examination of the excavation floor and sidewalls for physical evidence of contamination (odor, staining, sheen, etc.).
- Periodic field screening (through bucket return) of the floor and sidewalls of the excavation with a calibrated photoionization detector (PID).

Final excavation depth, length, and width will be determined by the Remedial Engineer or his designee, and will depend on the horizontal and vertical extent of contaminated soils as identified through physical examination (PID response, odor, staining, etc.). Expansion of the excavation beyond the planned hotspot area is anticipated and can easily be accommodated.

The following procedure will be used for the excavation of impacted soil (as necessary and appropriate):

- Wear appropriate health and safety equipment as outlined in the HASP;
- Prior to excavation, ensure that the area is clear of utility lines or other obstructions. Lay plastic sheeting on the ground next to the area to be excavated;
- Using a rubber-tired backhoe or track mounted excavator, remove overburden soils and stockpile or dispose of separate from the impacted soil;
- If USTs are discovered, the NYSDEC will be notified and the best course of action to remove the structure should be determined in the field. This may involve the continued removal of overburden to access the top of the structure or continued trenching around the perimeter to minimize its disturbance;
- If physically contaminated soil is present (e.g., staining, odors, sheen, PID response, etc), an attempt will be made to remove it to the extent not limited by the site boundaries. If possible, physically impacted soil will be removed using the backhoe or excavator, segregated from clean soils and overburden, and staged on separate dedicated plastic sheeting or live loaded into trucks from the disposal facility. Removal of the impacted

soils will continue until visibly clean material is encountered and monitoring instruments indicate that no contaminants are present;

- Excavated soils which are temporarily stockpiled on-site will be covered with 6-mil polyethylene sheeting while disposal options are determined. Sheeting will be checked on a daily basis and replaced, repaired or adjusted as needed to provide full coverage. The sheeting will be shaped and secured in such a manner as to drain runoff and direct it toward the interior of the property;
- Once the Remedial Engineer is satisfied with the removal effort, verification or confirmatory samples will be collected from the excavation as described in **Section 6.2** of this document.

5.5.1 Excavation of Petroleum Contaminated and Historic Fill Soil

Petroleum impacted soil is known to be present in the northern portion of Lot 37. The vertical extent is approximately 13 feet below grade. The petroleum impacted soil is present within the fill material found throughout the Site to depths of 12 feet below grade. The historic fill material contains SVOCs, metals, PCBs and pesticides above unrestricted and / or restricted commercial use SCOs. Historic fill material will be segregated from non-contaminated native soils (if excavated) and disposed of off-Site at a permitted disposal facility.

Historic fill soil classified as hazardous will be segregated from soil classified as non-hazardous and disposed of at a hazardous soil disposal facility. Historic fill soil classified as non-hazardous will be disposed of at a non-hazardous facility. Further delineation testing and confirmation sampling may be required by the selected non-hazardous disposal facility to confirm that the hazardous soil as been effectively segregated.

Historic fill soil with lead levels above 1,000 mg/kg will require further segregation for disposal at alternate facilities. Excavated historic fill materials will be pre-approved for disposal and live loaded into trucks for transport to the approved facilities. It is anticipated that the excavation of historic fill material will be performed by the excavation contractor for the construction project using trained personnel (24 hr HAZWOPER).

5.5.2 Excavation of Native Soils

Native soils are present directly below the fill materials. There are no plans to excavate clean native soil during the project. However, if non-contaminated native soil is excavated for some purpose they will be stockpiled on-site and characterized for reuse on-site in areas over excavated to remove historic fill. Any excess soil will be disposed of off-site as a beneficial re-use material upon approval by the NYSDEC Region 2's Division of Materials Management and the NYSDEC Project Manager for in-state reuse or will be transported out of state. Clean native soils utilized on-site will be subject to a testing program to verify that they meet unrestricted SCOs prior to use.

It is anticipated that the excavation of native soil materials will be performed by the excavation contractor for the construction project.

5.5.3 Soil Screening Methods

Visual, olfactory and PID soil screening and assessment will be performed by an environmental professional during all remedial and development excavations into known or potentially contaminated material (Residual Contamination Zone). Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during the remedy and during development phase, such as excavations for foundations and utility work, prior to issuance of the COC.

All primary contaminant sources (including but not limited to tanks and hotspots) identified during Site Characterization, Remedial Investigation, and Remedial Action will be surveyed by a surveyor licensed to practice in the State of New York. This information will be provided on maps in the Final Engineering Report.

Screening will be performed by qualified environmental professionals. Resumes will be provided for all personnel responsible for field screening (i.e. those representing the Remedial Engineer) of invasive work for unknown contaminant sources during remediation and development work.

5.5.4 Stockpile Methods

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.

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. Soils which exhibit strong odors will be completely sealed with heavy tarps or vapor suppressant foam.

5.5.5 Materials Excavation and Load Out

The Remedial Engineer or an EP under his/her supervision will oversee all invasive work and the excavation and load-out of all excavated material. The Volunteer and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

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).

Where effective, the equipment will be "dry" decontaminated using a broom and/or brushes. If significant amounts of soil or other contaminants remain after the dry decontamination, the equipment will also be pressure washed before leaving the Site. The EP will be responsible for ensuring that all outbound trucks are dry-brushed or washed on the truck wash/equipment pad before leaving the Site until the remedial construction is complete. Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-Site sediment tracking. The EP will be responsible for ensuring that all egress points for truck and equipment transport from the Site will be clean of dirt and other materials derived from the Site during Site remediation and development. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site derived materials.

The Volunteer 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

invasive work, the structural integrity of excavations, and for structures that may be affected by excavations (such as building foundations and bridge footings).

The Remedial Engineer will ensure that Site development activities will not interfere with, or otherwise impair or compromise, remedial activities proposed in this Remedial Action Work Plan. Development-related grading cuts and fills will not interfere with, or otherwise impair or compromise, the performance of remediation required by this plan.

Mechanical processing of historical fill material and contaminated soil on-Site is prohibited. All primary contaminant sources (including but not limited to tanks and hotspots) identified during Site Characterization, Remedial Investigation, and Remedial Action will be located and shown on maps to be reported in the Final Engineering Report.

5.5.6 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. Truck transport routes are as follows:

- ENTERING SITE - from the Long Island Expressway heading west; take the Van Dam Street Exit (No. 15), heading west on Borden Avenue to Greenpoint Avenue. Turn left on Greenpoint Avenue heading southwest to Provost Street. Turn right on Provost Street, heading North to Huron Street. Turn Left on Huron Street heading west to the Site entrance on the right (1 block).

- EXITING SITE – Turn right onto Green Street heading east one block to Provost Street. Turn right onto Provost Street heading south to Greenpoint Avenue. Turn left on Greenpoint Avenue heading northeast to the Long Island Expressway Service Road. Turn Right heading east on the service Road and merge left onto the Long Island Expressway.

These routes are shown in **Figure 10**.

These are the most appropriate routes to and from the Site and take 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 stopping 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. Material transported by trucks exiting the Site will be secured with tight-fitting covers. Wet loads are not anticipated since the entire site will be dewatered prior to excavating soils. However, if wet soils are excavated they will be stockpiled within the excavation to dry or blended with dry soils. No loads of material capable of generating free liquid will be allowed to leave the Site. All trucks will be inspected, dry-brushed and / or washed, as needed, before leaving the site.

5.5.7 Materials Disposal Off-Site

Multiple disposal facility designations may be employed for the materials removed from the Site. Once final arrangements have been made, the disposal location(s) will be reported to the NYSDEC Project Manager. It is anticipated that the soil will be disposed of at up to 3 different facilities, based on the following classification:

- Hazardous Lead TCLP> 5 mg/L
- Non Hazardous - Contaminated (historic fill) High Lead > 1,000 mg/kg
- Non Hazardous - Contaminated (historic fill) Low Lead < 1,000 mg/kg

The total quantity of material expected to be disposed off-Site is 13,520 cubic yards, including 6,388 cubic yards of lead hazardous soil, 3,147 cubic yards of non-hazardous \high lead soil and 3,985 cubic yards of non-hazardous low lead soil.

Hazardous Soil Disposal and Transport

Soil classified as hazardous will be shipped under a hazardous waste manifest system. All hazardous waste transported and disposed of must have a USEPA ID Number and waste code and must be distributed in accordance with the regulatory requirements.

The multi-part manifest will be filled out for each load of soil shipped off of the Site. At a minimum, the following information will be recorded on each manifest:

1) Generator's Name, Address, and Phone Number
2) Destination Facility Name, Address and Phone Number
3) EPA ID Number
4) Waste classification code
5) Transporter Name, Address, Phone Number, License Plate Number, Driver Name, and SW Haulers Permit #
6) Signatures – Generator or an authorized agent for the generator shall print, sign, and date each non-hazardous material manifest after each truck is loaded. The transporter shall then sign and date noting time material was picked up at the site. Both the transporter and a representative of the disposal facility will sign the non-hazardous material manifest when the material has been delivered to disposal facility.

Non-Hazardous Soil Disposal and Transport

Non-hazardous historic fill material and petroleum contaminated soil classified as non-hazardous, will be handled, at a minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Historical fill material and contaminated soils from the Site are prohibited from being disposed at Part 360-16 Registration Facilities (also known as Soil Recycling Facilities).

Soils that are contaminated but non-hazardous and are being removed from the Site are considered by the Division of Materials Management (DMM) in NYSDEC to be Construction and Demolition (C/D) materials with contamination not typical of virgin soils. These soils may be sent to a permitted Part 360 landfill. They may not be sent to a permitted C/D processing facility without permit modifications only upon prior notification of NYSDEC Region 2 DSHM.

This material is prohibited from being sent or redirected to a Part 360-16 Registration Facility. In this case, as dictated by DMM, special procedures will include, at a minimum, a letter to the C/D facility that provides a detailed explanation that the material is derived from a DER remediation Site, that the soil material is contaminated and that it must not be redirected to on-Site or off-Site Soil Recycling Facilities. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported.

Soil classified as non-hazardous fill will be transported under a non-hazardous waste manifest obtained from the selected disposal facility. The multi-part manifest will be filled out for each load of soil shipped off of the Site. At a minimum, the following information will be recorded on each manifest:

1) Generator's Name, Address, and Phone Number
2) Destination Facility Name, Address and Phone Number
3) Transporter Name, Address, Phone Number, License Plate Number, Driver Name, and SW Haulers Permit #
4 Signatures – Generator or an authorized agent for the generator shall print, sign, and date each non-hazardous material manifest after each truck is loaded. The transporter shall then sign and date noting time material was picked up at the site. Both the transporter and a representative of the disposal facility will sign the non-hazardous material manifest when the material has been delivered to disposal facility.

A copy of the manifest will be retained by AMC on-Site personnel for each shipment. Final signed manifests will be forwarded by the disposal facility to the generator. Copies of the final manifests will be presented in the FER.

Clean Soil Disposal

Clean native soil removed from the Site will be handled as unregulated or beneficial use disposal. This soil will undergo a testing program to confirm that it meets Unrestricted Use SCOs or Residential / Groundwater Protection SCOs prior to unregulated disposal or meets

Unrestricted Use SCOs prior to reuse on-Site. Confirmation testing of clean soils will be in accordance with DER-10 Section 5.4(e)(10) as follows:

Contaminant	**VOCs**	**SVOCs, Inorganics & PCBs/Pesticides**	
Soil Quantity (cubic yards)	**Discrete Samples**	**Composite**	**Discrete Samples/Composite**
0-50	1	1	Each composite sample for analysis is created from 3-5 discrete samples from representative locations in the fill.
50-100	2	1	
100-200	3	1	
200-300	4	1	
300-400	4	2	
400-500	5	2	
500-800	6	2	
800-1000	7	2	
1000	Add an additional 2 VOC and 1 composite for each additional 1000 Cubic yards or consult with DER		

Uncontaminated native soil confirmed by the above testing program and removed from the site, will be disposed of as C&D material (if approved) or sent to a beneficial re-use facility. The final destination of soils whether classified as contaminated or uncontaminated must be approved by the NYSDEC.

C&D and Scrap Metal Disposal

Concrete demolition material generated on the Site from building slabs, parking areas and other structures will be segregated, sized and shipped to a concrete recycling facility. Concrete crushing or processing on-Site is prohibited. Asphalt removed from the parking areas will be sent to a separate recycling facility.

Additionally, it is common to encounter scrap metals and large boulders (greater than one foot in diameter) during excavation which may not be accepted by either the licensed disposal facility or the C&D facility. These materials will be segregated and subsequently recycled at local facilities. Uncontaminated metal objects will be taken to a local scrap metal facility.

Bricks and other C&D material are also not accepted by most soil disposal facilities if present at greater then 5% by volume. This material, if encountered, will be sent to a C&D landfill or other

C&D processing facility if approved by the DEC. C&D material of this type is most often encountered on sites in which former basement structures have been filled in with material from demolishing a former building. There was no evidence of former basement areas identified during previous investigations performed at the Site.

Scale Tickets

All trucks to be utilized for transport of hazardous or non-hazardous contaminated soil shall be weighed before and after unloading at the disposal facility. Disposal facilities must provide truck scales capable of generating load tickets measured in tons. The tonnage transported and disposed will be determined by the disposal facility and reported on a certified scale ticket which will be attached to each returned manifest. Weights will be reported on the certified scale ticket as Tare and Gross weights.

C&D Transport Tickets / Bills of Lading

Bill of Lading system or equivalent will be used for the disposal of C&D and related materials. Documentation for materials disposed of at recycling facilities (such as metal, concrete, asphalt) and as non-regulated C&D will include transport tickets for each load stating the origin of the material, the destination of the material and the quantity transported. This information will be reported in the Final Engineering Report.

Disposal Facility Documentation

The following documentation will be obtained and reported by the Remedial Engineer for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the Site conforms with all applicable laws: (1) a letter from the Remedial Engineer or BCP Applicant to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation Site in New York State. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported (including Site Characterization data); and (2) a letter from all

receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material. These documents will be included in the FER.

The Final Engineering Report will include an accounting of the destination of all material removed from the Site during this Remedial Action, including excavated soil, contaminated soil, historic fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. This information will also be presented in a tabular form in the FER.

5.5.8 Materials Reuse On-Site

Re-use of on-Site clean native soil will only be allowed if the material is found to meet Unrestricted Use SCOs (for Track 1) or Restricted Residential Use SCOs (for Track 2) through the verification testing program detailed above. The Remedial Engineer will ensure that procedures defined for materials reuse in this RAWP are followed and that unacceptable material will not remain on-Site.

Acceptable demolition material proposed for reuse on-Site, if any, will be sampled for asbestos. Concrete crushing or processing on-Site is prohibited. Contaminated on-Site material, including historic fill material and contaminated soil, removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

5.5.9 Fluids Management

As the depth to groundwater at the site is approximately 3-4 feet above the planned excavation depth, dewatering operations will be employed during construction. Dewatering fluids will be handled, transported and disposed of in accordance with applicable local, State, and Federal regulations. Liquids discharged into the New York City sewer system will be addressed through approval by the NYCDEP (see **Attachment G** for limitations and sampling requirements). The pumping and treatment system design will be detailed in the NYCDEP discharge permit submittal. This submittal as well as the approved permit will be provided to the DEC prior to initiating dewatering operations.

Based on conditions observed during dewatering operations on projects in the immediate area of the Site, it is expected that flow rates will not approach that required for a Long Island well permit. However, a permit package will be submitted to the NYSDEC Division of Water and the NYSDEC Project Manager to obtain a LI well permit equivalency under the BCP, as a contingency should conditions vary considerably from expected.

Dewatered fluids will not be recharged back to the land surface or subsurface of the Site. Dewatering fluids will be managed off-Site. Discharge of water generated during remedial construction to surface waters (i.e. a local pond, stream or river) is prohibited without a SPDES permit.

5.5.10 Backfill from Off-Site Sources

Off-site fill material may be needed to stabilize the entrance - exit areas of the Site, for temporary driveways for loading trucks and as an underlayment to structural components of the new buildings including slabs and footings. Recycled Concrete Aggregate (RCA) derived from recognizable and uncontaminated concrete and supplied by facilities permitted by, and in full compliance with Part 360-16 and DSNY regulations, is an acceptable form of backfill material. The Remedial Engineer is responsible for ensuring that the facility is compliant with the registration and permitting requirements of 6 NYCRR Part 360 and DSNY regulations at the time the RCA is acquired. RCA imported from compliant facilities does not require additional testing unless required by NYS DEC and DSNY under its terms of operations for the facility. Documentation of part 360-16 and DSNY compliance must be provided to the Remedial Engineer before the RCA is transported to the Site.

Fill material may also consist of virgin mined sand, gravel or stone products. Materials from a virgin mined source may be imported to the Site with minimal testing provided that that the material meets the specifications of the geotechnical engineer, Remedial Engineer, and Redevelopment Construction Documents and that the source of the material is approved by the Remediation Engineer and the NYSDEC Project Manager.

The source approval process will require a review of the following information:

- The origin of the material;
- The address of the facility which mines/processes the material;
- A letter from the facility stating that the material to be delivered to the site is a virgin mined material and that it has not been co-mingled with other materials during processing or stockpiling.

All materials proposed for import onto the Site will be approved by the Remedial Engineer and will be in compliance with provisions in this RAWP prior to receipt at the Site. Material from industrial sites, spill sites or other potentially contaminated sites will not be imported to the Site.

The Final Engineering Report will include the following certification by the Remedial Engineer: "I certify that all import of soils from off-Site, including source evaluation, approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan".

Under no circumstances will fill materials be imported to the site without prior approval from the NYSDEC Project Manager. If sufficient documentation is not obtained, fill materials will be tested at a frequency consistent with that as specified in Table 4 of NYSDEC CP-51 Soil Cleanup Guidance Policy. 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.

5.5.11 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 RAWP 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 remedial construction area.

5.5.12 Contingency Plan

If underground tanks or other previously unidentified contaminant sources are found during on-Site remedial excavation or development related construction, sampling will be performed on product, sediment and surrounding soils, etc. Chemical analytical work will be for VOCs / SVOCs (CP51 List) for suspect petroleum contamination. Alternate analysis may be required for other types of contaminants. Appropriate testing will be determined by the Remedial Engineer in consultation with the DEC.

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. These findings will be also included in daily and periodic electronic media reports.

5.5.13 Community Air Monitoring Plan

The Community Air Monitoring Plan (CAMP) provides measures for protection for on-site workers and the downwind community (i.e., off-site receptors including residences, businesses, and on-site workers not directly involved in the remedial work) from potential airborne contaminant releases resulting from remedial activities at construction sites.

The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that the remedial work did not spread contamination off-site through the air. The primary concerns for this site are odors associated with groundwater purging and sampling.

Exceedances observed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers and included in the Daily Report. The complete CAMP developed for this site is included in **Attachment D**.

5.5.14 Odor, Dust and Nuisance Control Plan

The Final Engineering Report will include the following certification by the Remedial Engineer: "I certify that all invasive work during the remediation and all invasive development work were conducted in accordance with dust and odor suppression methodology defined in the Remedial Action Work Plan."

5.5.14.1 Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors off-Site and on-Site. If nuisance odors are identified, 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 all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Applicant's Remediation Engineer, who is responsible for certifying the Final Engineering Report.

All necessary means will be employed to prevent on and off-Site nuisances. At a minimum, procedures will include: (a) use of closed settling tanks and carbon treatment of exhaust air from the pumping / dewatering system (b) limiting the area of open excavations; (c) shrouding open excavations with tarps and other covers; and (d) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (e) direct load-out of soils to trucks for off-Site disposal; (f) use of chemical odorants in spray or misting systems, (g) use of perimeter misting systems; and, (h) use of staff to monitor odors in surrounding neighborhoods.

Where odor nuisances have developed during remedial work and cannot be corrected, or where the release of nuisance odors cannot otherwise be avoided due to on-Site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering excavation and

handling areas under tented containment structures equipped with appropriate air venting/filtering systems.

5.5.14.2 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 though spraying water directly onto off-road areas including excavations and stockpiles.
- 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 application.

5.5.14.3 Nuisance Control Plan

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. A plan will be developed and utilized by the contractor for all remedial work and conforms, to NYCDEP noise control standards.

6.0 RESIDUAL CONTAMINATION TO REMAIN ON-SITE

If a Track 1 cleanup is achieved, all on-Site soil remaining after completion of remediation will meet Track 1 Unrestricted Use SCOs and an Institutional Control (IC) will not be required to protect human health and the environment.

However, if a Track 1 cleanup is not achieved, the Track 2 alternative will be implemented as a contingency and an IC will be required. The Track 2 alternative will allow restricted residential use of the property. Long-term management of the IC will be executed under an environmental easement recorded with the NYC Department of Finance, Office of the City Register.

If Track 1 is not achieved, long-term management of ICs and of residual contamination will be executed under a site-specific Site Management Plan (SMP) that will be developed and submitted to DEC, if needed. The FER will report residual contamination on the Site in tabular and map form.

7.0 ENGINEERING CONTROLS

The intent of this project is to achieve Track 1 Cleanup criteria, however, if a Track 1 Cleanup is not achieved, an Engineering Control in the form of an engineered cap will be required for this remedy.

If Track 1 is not achieved, the Site will be restricted to restricted, commercial and industrial uses and a site cover may be required to allow for the intended use of the Site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or two feet of soil meeting the SCOs as set forth in 6 NYCRR Part 375-6.7(d) and Table 375-6.8(b). The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

8.0 INSTITUTIONAL CONTROLS

Since the intent of this project is to achieve Track 1 cleanup criteria, institutional controls are not expected to be part of the final remedy for the Site.

If Track 1 cleanup is not achieved, Institutional Controls (ICs) will be incorporated into the remedy to render the overall Site remedy protective of public health and the environmental. Two elements have been designed to ensure continual and proper management of residual contamination in perpetuity: an Environmental Easement and a Site Management Plan (SMP).

If required, a Site-Specific Environmental Easement will be recorded with the City of New York to provide an enforceable means of ensuring the continual and proper management of residual contamination and protection of public health and the environment in perpetuity or until released in writing by NYSDEC. It requires that the grantor of the Environmental Easement and the grantor's successors and assigns adhere to all Engineering and Institutional Controls (ECs/ICs) placed on the Site by this NYSDEC-approved remedy. ICs provide restrictions on Site usage and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs.

The SMP describes appropriate methods and procedures to ensure compliance with all ECs and ICs that are required by the Environmental Easement. Once the SMP has been approved by the NYSDEC, compliance with the SMP is required by the grantor of the Environmental Easement and grantor's successors and assigns.

8.1 ENVIRONMENTAL EASEMENT

An Environmental Easement, as defined in Article 71 Title 36 of the Environmental Conservation Law, is required when residual contamination is left on-Site after the Remedial Action is complete. If the Site will have residual contamination after completion of all Remedial Actions than an Environmental Easement is required. If an Environmental Easement is needed following completion of the remedy an Environmental Easement approved by NYSDEC will be filed and recorded with the City of New York. The Environmental Easement (if needed) will be submitted as part of the Final Remediation Report.

The Environmental Easement renders the Site a Controlled Property. The Environmental Easement must be recorded with the City of New York before the Certificate of Completion can be issued by NYSDEC. These Institutional Controls are requirements or restrictions placed on the Site that are listed in, and required by, the Environmental Easement. Institutional Controls can, generally, be subdivided between controls that support Engineering Controls, and those that place general restrictions on Site usage or other requirements. Institutional Controls in both of these groups are closely integrated with the Site Management Plan (SMP), which provides all of the methods and procedures to be followed to comply with this remedy.

The Institutional Controls which will be needed to support Engineering Controls (subject to modification / additions by the NYSDEC) are:

- Use of groundwater underlying the Controlled Property is prohibited without treatment rendering it safe for intended purpose;
- Compliance with the Environmental Easement by the Grantee and the Grantee's successor's is required;
- Grantor agrees to 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 Controls;
- 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. This annual statement must be certified by an expert that the NYSDEC finds acceptable;

8.2 SITE MANAGEMENT PLAN

Site Management is the last phase of remediation and begins with the approval of the Final Engineering Report and issuance of the Certificate of Completion (COC) for the Remedial Action. The Site Management Plan is submitted as a separate and independent document from the FER. Site Management continues in perpetuity or until released in writing by NYSDEC. The property owner is responsible to ensure that all Site Management responsibilities defined in the Environmental Easement and the Site Management Plan are performed.

The SMP is intended to provide a detailed description of the procedures required to manage residual contamination left in place at the Site following completion of the Remedial Action in accordance with the BCA with the NYSDEC. This includes: (1) development, implementation, and management of all Engineering and Institutional Controls; (2) development and implementation of monitoring systems and a Monitoring Plan; (3) development of a plan to operate and maintain any treatment, collection, containment, or recovery systems (including, where appropriate, preparation of an Operation and Maintenance Manual); (4) submittal of Site Management Reports, performance of inspections and certification of results, and demonstration of proper communication of Site information to NYSDEC; and (5) defining criteria for termination of treatment system operation.

To address these needs, this SMP will include four 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; and (4) a Site Management Reporting Plan for submittal of data, information, recommendations, and certifications to NYSDEC. The SMP will be prepared in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation (May 2010), and the SMP template provided by NYSDEC.

Site management activities, reporting, and EC/IC certification will be scheduled on a certification period basis as specified in DER 10 (Periodic Review Report). The certification period will be annually or as determined by NYSDEC. The Site Management Plan will be based

on a calendar year and will be due for submission to NYSDEC by March 1 of the year following the reporting period.

No exclusions for handling of residual contaminated soils will be provided in the Site Management Plan (SMP). All handling of residual contaminated material will be subject to provisions contained in the SMP.

9.0 FINAL ENGINEERING REPORT

A Final Engineering Report (FER) prepared using the NYSDEC template will be submitted to NYSDEC following implementation of the Remedial Action defined in this RAWP. The FER provides the documentation that the remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The FER will provide a comprehensive account of the locations and characteristics of all material removed from the Site including the surveyed map(s) of all sources. The Final Engineering Report will include as-built drawings for all constructed elements, certifications, manifests, bills of lading as well as the complete Site Management Plan (formerly the Operation and Maintenance Plan). The FER will provide a description of the changes in the Remedial Action from the elements provided in the RAWP and associated design documents. The FER will provide a tabular summary of all performance evaluation sampling results and all material characterization results and other sampling and chemical analysis performed as part of the Remedial Action. The FER will provide test results demonstrating that all mitigation and remedial systems are functioning properly. The FER will be prepared in conformance with DER-10.

Where determined to be necessary by NYSDEC, a Financial Assurance Plan will be required to ensure the sufficiency of revenue to perform long-term operations, maintenance and monitoring tasks defined in the Site Management Plan and Environmental Easement. This determination will be made by NYSDEC in the context of the Final Engineering Report review.

The Final Engineering Report will include written and photographic documentation of all remedial work performed under this remedy. The FER will include an itemized tabular description of actual costs incurred during all aspects of the Remedial Action.

The FER will provide a thorough summary of all residual contamination left on the Site after the remedy is complete. Residual contamination includes all contamination that exceeds the Track 1 Unrestricted Use SCO in 6NYCRR Part 375-6. A table that shows exceedances from Track 1 Unrestricted SCOs for all soil/fill remaining at the Site after the Remedial Action and a map that

shows the location and summarizes exceedances from Track 1 Unrestricted SCOs for all soil/fill remaining at the Site after the Remedial Action will be included in the FER.

The FER will provide a thorough summary of all residual contamination that exceeds the SCOs defined for the Site in the RAWP and must provide an explanation for why the material was not removed as part of the Remedial Action. A table that shows residual contamination in excess of Site SCOs and a map that shows residual contamination in excess of Site SCOs will be included in the FER.

The Final Engineering Report will include an accounting of the destination of all material removed from the Site, including excavated contaminated soil, historic fill, solid waste, hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. It will provide an accounting of the origin and chemical quality of all material imported onto the Site.

Before approval of a FER and issuance of a Certificate of Completion, all project reports must be submitted in digital form on electronic media (PDF).

9.1 CERTIFICATIONS

The following certification will appear in front of the Executive Summary of the Final Engineering Report. The certification will be signed by the Remedial Engineer who is a Professional Engineer registered in New York State. This certification will be appropriately signed and stamped. The certification will include the following statements:

I _____certify that I am currently a NYS registered professional engineer, I had primary direct responsibility for the implementation of the subject construction program, and I certify that the Remedial Work Plan (or Remedial Design or Plans and Specifications) was implemented and that all construction activities were completed in substantial conformance with the DER-approved Remedial Work Plan (or Remedial Design or Plans and Specifications).

If the Remedial Action Work Plan (or Remedial Design or Plans and Specifications) identifies time frames to be achieved by the remedial program, the certification must include:

The data submitted to DER demonstrates that the remediation requirements set forth in the Remedial Work Plan (or Remedial Design or Plans and Specifications) and all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established in the work plan (or Remedial Design or Plans and Specifications).

If the remedial program requires ICs or ECs, the certification will include:

All use restrictions, institutional controls, engineering controls and/or any operation and maintenance requirements applicable to the site are contained in an environmental easement created and recorded pursuant to ECL 71-3605 and that any affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.

If the remedial program requires applicable SMP, the certification will include:

A Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of any engineering controls employed at the site including the proper maintenance of any remaining monitoring wells, and that such plan has been approved by DER.

If the remedial program requires financial assurance, the certification will include:

Any financial assurance mechanisms required by DEC pursuant to Environmental Conservation Law have been executed.

10.0 SCHEDULE

The remedial action will begin with mobilization of equipment and material to the Site which will begin approximately 2 weeks following RAWP approval and within 10 days of the distribution of the Construction Fact Sheet. Mobilization will be followed by shoring, dewatering and excavation and disposal of impacted soil / historic fill, followed by confirmation sampling. The work is expected to take approximately 6 months as part of the construction excavation and foundation installation. The schedule of tasks completed under this RAWP is as follows:

Conduct pre-construction meeting with NYSDEC	Within 1 week of RAWP approval
Mobilize equipment to the site and construct truck pad and other designated areas	Within 2 weeks following the pre-construction meeting and issuance of Pre-Construction Fact Sheet
Mobilize shoring Contractor and equipment to the Site	Within 2 weeks of RAWP approval, subject to contractor availability
Begin excavation and disposal of historic fill material and impacted soil.	Within 2 weeks of completing shoring
Mobilize dewatering contractor and begin dewatering operations	As excavation approaches the water table
Complete excavation work	Within 6 months of starting
Perform endpoint verification of entire site	Performed in sequence as final depth of each excavated area is complete.
Submit SMP (as a contingency) if Track 1 Cleanup is not achieved	By August 15th of the year in which the COC is sought or as required by DEC.
Submit FER	By September 15th of the year in which the COC is sought or as required by DEC.

TABLES

TABLE 1
SOIL CLEANUP OBJECTIVES
SOIL IMPORT CRITERIA

Contaminant	CAS Number	Unrestricted Use
Metals		
Arsenic	7440-38-2	13 [c]
Barium	7440-39-3	350 [c]
Beryllium	7440-41-7	7.2
Cadmium	7440-43-9	2.5 [c]
Chromium, hexavalent [e]	18540-29-9	1 [b]
Chromium, trivalent [e]	16065-83-1	30 [c]
Copper	7440-50-8	50
Total Cyanide [e, f]		27
Lead	7439-92-1	63 [c]
Manganese	7439-96-5	1600 [c]
Total Mercury		0.18 [c]
Nickel	7440-02-0	30
Selenium	7782-49-2	3.9[c]
Silver	7440-22-4	2
Zinc	7440-66-6	109 [c]
PCBs/Pesticides		
2,4,5-TP Acid (Silvex) [f]	93-72-1	3.8
4,4'-DDE	72-55-9	0.0033 [b]
4,4'-DDT	50-29-3	0.0033 [b]
4,4'-DDD	72-54-8	0.0033 [b]
Aldrin	309-00-2	0.005 [c]
alpha-BHC	319-84-6	0.02
beta-BHC	319-85-7	0.036
Chlordane (alpha)	5103-71-9	0.094

TABLE 1
SOIL CLEANUP OBJECTIVES

Contaminant	CAS Number	Unrestricted Use
delta-BHC [g]	319-86-8	0.04
Dibenzofuran [f]	132-64-9	7
Dieldrin	60-57-1	0.005 [c]
Endosulfan I [d, f]	959-98-8	2.4
Endosulfan II [d, f]	33213-65-9	2.4
Endosulfan sulfate [d, f]	1031-07-8	2.4
Endrin	72-20-8	0.014
Heptachlor	76-44-8	0.042
Lindane	58-89-9	0.1
Polychlorinated biphenyls	1336-36-3	0.1
Semivolatile organic compounds		
Acenaphthene	83-32-9	20
Acenapthylene [f]	208-96-8	100 [a]
Anthracene [f]	120-12-7	100 [a]
Benz(a)anthracene [f]	56-55-3	1 [c]
Benzo(a)pyrene	50-32-8	1 [c]
Benzo(b)fluoranthene [f]	205-99-2	1 [c]
Benzo(g,h,i)perylene [f]	191-24-2	100
Benzo(k)fluoranthene [f]	207-08-9	0.8 [c]
Chrysene [f]	218-01-9	1 [c]
Dibenz(a,h)anthracene [f]	53-70-3	0.33 [b]
Fluoranthene [f]	206-44-0	100 [a]
Fluorene	86-73-7	30
Indeno(1,2,3-cd)pyrene [f]	193-39-5	0.5 [c]
m-Cresol [f]	108-39-4	0.33 [b]
Naphthalene [f]	91-20-3	12
o-Cresol [f]	95-48-7	0.33 [b]

TABLE 1
SOIL CLEANUP OBJECTIVES

Contaminant	CAS Number	Unrestricted Use
p-Cresol [f]	106-44-5	0.33 [b]
Pentachlorophenol	87-86-5	0.8 [b]
Phenanthrene [f]	85-01-8	100
Phenol	108-95-2	0.33 [b]
Pyrene [f]	129-00-0	100
Volatile organic compounds		
1,1,1-Trichloroethane [f]	71-55-6	0.68
1,1-Dichloroethane [f]	75-34-3	0.27
1,1-Dichloroethene [f]	75-35-4	0.33
1,2-Dichlorobenzene [f]	95-50-1	1.1
1,2-Dichloroethane	107-06-2	0.02 [c]
cis -1,2-Dichloroethene [f]	156-59-2	0.25
trans-1,2-Dichloroethene [f]	156-60-5	0.19
1,3-Dichlorobenzene [f]	541-73-1	2.4
1,4-Dichlorobenzene	106-46-7	1.8
1,4-Dioxane	123-91-1	0.1 [b]
Acetone	67-64-1	0.05
Benzene	71-43-2	0.06
n-Butylbenzene [f]	104-51-8	12
Carbon tetrachloride [f]	56-23-5	0.76
Chlorobenzene	108-90-7	1.1
Chloroform	67-66-3	0.37
Ethylbenzene [f]	100-41-4	1
Hexachlorobenzene [f]	118-74-1	0.33[b]
Methyl ethyl ketone	78-93-3	0.12
Methyl tert-butyl ether [f]	1634-04-4	0.93
Methylene chloride	75-09-2	0.05

TABLE 1
SOIL CLEANUP OBJECTIVES

Contaminant	CAS Number	Unrestricted Use
n - Propylbenzene [f]	103-65-1	3.9
sec-Butylbenzene [f]	135-98-8	11
tert-Butylbenzene [f]	98-06-6	5.9
Tetrachloroethene	127-18-4	1.3
Toluene	108-88-3	0.7
Trichloroethene	79-01-6	0.47
1,2,4-Trimethylbenzene [f]	95-63-6	3.6
1,3,5-Trimethylbenzene[f]	108-67-8	8.4
Vinyl chloride[f]	75-01-4	0.02
Xylene (mixed)	1330-20-7	0.26

All soil cleanup objectives (SCOs) are in parts per million (ppm).

Footnotes

[a] The SCOs for unrestricted use were capped at a maximum value of 100 ppm. See Technical Support Document (TSD), section 9.3.

[b] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.

[c] For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site.

[d] SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

[e] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

[f] Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with "NS". Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD.

TABLE 2
SUMMARY OF
SAMPLING PROGRAM RATIONALE AND ANALYSIS

Matrix	Location	Approximate Number of Samples	Frequency	Rationale for Sampling	Laboratory Analysis	Duplicates	Matrix Spikes	Spike Duplicates	Trip Blanks
Soil	Site Wide Excavation	27	1 per 900 square feet of excavation base	Endpoint Verification of footing excavations	VOCs EPA Method 8260B, pesticides, SVOCs EPA Method 8270, Pesticides / PCBs by EPA 8081/8082, and TAL Metals EPA 6010	1 per day	1 per 20 samples	1 per 20 samples	1 per trip

TABLE 3
262 Green St
Brooklyn, New York
Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	B1 (13-15') µg/Kg		B3 (7-10') µg/Kg		B3 (10-13') µg/Kg		B4 (13-15') µg/Kg		B5 (13-15') µg/Kg		B6 (15-17') µg/Kg		B7 (13-15') µg/Kg		B8 (13-15') µg/Kg	
			Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
1,1,1-Trichloroethane	680	500,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
1,1,2,2-Tetrachloroethane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
1,1,2-Trichloroethane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	**120**	380
1,1-Dichloroethane	270	240,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
1,1-Dichloroethene	330	500,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
1,1-Dichloropropene			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
1,2,3-Trichlorobenzene			< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
1,2,3-Trichloropropane			< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
1,2,4-Trichlorobenzene			< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
1,2,4-Trimethylbenzene	3,600	190,000	< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
1,2-Dibromo-3-chloropropane			< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
1,2-Dibromomethane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
1,2-Dichlorobenzene	1,100	500,000	< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
1,2-Dichloroethane	20	30,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
1,2-Dichloropropane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
1,3,5-Trimethylbenzene	8,400	190,000	< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
1,3-Dichlorobenzene	2,400	280,000	< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
1,3-Dichloropropane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
1,4-Dichlorobenzene	1,800	130,000	< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
2,2-Dichloropropane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
2-Chlorotoluene			< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
2-Hexanone (Methyl Butyl Ketone)			< 2000	2,000	< 1800	1,800	< 1700	1,700	< 36	36	< 33	33	< 30	30	< 40	40	< 1900	1,900
2-Isopropyltoluene			**610**	400	**520**	360	**5,400**	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	**64**	380
4-Chlorotoluene			< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
4-Methyl-2-Pentanone			< 2000	2,000	< 1800	1,800	< 1700	1,700	< 36	36	< 33	33	< 30	30	< 40	40	< 1900	1,900
Acetone	50	500,000	< 4000	4,000	< 1800	1,800	< 1700	1,700	**18**	50	**49**	50	**41**	30	**35**	50	< 3800	3,800
Acrylonitrile			< 810	810	< 720	720	< 680	680	< 14	14	< 13	13	< 12	12	< 16	16	< 770	770
Benzene	60	44,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Bromobenzene			< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
Bromochloromethane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Bromodichloromethane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Bromoform			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Bromomethane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Carbon Disulfide			< 400	400	< 360	360	< 340	340	**1.4**	7.1	**2.1**	6.6	< 6.0	6	**1.7**	8.1	< 380	380
Carbon tetrachloride	760	22,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Chlorobenzene	1,100	500,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Chloroethane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Chloroform	370	350,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Chloromethane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
cis-1,2-Dichloroethene	250	500,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
cis-1,3-Dichloropropene			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Dibromochloromethane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Dibromomethane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Dichlorodifluoromethane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Ethylbenzene	1,000	390,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Hexachlorobutadiene			< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
Isopropylbenzene			< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
m&p-Xylenes	260		< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Methyl Ethyl Ketone (2-Butanone)	120	500,000	< 2400	2,400	< 1800	1,800	< 1700	1,700	< 43	43	< 39	39	< 30	30	**8.7**	48	< 2300	2,300
Methyl t-butyl ether (MTBE)	930	500,000	< 810	810	< 720	720	< 680	680	< 14	14	< 13	13	< 12	12	< 16	16	< 770	770
Methylene chloride	50	500,000	**100**	400	< 360	360	< 340	340	**2.6**	7.1	**3.4**	6.6	< 6.0	6	**3.2**	8.1	**100**	380
Naphthalene	12,000		< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
n-Butylbenzene	12,000	500,000	**290**	400	< 360	360	**3,500**	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
n-Propylbenzene	3,900	500,000	< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
o-Xylene	260		< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
p-Isopropyltoluene			< 400	400	< 360	360	< 340	340	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
sec-Butylbenzene	11,000	500,000	**1,000**	400	**760**	360	**11,000**	6,800	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
Styrene			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
tert-Butylbenzene	5,900	500,000	< 400	400	**780**	360	**8,600**	6,800	< 360	360	< 6.6	6.6	< 6.0	6	< 400	400	< 380	380
Tetrachloroethene	1,300	150,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Tetrahydrofuran (THF)			< 810	810	< 720	720	< 680	680	< 14	14	< 13	13	< 12	12	< 16	16	< 770	770
Toluene	700	500,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Total Xylenes			-	-	< 360	360	< 340	340	-	-	-	-	< 6.0	6	-	-	-	-
trans-1,2-Dichloroethene	190	500,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
trans-1,3-Dichloropropene			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
trans-1,4-dichloro-2-butene			< 810	810	< 720	720	< 680	680	< 710	710	< 13	13	< 12	12	< 810	810	< 770	770
Trichloroethene	470	200,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Trichlorofluoromethane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Trichlorotrifluoroethane			< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Vinyl Chloride	20	13,000	< 400	400	< 360	360	< 340	340	< 7.1	7.1	< 6.6	6.6	< 6.0	6	< 8.1	8.1	< 380	380
Total BTEX Concentration			0		0		0		0		0		0		0		0	
Total VOCs Concentration			2000.00		2060.00		28500.00		22.00		54.50		41.00		48.60		284.00	

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

TABLE 4
262 Green St
Brooklyn, New York
Soil Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	B1 (13-15') µg/Kg		B3 (7-10') µg/Kg		B4 (13-15') µg/Kg		B5 (13-15') µg/Kg		B6 (15-17') µg/Kg		B7 (13-15') µg/Kg		B8 (13-15') µg/Kg	
			Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,2,4,5-Tetrachlorobenzene			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
1,2,4-Trichlorobenzene			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
1,2-Dichlorobenzene			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
1,2-Diphenylhydrazine			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
1,3-Dichlorobenzene			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
1,4-Dichlorobenzene			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
2,4,5-Trichlorophenol			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
2,4,6-Trichlorophenol			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
2,4-Dichlorophenol			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
2,4-Dimethylphenol			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
2,4-Dinitrophenol			< 13000	13,000	-	-	< 4700	4,700	< 2200	2,200	-	-	< 2600	2,600	< 2500	2,500
2,4-Dinitrotoluene			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
2,6-Dinitrotoluene			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
2-Chloronaphthalene			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
2-Chlorophenol			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
2-Methylnaphthalene			< 1800	1,800	-	-	**320**	660	< 300	300	-	-	< 370	370	< 350	350
2-Methylphenol (o-cresol)	330	500,000	< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 330	330	< 330	330
2-Nitroaniline			< 13000	13,000	-	-	< 4700	4,700	< 2200	2,200	-	-	< 2600	2,600	< 2500	2,500
2-Nitrophenol			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
3&4-Methylphenol (m&p-cresol)	330		< 1800	1,800	-	-	**3,300**	660	< 300	300	-	-	**290**	370	**310**	350
3,3'-Dichlorobenzidine			< 5300	5,300	-	-	< 1900	1,900	< 870	870	-	-	< 1100	1,100	< 1000	1,000
3-Nitroaniline			< 13000	13,000	-	-	< 4700	4,700	< 2200	2,200	-	-	< 2600	2,600	< 2500	2,500
4,6-Dinitro-2-methylphenol			< 13000	13,000	-	-	< 4700	4,700	< 2200	2,200	-	-	< 2600	2,600	< 2500	2,500
4-Bromophenyl phenyl ether			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
4-Chloro-3-methylphenol			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
4-Chloroaniline			< 5300	5,300	-	-	< 1900	1,900	< 870	870	-	-	< 1100	1,100	< 1000	1,000
4-Chlorophenyl phenyl ether			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
4-Nitroaniline			< 13000	13,000	-	-	< 4700	4,700	< 2200	2,200	-	-	< 2600	2,600	< 2500	2,500
4-Nitrophenol			< 13000	13,000	-	-	< 4700	4,700	< 2200	2,200	-	-	< 2600	2,600	< 2500	2,500
Acenaphthene	20,000	500,000	< 1800	1,800	**630**	340	**680**	660	< 300	300	< 280	280	**240**	370	< 350	350
Acenaphthylene	100,000	500,000	< 1800	1,800	< 340	340	< 660	660	< 300	300	< 280	280	< 370	370	< 350	350
Acetophenone			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Aniline			< 13000	13,000	-	-	< 4700	4,700	< 2200	2,200	-	-	< 2600	2,600	< 2500	2,500
Anthracene	100,000	500,000	< 1800	1,800	**1,100**	340	**1,600**	660	< 300	300	< 280	280	**410**	370	< 350	350
Benz(a)anthracene	1,000	5,600	**3,100**	1,800	**2,600**	340	**2,700**	660	**520**	300	< 280	280	**750**	370	< 350	350
Benzidine			< 5300	5,300	-	-	< 1900	1,900	< 870	870	-	-	< 1100	1,100	< 1000	1,000
Benzo(a)pyrene	1,000	1,000	**2,300**	1,800	**2,200**	340	**2,300**	660	**470**	300	< 280	280	**710**	370	< 350	350
Benzo(b)fluoranthene	1,000	5,600	**2,800**	1,800	**3,400**	340	**2,900**	660	**560**	300	< 280	280	**820**	370	**190**	350
Benzo(ghi)perylene	100,000	500,000	**1,400**	1,800	**760**	340	**1,200**	660	**270**	300	< 280	280	**470**	370	< 350	350
Benzo(k)fluoranthene	800	56,000	**1,200**	1,800	**1,000**	340	**910**	660	**210**	300	< 280	280	**320**	370	< 350	350
Benzoic acid			< 13000	13,000	-	-	< 4700	4,700	< 2200	2,200	-	-	< 2600	2,600	< 2500	2,500
Benzyl butyl phthalate			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Bis(2-chloroethoxy)methane			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Bis(2-chloroethyl)ether			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Bis(2-chloroisopropyl)ether			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Bis(2-ethylhexyl)phthalate			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Carbazole			< 13000	13,000	-	-	**900**	4,700	< 2200	2,200	-	-	< 2600	2,600	< 2500	2,500
Chrysene	1,000	56,000	**2,800**	1,800	**2,600**	340	**2,500**	660	**460**	300	< 280	280	**760**	370	**180**	350
Dibenz(a,h)anthracene	330	560	< 1800	1,800	< 340	340	< 660	660	< 300	300	< 280	280	< 330	330	< 330	330
Dibenzofuran	7,000		< 1800	1,800	-	-	**570**	660	< 300	300	-	-	< 370	370	< 350	350
Diethyl phthalate			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Dimethylphthalate			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Di-n-butylphthalate			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Di-n-octylphthalate			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Fluoranthene	100,000	500,000	**5,900**	1,800	**6,100**	340	**6,700**	660	**790**	300	< 280	280	**2,000**	370	**370**	350
Fluorene	30,000	500,000	< 1800	1,800	**590**	340	**770**	660	< 300	300	< 280	280	**200**	370	< 350	350
Hexachlorobenzene			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Hexachlorobutadiene			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Hexachlorocyclopentadiene			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Hexachloroethane			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Indeno(1,2,3-cd)pyrene	500	5,600	**1,200**	1,800	**680**	340	**990**	660	**230**	300	< 280	280	**370**	370	< 350	350
Isophorone			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Naphthalene	12,000	500,000	< 1800	1,800	**520**	340	**850**	660	**160**	300	< 280	280	< 370	370	**490**	350
Nitrobenzene			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
N-Nitrosodimethylamine			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
N-Nitrosodi-n-propylamine			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
N-Nitrosodiphenylamine			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Pentachloronitrobenzene			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Pentachlorophenol	800	6,700	< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350
Phenanthrene	100,000	500,000	**1,600**	1,800	**4,900**	340	**6,400**	660	**320**	300	< 280	280	**2,000**	370	**360**	350
Phenol	330	500,000	< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 330	330	< 330	330
Pyrene	100,000	500,000	**5,200**	1,800	**5,700**	340	**5,900**	660	**740**	300	< 280	280	**1,900**	370	**360**	350
Pyridine			< 1800	1,800	-	-	< 660	660	< 300	300	-	-	< 370	370	< 350	350

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL- Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

TABLE 5
262 Green St
Brooklyn, New York
Soil Analytical Results
Pesticides PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	B1 (0-2') µg/Kg		B1 (13-15') µg/Kg		B3 (0-2') µg/Kg		B4 (13-15') µg/Kg		B5 (0-2') µg/Kg		B5 (13-15') µg/Kg		B6 (3-5') µg/Kg		B7 (0-2') µg/Kg		B7 (13-15') µg/Kg		B8 (0-2') µg/Kg		B8 (13-15') µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	92,000	< 15	15	< 3.3	3.3	-	-	< 3.4	3.4	< 2.6	2.6	< 3.1	3.1	-	-	< 2.8	2.8	< 3.3	3.3	< 29	29	< 3.7	3.7
	4,4' -DDE	3.3	62,000	< 15	15	< 3.3	3.3	-	-	< 3.4	3.4	< 2.6	2.6	< 3.1	3.1	-	-	< 2.8	2.8	< 3.3	3.3	< 29	29	< 3.7	3.7
	4,4' -DDT	3.3	47,000	< 15	15	< 3.8	3.8	-	-	< 3.3	3.3	< 2.6	2.6	< 3.1	3.1	-	-	< 5.5	5.5	< 3.3	3.3	< 29	29	< 3.7	3.7
	a-BHC	20	3,400	< 10	10	< 2.6	2.6	-	-	< 2.3	2.3	< 1.8	1.8	< 2.2	2.2	-	-	< 1.9	1.9	< 2.6	2.6	< 20	20	< 2.5	2.5
	a-Chlordane	94	24,000	< 21	21	< 5.3	5.3	-	-	< 4.7	4.7	< 3.6	3.6	< 4.3	4.3	-	-	< 3.9	3.9	< 5.2	5.2	< 40	40	< 5.1	5.1
	Aldrin	5	680	< 10	10	< 2.6	2.6	-	-	< 2.3	2.3	< 1.8	1.8	< 2.2	2.2	-	-	< 2.5	2.5	< 2.6	2.6	< 20	20	< 2.5	2.5
	b-BHC	36	3,000	< 10	10	< 2.6	2.6	-	-	< 2.3	2.3	< 1.8	1.8	< 2.2	2.2	-	-	< 36	36	< 6.0	6	< 20	20	< 2.5	2.5
	d-BHC	40	500,000	< 10	10	< 9.0	9	-	-	< 20	20	< 35	35	< 4.5	4.5	-	-	< 5.0	5	< 25	25	< 25	25	< 12	12
	Dieldrin	5	1,400	< 10	10	< 2.6	2.6	-	-	< 2.3	2.3	< 1.8	1.8	< 2.2	2.2	-	-	< 1.9	1.9	< 2.6	2.6	< 20	20	< 2.5	2.5
	Endosulfan I	2,400	200,000	< 21	21	< 5.3	5.3	-	-	< 4.7	4.7	< 3.6	3.6	< 4.3	4.3	-	-	< 3.9	3.9	< 5.2	5.2	< 40	40	< 5.1	5.1
	Endosulfan II	2,400	200,000	< 21	21	< 5.3	5.3	-	-	< 4.7	4.7	< 3.6	3.6	< 4.3	4.3	-	-	< 3.9	3.9	< 5.2	5.2	< 40	40	< 5.1	5.1
	Endosulfan sulfate	2,400	200,000	< 21	21	< 5.3	5.3	-	-	< 4.7	4.7	< 3.6	3.6	< 4.3	4.3	-	-	< 3.9	3.9	< 5.2	5.2	< 40	40	< 5.1	5.1
	Endrin	14	89,000	< 10	10	< 2.6	2.6	-	-	< 2.3	2.3	< 14	14	< 2.2	2.2	-	-	< 6.0	6	< 2.6	2.6	< 30	30	< 2.5	2.5
	Endrin aldehyde			< 21	21	< 5.3	5.3	-	-	< 4.7	4.7	< 3.6	3.6	< 4.3	4.3	-	-	< 6.0	6	< 5.2	5.2	< 40	40	< 5.1	5.1
	Endrin ketone			< 10	10	< 2.6	2.6	-	-	< 8.5	8.5	< 1.8	1.8	< 2.5	2.5	-	-	< 1.9	1.9	< 4.5	4.5	< 20	20	< 2.5	2.5
	g-BHC		9,200	< 10	10	< 9.0	9	-	-	**20**	2.3	< 1.8	1.8	< 2.2	2.2	-	-	**81**	1.9	< 20	20	< 20	20	< 9.0	9
	g-Chlordane			< 21	21	< 5.3	5.3	-	-	< 8.0	8	< 3.6	3.6	< 4.3	4.3	-	-	< 3.9	3.9	< 5.2	5.2	< 40	40	< 5.1	5.1
	Heptachlor	42	15,000	< 10	10	< 2.6	2.6	-	-	< 6.0	6	< 2.5	2.5	< 2.2	2.2	-	-	< 7.0	7	< 4.0	4	**91**	20	< 2.5	2.5
	Heptachlor epoxide			< 10	10	< 2.6	2.6	-	-	< 2.3	2.3	< 1.8	1.8	< 2.2	2.2	-	-	< 3.0	3	< 2.6	2.6	< 20	20	< 2.5	2.5
	Methoxychlor			< 41	41	< 11	11	-	-	< 9.3	9.3	< 7.3	7.3	< 8.7	8.7	-	-	< 7.8	7.8	< 10	10	< 80	80	< 10	10
	Toxaphene			< 1000	1,000	< 260	260	-	-	< 230	230	< 180	180	< 220	220	-	-	< 190	190	< 260	260	< 2000	2,000	< 250	250
PCBs	PCB-1016	100	1,000	< 41	41	< 53	53	< 78	78	< 47	47	< 36	36	< 43	43	< 80	80	< 39	39	< 52	52	< 40	40	< 51	51
	PCB-1221	100	1,000	< 41	41	< 53	53	< 78	78	< 47	47	< 36	36	< 43	43	< 80	80	< 39	39	< 52	52	< 40	40	< 51	51
	PCB-1232	100	1,000	< 41	41	< 53	53	< 78	78	< 47	47	< 36	36	< 43	43	< 80	80	< 39	39	< 52	52	< 40	40	< 51	51
	PCB-1242	100	1,000	< 41	41	< 53	53	< 78	78	< 47	47	< 36	36	< 43	43	< 80	80	< 39	39	< 52	52	< 40	40	< 51	51
	PCB-1248	100	1,000	**730**	41	< 53	53	**800**	78	< 47	47	< 36	36	< 43	43	< 80	80	< 39	39	< 52	52	< 40	40	< 51	51
	PCB-1254	100	1,000	< 41	41	< 53	53	< 78	78	< 47	47	< 36	36	< 43	43	< 80	80	< 39	39	< 52	52	< 40	40	< 51	51
	PCB-1260	100	1,000	< 41	41	< 53	53	< 78	78	< 47	47	< 36	36	< 43	43	< 80	80	< 39	39	< 52	52	< 40	40	< 51	51
	PCB-1262	100		< 41	41	< 53	53	< 78	78	< 47	47	< 36	36	< 43	43	< 80	80	< 39	39	< 52	52	< 40	40	< 51	51
	PCB-1268	100		< 41	41	< 53	53	< 78	78	< 47	47	< 36	36	< 43	43	< 80	80	< 39	39	< 52	52	< 40	40	< 51	51

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL- Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

TABLE 6
262 Green St
Brooklyn, New York
Soil Analytical Results
TAL Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Commercial Soil Cleanup Objectives*	B1				B3		B4		B5				B6		B7				B8			
			(0-2') mg/Kg		(13-15') mg/Kg		(0-2') mg/Kg		(13-15') mg/Kg		(0-2') mg/Kg		(13-15') mg/Kg		(3-5') mg/Kg		(0-2') mg/Kg		(13-15') mg/Kg		(0-2') mg/Kg		(13-15') mg/Kg	
			Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum			7,530	44	7,380	55	-	-	5,570	45	2,330	36	11,800	41	-	-	4,680	38	7,650	52	5,000	40	5,230	46
Antimony			< 2.2	2.2	< 2.8	2.8	-	-	< 2.2	2.2	37.3	1.8	< 2.0	2	-	-	34.4	1.9	< 2.6	2.6	< 2.0	2	< 2.3	2.3
Arsenic	13	16	20.3	0.9	16.3	1.1	-	-	7.8	0.9	28.3	0.7	2.5	0.8	-	-	23.6	0.8	19.5	1	11.4	0.8	19.7	0.9
Barium	350	400	423	0.9	328	1.1	-	-	142	0.9	156	0.7	76.7	0.8	-	-	786	0.8	326	1	250	0.8	169	0.9
Beryllium	7.2	590	1.62	0.35	0.64	0.44	-	-	0.37	0.36	0.15	0.29	0.43	0.32	-	-	0.43	0.3	0.6	0.41	0.3	0.32	0.41	0.37
Cadmium	2.5	9.3	1.08	0.44	0.53	0.55	-	-	0.55	0.45	2.43	0.36	< 0.41	0.41	-	-	2.95	0.38	0.24	0.52	0.35	0.4	0.22	0.46
Calcium			38,500	44	17,000	55	-	-	10,300	45	79,100	36	2,480	41	-	-	6,710	38	6,310	52	31,900	40	5,460	46
Chromium	30		60.9	0.44	17.5	0.55	-	-	16.1	0.45	22.8	0.36	19.3	0.41	-	-	67.5	0.38	14.7	0.52	20.9	0.4	10.5	0.46
Cobalt			60.3	0.44	8.32	0.55	-	-	8.23	0.45	15.6	0.36	7.1	0.41	-	-	12	0.38	8.4	0.52	5.3	0.4	6.28	0.46
Copper	50	270	332	4.4	63.5	0.55	-	-	116	0.45	553	3.6	23.8	0.41	-	-	845	3.8	42.6	0.52	171	4	47.5	0.46
Iron			37,000	44	11,800	55	-	-	34,600	45	133,000	360	12,700	41	-	-	49,300	38	11,600	52	17,600	40	12,800	46
Lead	63	1,000	683	8.8	848	11	492	4.1	1,400	8.9	1,160	7.2	38.6	0.8	4,120	39	1,830	75	300	10	1,600	80	607	9.3
Magnesium			6,310	4.4	1,210	5.5	-	-	1,980	4.5	625	3.6	2,600	4.1	-	-	1,280	3.8	1,100	5.2	2,130	4	764	4.6
Manganese	1,600	10,000	335	4.4	256	5.5	-	-	261	4.5	684	3.6	105	4.1	-	-	719	3.8	126	5.2	115	4	121	4.6
Mercury	0.18	2.8	0.67	0.08	3.85	0.12	-	-	3.85	0.09	1.17	0.09	0.16	0.08	-	-	2.84	0.08	2.48	0.11	0.24	0.08	1.4	0.11
Nickel	30	310	38.4	0.44	18.1	0.55	-	-	13.4	0.45	22.6	0.36	17.8	0.41	-	-	26	0.38	16.7	0.52	11.1	0.4	12.5	0.46
Potassium			1,250	9	1,350	11	-	-	973	9	454	7	1,020	8	-	-	1,090	8	988	10	1,890	8	611	9
Selenium	3.9	1,500	< 1.8	1.8	< 2.2	2.2	-	-	< 1.8	1.8	< 1.4	1.4	< 1.6	1.6	-	-	< 1.5	1.5	< 2.1	2.1	< 1.6	1.6	< 1.9	1.9
Silver	2	1,500	< 0.44	0.44	< 0.55	0.55	-	-	< 0.45	0.45	1.1	0.36	< 0.41	0.41	-	-	0.59	0.38	< 0.52	0.52	< 0.40	0.4	< 0.46	0.46
Sodium			591	9	869	11	-	-	297	9	159	7	122	8	-	-	341	8	888	10	415	8	605	9
Thallium			< 1.8	1.8	< 2.2	2.2	-	-	< 1.8	1.8	< 1.4	1.4	< 1.6	1.6	-	-	< 1.5	1.5	< 2.1	2.1	< 1.6	1.6	< 1.9	1.9
Vanadium			18.6	0.4	32.1	0.6	-	-	19.2	0.4	14.6	0.4	21	0.4	-	-	21.9	0.4	26.3	0.5	14.9	0.4	20.2	0.5
Zinc	109	10,000	1,920	88	285	11	-	-	284	8.9	345	7.2	88.2	0.8	-	-	1,250	7.5	263	10	208	8	152	0.9

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

RL- Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RCSCO Guidance Value

COMPOUND	40 CFR 261.24	B3		B6	
		(0-2') mg/Kg		(3-5') mg/Kg	
		Result	RL	Result	RL
TCLP Lead	5	< 0.10	0.1	9.79	0.1

Bold/highlighted- Indicated exceedance of the NYSDEC 40 CFR 261.24 Guidance Value

262 Green Street
Brooklyn, New York

TABLE 7
Parameters Detected Above Track (1) Soil Cleanup Objectives
Soil Borings B1-B8

COMPOUND	Range in Exceedances	Frequency of Detection	B1		B3			B4	B5		B6		B7		B8	
			(0-2') 8/6/2014	(13-15') 8/6/2014	(0-2') 7/15/2014	(7-10') 7/15/2014	(10-13') 7/15/2014	(13-15') 8/15/2014	(0-2') 8/6/2014	(13-15') 8/6/2014	(3-5') 7/15/2014	(15-17') 7/15/2014	(0-2') 8/6/2017	(13-15') 8/6/2014	(0-2') 8/6/2014	(13-15') 8/6/2014
Sample Results in ug/kg																
Methylene chloride	100	2	-	**100**	-	-	-	-	-	-	-	-	-	-	-	**100**
tert-Butylbenzene	8,600	1	-	-	-	-	**8,600**	-	-	-	-	-	-	-	-	-
Sample Results in ug/kg																
Benzo(a)anthracene	2,600-3,100	3	-	**3,100**	-	**2,600**	-	**2,700**	-	-	-	-	-	-	-	-
Benzo(a)pyrene	2,200-2,300	3	-	**2,300**	-	**2,200**	-	**2,300**	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	2,800-3,400	3	-	**2,800**	-	**3,400**	-	**2,900**	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	910-1,200	3	-	**1,200**	-	**1,000**	-	**910**	-	-	-	-	-	-	-	-
Chrysene	2,500-2,800	3	-	**2,800**	-	**2,600**	-	**2,500**	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	680-1,200	3	-	**1,200**	-	**680**		**990**	-	-	-	-	-	-	-	-
Sample Results in ug/kg																
Heptachlor	91	1	-	-	-	-	-	-	-	-	-	-	-	-	**91**	-
PCB-1248	730-800	2	**730**	-	**800**	-	-	-	-	-	-	-	-	-	-	-
Sample Results in mg/kg																
Arsenic	16.3-28.3	6	**20.3**	**16**	-	-	-	-	**28.3**	-	-	-	**23.6**	**20**	-	**20**
Barium	423-786	2	**423**	-	-	-	-	-	-	-	-	-	**786**	-	-	-
Cadmium	2.95	1	-	-	-	-	-	-	-	-	-	-	**2.95**	-	-	-
Chromium	60.9-67.5	2	**60.9**	-	-	-	-	-	-	-	-	-	**67.5**	-	-	-
Copper	63.5-845	6	**332.0**	**63.5**	-	-	-	**116**	**553**	-	-	-	**845**	-	**171**	-
Lead	300-4,120	10	**683**	**848**	**492**	-	-	**1,400**	**1,160**	-	**4,120**	-	**1,830**	**300q**	**1,600**	**607**
Mercury	0.24-3.85	8	**0.7**	**4**	-	-	-	**3.85**	**1.17**	-	-	-	**2.84**	**2.48**	**0.24**	**1.4**
Nickel	38.4	1	**38**	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	152-1,920	8	**1,920**	**285**	-	-	-	**284**	**345**	-	-	-	**1,250**	**263**	**208**	**152**

Table 8
262 Green St
Brooklyn, New York
Ground Water Analytical Results
Volatile Organic Compounds

Compound	NYSDEC Groundwater Quality Standards	B1		B3		B4		B5		B6		B7		B8		MW1		MW2		MW3		MW4		MW5		MW6	
		8/7/2014		7/15/2014		8/7/2014		8/7/2014		7/15/2014		8/7/2014		8/7/2014		8/1/2017		8/1/2017		8/1/2017		8/1/2017		8/1/2017		8/1/2017	
		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		mg/L		µg/L	
	µg/L	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
1,1,1,2-Tetrachlorothane	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,1,1-Trichloroethane	5	< 5.0	5	< 1.0	1	< 5.0	5	< 5.0	5	< 2.0	2	< 5.0	5	< 5.0	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
1,1,2,2-Tetrachloroethane	5	< 1.0	1	< 0.50	0.5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,1,2-Trichloroethane	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,1-Dichloroethane	5	< 5.0	5	< 1.0	1	< 5.0	5	< 5.0	5	< 2.0	2	< 5.0	5	< 5.0	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
1,1-Dichloroethene	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,1-Dichloropropene		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,2,3-Trichlorobenzene		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,2,3-Trichloropropane	0.04	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25
1,2,4-Trichlorobenzene		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,2,4-Trimethylbenzene	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,2-Dibromo-3-chloropropane	0.04	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50
1,2-Dibromoethane		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25
1,2-Dichlorobenzene	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,2-Dichloroethane	0.6	< 0.60	0.6	< 0.60	0.6	< 0.60	0.6	< 0.60	0.6	< 1.2	1.2	< 0.60	0.6	< 0.60	0.6	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60
1,2-Dichloropropane	0.94	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,3,5-Trimethylbenzene	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,3-Dichlorobenzene		< 5.0	5	< 1.0	1	< 5.0	5	< 5.0	5	< 2.0	2	< 5.0	5	< 5.0	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,3-Dichloropropane	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
1,4-Dichlorobenzene	5	< 5.0	5	< 1.0	1	< 5.0	5	< 5.0	5	< 2.0	2	< 5.0	5	< 5.0	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2,2-Dichloropropane	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2-Chlorotoluene	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
2-Hexanone (Methyl Butyl Ketone)		< 1.0	1	< 5.0	5	< 1.0	1	< 1.0	1	< 10	10	< 1.0	1	< 1.0	1	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5
2-Isopropyltoluene	5	< 1.0	1	**15**	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	**0.52**	1.0	**6**	1.0	**8.1**	1.0	< 1.0	1.0	< 1.0	1.0
4-Chlorotoluene	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
4-Methyl-2-Pentanone		< 1.0	1	< 5.0	5	< 1.0	1	< 1.0	1	< 10	10	< 1.0	1	< 1.0	1	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5
Acetone		**4.1**	5	< 25	25	**10**	5	**7.9**	5	< 50	50	**11**	5	**8.3**	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	**5.5**	5.0	< 5.0	5.0	< 5.0	5.0
Acrolein		< 5.0	5	< 5.0	5	< 5.0	5	< 5.0	5	< 10	10	< 5.0	5	< 5.0	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Acrylonitrile	5	< 5.0	5	< 0.70	0.7	< 5.0	5	< 5.0	5	< 1.4	1.4	< 5.0	5	< 5.0	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Benzene	1	**0.51**	0.7	< 1.0	1	**0.59**	0.7	< 0.70	0.7	< 2.0	2	< 0.70	0.7	< 0.70	0.7	< 0.70	0.70	< 0.70	0.70	< 0.70	0.70	< 0.70	0.70	< 0.70	0.70	< 0.70	0.70
Bromobenzene	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Bromochloromethane	5	< 1.0	1	< 0.50	0.5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Bromodichloromethane		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Bromoform		< 5.0	5	< 1.0	1	< 5.0	5	< 5.0	5	< 2.0	2	< 5.0	5	< 5.0	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Bromomethane	5	< 5.0	5	< 5.0	5	< 5.0	5	< 5.0	5	< 10	10	< 5.0	5	< 5.0	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Carbon Disulfide	60	**1.3**	1	< 1.0	1	< 1.0	1	**0.71**	1	< 2.0	2	**0.25**	1	**0.65**	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Carbon tetrachloride	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Chlorobenzene	5	< 5.0	5	< 1.0	1	< 5.0	5	< 5.0	5	< 2.0	2	< 5.0	5	< 5.0	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Chloroethane	5	< 5.0	5	< 1.0	1	< 5.0	5	< 5.0	5	< 2.0	2	< 5.0	5	< 5.0	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Chloroform	7	< 5.0	5	< 1.0	1	< 5.0	5	< 5.0	5	< 2.0	2	< 5.0	5	< 5.0	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Chloromethane	60	< 5.0	5	< 1.0	1	< 5.0	5	< 5.0	5	< 2.0	2	< 5.0	5	< 5.0	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
cis-1,2-Dichloroethene	5	< 1.0	1	< 0.40	0.4	< 1.0	1	< 1.0	1	< 0.80	0.8	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
cis-1,3-Dichloropropene		< 0.40	0.4	< 0.50	0.5	< 0.40	0.4	< 0.40	0.4	< 1.0	1	< 0.40	0.4	< 0.40	0.4	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40
Dibromochloromethane		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Dibromomethane	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Dichlorodifluoromethane	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Ethylbenzene	5	< 1.0	1	< 0.40	0.4	< 1.0	1	< 1.0	1	< 0.80	0.8	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Hexachlorobutadiene	0.5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50
Isopropylbenzene	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
m&p-Xylenes	5	< 1.0	1	< 5.0	5	< 1.0	1	< 1.0	1	< 10	10	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	**0.51**	1.0	< 1.0	1.0	< 1.0	1.0
Methyl Ethyl Ketone (2-Butanone)		< 1.0	1	**1.2**	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 2.5	2.5	< 2.5	2.5	**6.2**	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5
Methyl t-butyl ether (MTBE)	10	**0.62**	1	< 1.0	1	**0.25**	1	< 1.0	1	< 2.0	2	**0.43**	1	**0.34**	1	**0.39**	1.0	< 1.0	1.0	**0.82**	1.0	0.99	1.0	**0.29**	1.0	< 1.0	1.0
Methylene chloride	5	**0.27**	3	**1.8**	1	**0.33**	3	< 3.0	3	< 2.0	2	**0.53**	3	< 3.0	3	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0
Naphthalene	10	**0.35**	1	**4.6**	1	**0.7**	1	**0.21**	1	< 2.0	2	**18**	1	**0.42**	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	**1.3**	1.0	< 1.0	1.0	< 1.0	1.0
n-Butylbenzene	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	**0.38**	1.0	**2.5**	1.0	< 1.0	1.0	< 1.0	1.0
n-Propylbenzene	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
o-Xylene	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
p-Isopropyltoluene		< 1.0	1	**14**	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	**0.76**	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
sec-Butylbenzene	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	**2.6**	1.0	**6.4**	1.0	< 1.0	1.0	< 1.0	1.0
Styrene	5	< 1.0	1	**24**	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
tert-Butylbenzene	5	**1.4**	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	**0.32**	1	**0.5**	1	**2.1**	1.0	**8.8**	1.0	**7.7**	1.0	**13**	1.0	< 1.0	1.0	< 1.0	1.0
Tetrachloroethene	5	< 1.0	1	< 2.5	2.5	< 1.0	1	< 1.0	1	< 5.0	5	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Tetrahydrofuran (THF)		< 5.0	5	< 1.0	1	< 5.0	5	< 5.0	5	< 2.0	2	< 5.0	5	< 5.0	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
Toluene	5	**0.25**	1	< 1.0	1	**0.2**	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
trans-1,2-Dichloroethene	5	< 5.0	5	< 1.0	1	< 5.0	5	< 5.0	5	< 2.0	2	< 5.0	5	< 5.0	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0
trans-1,3-Dichloropropene	0.4	< 0.40	0.4	< 0.40	0.4	< 0.40	0.4	< 0.40	0.4	< 0.80	0.8	< 0.40	0.4	< 0.40	0.4	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40
trans-1,4-dichloro-2-butene	5	< 1.0	1	< 5.0	5	< 1.0	1	< 1.0	1	< 10	10	< 1.0	1	< 1.0	1	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5
Trichloroethene	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	**3.1**	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Trichlorofluoromethane	5	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Trichlorotrifluoroethane		< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0
Vinyl Chloride	2	< 1.0	1	< 1.0	1	< 1.0	1	< 1.0	1	< 2.0	2	< 1.0	1	< 1.0	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0

Notes:
RL- Reporting Limit
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

TABLE 9
262 Green St
Brooklyn, New York
Groundwater Analytical Results
Semi-Volatile Organic Compounds

Compound	NYSDEC Groundwater Quality Standards µg/L	MW1 8/1/2017 µg/L		MW2 8/1/2017 µg/L		MW3 8/1/2017 µg/L		MW4 8/1/2017 µg/L		MW5 8/1/2017 µg/L		MW6 8/1/2017 µg/L	
		Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
1,2,4-Trichlorobenzene		< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
1,2-Dichlorobenzene		< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
1,2-Diphenylhydrazine		< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
1,3-Dichlorobenzene	3	< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
1,4-Dichlorobenzene		< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
2,4,5-Trichlorophenol	1	< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
2,4,6-Trichlorophenol	1	< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
2,4-Dichlorophenol		< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
2,4-Dimethylphenol		< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
2,4-Dinitrophenol	5	< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
2,4-Dinitrotoluene	5	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
2,6-Dinitrotoluene	5	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
2-Chloronaphthalene	10	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
2-Chlorophenol	1	< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
2-Methylnaphthalene		< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
2-Methylphenol (o-cresol)	1	< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
2-Nitroaniline	5	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
2-Nitrophenol	1	< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
3&4-Methylphenol (m&p-cresol)		< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
3,3'-Dichlorobenzidine	5	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
3-Nitroaniline	5	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
4,6-Dinitro-2-methylphenol	1	< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
4-Bromophenyl phenyl ether		< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
4-Chloro-3-methylphenol	1	< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
4-Chloroaniline	5	< 3.4	3.4	< 3.4	3.4	< 3.4	3.4	< 3.3	3.3	< 3.3	3.3	< 3.3	3.3
4-Chlorophenyl phenyl ether		< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
4-Nitroaniline	5	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
4-Nitrophenol		< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
Acetophenone		< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Aniline	5	< 3.4	3.4	< 3.4	3.4	< 3.4	3.4	< 3.3	3.3	< 3.3	3.3	< 3.3	3.3
Anthracene	50	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Benzidine	5	< 4.4	4.4	< 4.4	4.4	< 4.3	4.3	< 4.2	4.2	< 4.2	4.2	< 4.2	4.2
Benzoic acid		< 25	25	< 24	24	< 24	24	< 23	23	< 23	23	< 23	23
Benzyl butyl phthalate	50	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Bis(2-chloroethoxy)methane	5	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Bis(2-chloroethyl)ether	1	< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
Bis(2-chloroisopropyl)ether		< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Carbazole		< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Dibenzofuran		< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Diethyl phthalate	50	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Dimethylphthalate	50	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Di-n-butylphthalate	50	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Di-n-octylphthalate	50	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Fluoranthene	50	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	**2.1**	4.7	< 4.7	4.7	< 4.7	4.7
Fluorene	50	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Hexachlorobutadiene	0.5	< 0.39	0.39	< 0.39	0.39	< 0.38	0.38	< 0.38	0.38	< 0.38	0.38	< 0.38	0.38
Hexachlorocyclopentadiene	5	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Isophorone	50	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Naphthalene	10	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Nitrobenzene	0.4	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.09	0.09	< 0.09	0.09	< 0.09	0.09
N-Nitrosodimethylamine		< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.09	0.09	< 0.09	0.09	< 0.09	0.09
N-Nitrosodi-n-propylamine		< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
N-Nitrosodiphenylamine	50	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	< 4.7	4.7	< 4.7	4.7	< 4.7	4.7
Phenol	50	< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
Pyrene	50	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	**1.9**	4.7	< 4.7	4.7	< 4.7	4.7
1,2,4,5-Tetrachlorobenzene		< 0.49	0.49	< 0.49	0.49	< 0.48	0.48	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47
Acenaphthene	20	< 4.9	4.9	< 4.9	4.9	< 4.8	4.8	**1.6**	4.7	< 4.7	4.7	< 4.7	4.7
Acenaphthylene		< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.09	0.09	< 0.09	0.09	< 0.09	0.09
Benz(a)anthracene	0.002	**0.07**	0.02	**0.06**	0.02	**0.1**	0.02	**0.91**	0.02	**0.08**	0.02	**0.05**	0.02
Benzo(a)pyrene		**0.04**	0.02	**0.05**	0.02	**0.06**	0.02	**0.97**	0.02	**0.07**	0.02	**0.05**	0.02
Benzo(b)fluoranthene	0.002	**0.04**	0.02	**0.05**	0.02	**0.06**	0.02	**0.73**	0.02	**0.06**	0.02	**0.05**	0.02
Benzo(ghi)perylene		**0.02**	0.02	**0.03**	0.02	**0.04**	0.02	**0.65**	0.02	**0.05**	0.02	**0.03**	0.02
Benzo(k)fluoranthene	0.002	**0.04**	0.02	**0.04**	0.02	**0.06**	0.02	**0.74**	0.02	**0.06**	0.02	**0.05**	0.02
Bis(2-ethylhexyl)phthalate	5	< 0.98	0.98	< 0.98	0.98	< 0.96	0.96	< 0.94	0.94	< 0.94	0.94	< 0.94	0.94
Chrysene	0.002	**0.07**	0.02	**0.06**	0.02	**0.1**	0.02	**0.93**	0.02	**0.08**	0.02	**0.06**	0.02
Dibenz(a,h)anthracene		< 0.02	0.02	< 0.02	0.02	< 0.02	0.02	**0.17**	0.02	< 0.02	0.02	< 0.02	0.02
Hexachlorobenzene	0.04	< 0.02	0.02	< 0.02	0.02	< 0.02	0.02	< 0.02	0.02	< 0.02	0.02	< 0.02	0.02
Hexachloroethane	5	< 0.49	0.49	< 0.49	0.49	< 0.48	0.48	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47
Indeno(1,2,3-cd)pyrene	0.002	**0.02**	0.02	**0.03**	0.02	**0.04**	0.02	**0.63**	0.02	**0.04**	0.02	**0.03**	0.02
Pentachloronitrobenzene		< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.09	0.09	< 0.09	0.09	< 0.09	0.09
Pentachlorophenol	1	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.09	0.09	< 0.09	0.09	< 0.09	0.09
Phenanthrene	50	< 0.10	0.10	**0.25**	0.10	**0.37**	0.10	**2.10**	0.09	**0.15**	0.09	< 0.09	0.09
Pyridine	50	< 9.8	9.8	< 9.8	9.8	< 9.6	9.6	< 9.4	9.4	< 9.4	9.4	< 9.4	9.4

Notes:
RL- Reporting Limit
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

TABLE 10
262 Green St
Brooklyn, New York
Groundwater Analytical Results
Pesticides/PCBs

	Compound	NYSDEC Groundwater Quality Standards µg/L	MW1 8/1/2017 µg/L		MW2 8/1/2017 µg/L		MW3 8/1/2017 µg/L		MW4 8/1/2017 µg/L		MW5 8/1/2017 µg/L		MW6 8/1/2017 µg/L	
			Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
PCBs	PCB-1016	0.09	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047
	PCB-1221	0.09	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047
	PCB-1232	0.09	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047
	PCB-1242	0.09	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047
	PCB-1248	0.09	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047
	PCB-1254	0.09	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047
	PCB-1260	0.09	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047
	PCB-1262	0.09	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047
	PCB-1268	0.09	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047
Pesticides	4,4-DDD	0.3	< 0.005	0.005	< 0.024	0.024	< 0.024	0.024	< 0.023	0.023	< 0.024	0.024	< 0.005	0.005
	4,4-DDE	0.2	< 0.005	0.005	< 0.024	0.024	< 0.024	0.024	< 0.023	0.023	< 0.024	0.024	< 0.005	0.005
	4,4-DDT	0.11	< 0.005	0.005	< 0.024	0.024	< 0.024	0.024	< 0.023	0.023	< 0.024	0.024	< 0.005	0.005
	a-BHC	0.94	< 0.005	0.005	< 0.024	0.024	< 0.024	0.024	< 0.023	0.023	< 0.024	0.024	< 0.005	0.005
	a-Chlordane		< 0.010	0.010	< 0.095	0.095	< 0.094	0.094	< 0.094	0.094	< 0.095	0.095	< 0.009	0.009
	Alachlor		< 0.071	0.071	< 0.024	0.024	< 0.024	0.024	< 0.047	0.047	< 0.024	0.024	< 0.071	0.071
	Aldrin		< 0.001	0.001	< 0.024	0.024	< 0.024	0.024	< 0.014	0.014	< 0.024	0.024	< 0.001	0.001
	b-BHC	0.04	< 0.005	0.005	< 0.024	0.024	< 0.024	0.024	< 0.023	0.023	< 0.024	0.024	< 0.005	0.005
	Chlordane	0.05	< 0.047	0.047	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47	< 0.47	0.47	< 0.047	0.047
	d-BHC	0.04	< 0.005	0.005	< 0.024	0.024	< 0.024	0.024	< 0.047	0.047	< 0.024	0.024	< 0.005	0.005
	Dieldrin	0.004	< 0.001	0.001	< 0.024	0.024	< 0.024	0.024	< 0.014	0.014	< 0.024	0.024	< 0.001	0.001
	Endosulfan I		< 0.010	0.010	< 0.095	0.095	< 0.094	0.094	< 0.047	0.047	< 0.095	0.095	< 0.009	0.009
	Endosulfan II		< 0.010	0.010	< 0.095	0.095	< 0.094	0.094	< 0.094	0.094	< 0.095	0.095	< 0.009	0.009
	Endosulfan Sulfate		< 0.010	0.010	< 0.095	0.095	< 0.094	0.094	< 0.094	0.094	< 0.095	0.095	< 0.009	0.009
	Endrin		< 0.010	0.010	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.009	0.009
	Endrin aldehyde	5	< 0.010	0.010	< 0.095	0.095	< 0.094	0.094	< 0.094	0.094	< 0.095	0.095	< 0.009	0.009
	Endrin ketone		< 0.010	0.010	< 0.095	0.095	< 0.094	0.094	< 0.094	0.094	< 0.095	0.095	< 0.009	0.009
	gamma-BHC	0.05	< 0.010	0.010	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.005	0.005
	g-Chlordane		< 0.010	0.010	< 0.095	0.095	< 0.094	0.094	< 0.094	0.094	< 0.095	0.095	< 0.009	0.009
	Heptachlor	0.04	< 0.010	0.010	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.009	0.009
	Heptachlor epoxide	0.03	< 0.010	0.010	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.047	0.047	< 0.009	0.009
	Methoxychlor	35	< 0.095	0.095	< 0.95	0.95	< 0.94	0.94	< 0.94	0.94	< 0.95	0.95	< 0.094	0.094
	Toxaphene		< 0.19	0.19	< 1.9	1.9	< 1.9	1.9	< 1.9	1.9	< 1.9	1.9	< 0.19	0.19

Notes:
RL- Reporting limit
ND - Non-detect
ND* - Due to matrix interference from non target compounds in the sample
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Table 11
262 Green St
Brooklyn, New York
Groundwater Analytical Results
Total Metals

Compound	NYSDEC Groundwater Quality Standards mg/L	MW1 8/1/2017 mg/L		MW2 8/1/2017 mg/L		MW3 8/1/2017 mg/L		MW4 8/1/2017 mg/L		MW5 8/1/2017 mg/L		MW6 8/1/2017 mg/L	
		Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
Aluminum	0.1	0.124	0.010	2.17	0.010	2.73	0.010	1.69	0.010	1.05	0.010	2.5	0.010
Antimony	0.003	0.003	0.002	< 0.002	0.002	< 0.002	0.002	0.004	0.002	< 0.002	0.002	< 0.002	0.002
Arsenic	0.025	0.004	0.004	0.004	0.004	0.007	0.004	0.007	0.004	0.004	0.004	0.004	0.004
Barium	1	0.314	0.010	0.328	0.010	0.333	0.010	0.404	0.010	0.471	0.010	0.473	0.010
Beryllium	0.003	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001
Cadmium	0.005	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	0.001	0.004
Calcium		125	0.010	311	0.10	167	0.10	252	0.10	286	1.0	192	0.10
Chromium	0.05	0.002	0.001	0.016	0.001	0.012	0.001	0.011	0.001	0.014	0.001	0.009	0.001
Cobalt		< 0.005	0.005	0.001	0.005	0.002	0.005	0.002	0.005	< 0.005	0.005	0.002	0.005
Copper	0.2	0.002	0.005	0.011	0.005	0.025	0.005	0.03	0.005	0.009	0.005	0.027	0.005
Iron	0.3	4.72	0.01	2.32	0.01	10.6	0.01	13.3	0.01	2.39	0.01	25.3	0.01
Lead	0.025	0.005	0.002	0.053	0.002	0.114	0.002	0.127	0.002	0.05	0.002	0.072	0.002
Magnesium	35	21.4	0.010	62.5	0.010	23.9	0.010	45	0.010	51.5	0.010	23.1	0.010
Manganese	0.3	0.66	0.005	1.52	0.005	0.657	0.005	0.888	0.005	1.4	0.005	1.47	0.005
Mercury	0.0007	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002
Nickel	0.1	0.007	0.004	0.049	0.004	0.017	0.004	0.03	0.004	0.056	0.004	0.01	0.004
Potassium		26.7	0.1	45.8	0.1	30.5	0.1	65.5	1.0	46.6	1.0	22.5	0.1
Selenium	0.01	< 0.002	0.002	< 0.002	0.002	< 0.002	0.002	< 0.002	0.002	< 0.002	0.002	< 0.002	0.002
Silver	0.05	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005
Sodium	20	177	1.0	195	1.0	80.4	1.0	216	1.0	351	10	167	1.0
Thallium	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005
Vanadium		0.001	0.010	0.02	0.010	0.018	0.010	0.015	0.010	0.043	0.010	0.007	0.010
Zinc	5	0.025	0.010	0.051	0.010	0.278	0.010	0.124	0.010	0.063	0.010	0.095	0.010

Notes:
RL- Reporting limit
NS - No Standard
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Table 12
262 Green St
Brooklyn, New York
Groundwater Analytical Results
Dissolved Metals

Compound	NYSDEC Groundwater Quality Standards mg/L	MW1 8/1/2017 mg/L		MW2 8/1/2017 mg/L		MW3 8/1/2017 mg/L		MW4 8/1/2017 mg/L		MW5 8/1/2017 mg/L		MW6 8/1/2017 mg/L	
		Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL
Aluminum	NS	< 0.011	0.011	**0.003**	0.011	**0.3**	0.053	< 0.011	0.011	**0.021**	0.011	**0.325**	0.053
Antimony	0.003	< 0.003	0.003	< 0.003	0.003	< 0.003	0.003	< 0.003	0.003	< 0.003	0.003	< 0.003	0.003
Arsenic	0.025	**0.003**	0.003	**0.004**	0.003	**0.003**	0.003	**0.004**	0.003	**0.002**	0.003	**0.003**	0.003
Barium	1	**0.255**	0.011	**0.297**	0.011	**0.21**	0.011	**0.25**	0.011	**0.477**	0.011	**0.279**	0.011
Beryllium	0.003	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001	< 0.001	0.001
Cadmium	0.005	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004
Calcium	NS	**132**	0.01	**327**	0.11	**191**	0.11	**250**	0.11	**271**	0.11	**197**	0.11
Chromium	0.05	**0.001**	0.001	**0.013**	0.001	**0.004**	0.001	**0.006**	0.001	**0.013**	0.001	< 0.001	0.001
Cobalt	NS	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005
Copper	0.2	< 0.005	0.005	**0.002**	0.005	**0.001**	0.005	**0.001**	0.005	< 0.005	0.005	< 0.005	0.005
Iron	0.5	**0.3**	0.01	**1.77**	0.01	**0.55**	0.01	**1.04**	0.01	**0.61**	0.01	**0.41**	0.01
Lead	0.025	< 0.002	0.002	**0.032**	0.002	**0.003**	0.002	**0.003**	0.002	**0.004**	0.002	< 0.002	0.002
Magnesium	35	**21.9**	0.01	**65.1**	0.01	**24.7**	0.01	**43.8**	0.01	**54**	0.01	**23.4**	0.01
Manganese	0.3	**0.657**	0.005	**1.57**	0.005	**0.612**	0.005	**0.814**	0.005	**1.43**	0.005	**1.45**	0.005
Mercury	0.0007	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002
Nickel	0.1	**0.008**	0.004	**0.05**	0.004	**0.012**	0.004	**0.027**	0.004	**0.059**	0.004	**0.043**	0.004
Potassium	NS	**25.8**	0.1	**45.8**	0.1	**30**	0.1	**65.7**	1.1	**51.5**	0.1	**22.4**	0.1
Selenium	0.01	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004	< 0.004	0.004
Silver	0.05	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005	< 0.005	0.005
Sodium	2	**175**	1.1	**191**	1.1	**79.4**	0.53	**210**	1.1	**307**	1.1	**169**	0.53
Thallium	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005	< 0.0005	0.0005
Vanadium	NS	**0.001**	0.011	**0.015**	0.011	**0.009**	0.011	**0.009**	0.011	**0.041**	0.011	**0.001**	0.011
Zinc	2	**0.01**	0.011	**0.024**	0.011	**0.009**	0.011	**0.035**	0.011	**0.009**	0.011	**0.005**	0.011

Notes:
RL- Reporting limit
NS - No Standard
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

262 Green Street
Brooklyn, New York

TABLE 13
Parameters Detected Above Ambient Water Quality Standards

VOCs

COMPOUND	Range in Detections	Number of Occurrences	B3 7/15/2014	B7 8/7/2014	MW2 8/1/2017	MW3 8/1/2017	MW4 8/1/2017
Sample Results in (µg/L)							
2-Isopropyltoluene	7.0-88	3	15	-	-	6	8.1
Naphthalene	18	1	-	18	-	-	
sec-Butylbenzene	6	1	-	-	-	-	6.4
tert-Butylbenzene	7.7-13	3	-	-	8.8	7.7	13

SVOCs

COMPOUND	Range in Detections	Number of Occurrences	MW1 8/1/2017	MW2 8/1/2017	MW3 8/1/2017	MW4 8/1/2017	MW5 8/1/2017	MW6 8/1/2017
Sample Results in (µg/L)								
Benz(a)anthracene	0.05-0.91	6	0.07	0.06	0.1	0.91	0.08	0.05
Benzo(a)pyrene	0.04-0.97	6	0.04	0.05	0.06	0.97	0.07	0.05
Benzo(b)fluoranthene	0.04-0.73	6	0.04	0.05	0.06	0.73	0.06	0.05
Benzo(k)fluoranthene	0.04-0.75	6	0.04	0.04	0.06	0.74	0.06	0.05
Chrysene	0.06-0.93	6	0.07	0.06	0.1	0.93	0.08	0.06
Indeno(1,2,3-cd)pyrene	0.02-0.63	6	0.02	0.03	0.04	0.63	0.04	0.03

Metals (Total)

COMPOUND	Range in Detections	Number of Occurrences	MW1 8/1/2017	MW2 8/1/2107	MW3 8/1/2017	MW4 8/1/2017	MW5 8/1/2017	MW6 8/1/2017
Sample Results in (mg/L)								
Aluminum	0.124-2.73	6	0.124	2.17	2.73	1.69	1.05	2.5
Antimony	0.003-0.004	2	0.003	-	-	0.004	-	-
Iron	2.32-25.3	6	4.72	2.32	10.6	13.3	2.39	25.3
Lead	0.005-0.127	5	-	0.053	0.114	0.127	0.05	0.072
Magnesium	21.4-65.5	3	-	62.5	-	45	51.5	-
Manganese	0.657-1.52	6	0.66	1.52	0.657	0.888	1.4	1.47
Sodium	80.4-351	6	177	195	80.4	216	351	167

Metals (Dissolved)

COMPOUND	Range in Detections	Number of Occurrences	MW1 8/1/2017	MW2 8/1/2107	MW3 8/1/2017	MW4 8/1/2017	MW5 8/1/2017	MW6 8/1/2017
Sample Results in (mg/L)								
Aluminum	0.325	1	-	-	-	-	-	0.325
Iron	0.55-1.77	5	-	1.77	0.55	1.04	0.61	0.41
Lead	0.032	1	-	0.032	-	-	-	-
Magnesium	43.8-65.1	3	-	65.1	-	43.8	54	-
Manganese	0.612-1.57	6	0.657	1.57	0.612	0.814	1.43	1.45
Sodium	79.4-307	6	175	191	79.4	210	307	169

TABLE 14
262 Green St
Brooklyn, New York
Soil Gas - Volatile Organic Compounds

COMPOUNDS	NYSDOH Maximum Sub-Slab Value ($\mu g/m^3$) [a]	NYSDOH Soil Outdoor Background Levels ($\mu g/m^3$) [b]	SG1 8/1/2017 ($\mu g/m3$)		SG2 8/1/2017 ($\mu g/m3$)		SG3 8/1/2017 ($\mu g/m3$)		SG4 8/1/2017 ($\mu g/m3$)		SG5 8/1/2017 ($\mu g/m3$)		SG6 8/1/2017 ($\mu g/m3$)	
			Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachloroethane			< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,1,1-Trichloroethane	100	<2.0 - 2.8	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,1,2,2-Tetrachloroethane		<1.5	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,1,2-Trichloroethane		<1.0	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,1-Dichloroethane		<1.0	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,1-Dichloroethene		<1.0	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2,4-Trichlorobenzene		NA	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2,4-Trimethylbenzene		<1.0	**9.04**	1.00	< 30.0	30.0	< 30.0	30.0	**5.06**	1.00	**9.53**	1.00	**11**	1.00
1,2-Dibromoethane (EDB)		<1.5	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2-Dichlorobenzene		<2.0	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2-Dichloroethane		<1.0	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2-Dichloropropane			< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,2-Dichlorotetrafluoroethane			< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,3,5-Trimethylbenzene		<1.0	**2.67**	1.00	< 30.0	30.0	< 30.0	30.0	**2.42**	1.00	**2.29**	1.00	**2.73**	1.00
1,3-Butadiene		NA	< 1.00	1.00	< 30.1	30.1	< 30.1	30.1	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,3-Dichlorobenzene		<2.0	**51.3**	1.00	< 30.0	30.0	**30.5**	30.0	**12.9**	1.00	**40.7**	1.00	**49.4**	1.00
1,4-Dichlorobenzene		NA	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
1,4-Dioxane			< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
2-Hexanone			< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
4-Ethyltoluene		NA	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	**1.77**	1.00	**1.99**	1.00	**1.9**	1.00
4-Isopropyltoluene			**2.32**	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	**1.57**	1.00	**2.38**	1.00
4-Methyl-2-pentanone			< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	**2.35**	1.00	< 1.00	1.00	**4.83**	1.00
Acetone		NA	**575**	9.99	**726**	29.9	**1220**	29.9	**593**	9.99	**741**	9.99	**273**	9.99
Acrylonitrile			< 1.00	1.00	< 29.9	29.9	< 29.9	29.9	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Benzene		<1.6 - 4.7	**25.8**	1.00	< 30.0	30.0	**30.4**	30.0	**6**	1.00	**6.99**	1.00	**21.2**	1.00
Benzyl Chloride		NA	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Bromodichloromethane		<5.0	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Bromoform		<1.0	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Bromomethane		<1.0	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Carbon Disulfide		NA	**22.8**	1.00	**67.5**	30.0	**44.8**	30.0	**8.84**	1.00	**1.87**	1.00	**87.8**	1.00
Carbon Tetrachloride	5	<3.1	< 0.25	0.25	< 7.48	7.48	< 7.48	7.48	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25
Chlorobenzene		<2.0	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Chloroethane		NA	< 1.00	1.00	< 30.1	30.1	< 30.1	30.1	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Chloroform		<2.4	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	**1.95**	1.00	< 1.00	1.00
Chloromethane		<1.0 - 1.4	**1.28**	1.00	< 29.9	29.9	< 29.9	29.9	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
cis-1,2-Dichloroethene		<1.0	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
cis-1,3-Dichloropropene		NA	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Cyclohexane		NA	**8.26**	1.00	**316**	30.0	**513**	30.0	**5.26**	1.00	< 1.00	1.00	**13.7**	1.00
Dibromochloromethane		<5.0	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Dichlorodifluromethane		NA	**2.38**	1.00	< 30.0	30.0	< 30.0	30.0	**4.04**	1.00	**1.61**	1.00	< 1.00	1.00
Ethanol			**71.2**	1.00	**132**	29.9	**198**	29.9	**75.1**	1.00	**59.3**	1.00	**117**	1.00
Ethyl Acetate		NA	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	**4.57**	1.00	< 1.00	1.00
Ethylbenzene		<4.3	**19.1**	1.00	< 30.0	30.0	< 30.0	30.0	**17.7**	1.00	**146**	1.00	**12.3**	1.00
Heptane		NA	**140**	1.00	**307**	30.0	**487**	30.0	**9.75**	1.00	**6.23**	1.00	**41.4**	1.00
Hexachlorobutadiene		NA	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Hexane		<1.5	**64.8**	1.00	**343**	30.0	**627**	30.0	**17.3**	1.00	**3.7**	1.00	**67.6**	1.00
Isopropylalcohol		NA	**118**	1.00	**88.2**	30.0	**102**	30.0	**6.73**	1.00	**96.5**	1.00	**96.3**	1.00
Isopropylbenzene			< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	**1.41**	1.00	**2.66**	1.00	**1.59**	1.00
Xylene (m&p)		<4.3	**40.2**	1.00	< 30.0	30.0	< 30.0	30.0	**43**	1.00	**230**	1.00	**30.6**	1.00
Methyl Ethyl Ketone			**45.1**	1.00	**38**	30.1	**96.7**	30.1	**57.8**	1.00	**48.6**	1.00	**35.7**	1.00
Methyl tert-butyl ether (MTBE)		NA	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Methylene Chloride		<3.4	**1.85**	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	**2.63**	1.00
n-Butylbenzene			**4.47**	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	**2.32**	1.00	**4.05**	1.00
Xylene (o)		<4.3	**12.6**	1.00	< 30.0	30.0	< 30.0	30.0	**11.9**	1.00	**43.8**	1.00	**12.6**	1.00
Propylene		NA	**54.4**	1.00	< 29.9	29.9	< 29.9	29.9	< 1.00	1.00	**15.7**	1.00	< 1.00	1.00
sec-Butylbenzene			< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Styrene		<1.0	**1.4**	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	**1.59**	1.00
Tetrachloroethene	30		**5.18**	0.25	**11.8**	7.52	< 7.52	7.52	**3.48**	0.25	**5.23**	0.25	**63.5**	0.25
Tetrahydrofuran		NA	**1.46**	1.00	< 30.1	30.1	< 30.1	30.1	**1.78**	1.00	**1.67**	1.00	**3.83**	1.00
Toluene		1.0 - 6.1	**94.2**	1.00	**79.8**	30.0	**76.1**	30.0	**21.1**	1.00	**115**	1.00	**110**	1.00
trans-1,2-Dichloroethene		NA	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
trans-1,3-Dichloropropene		NA	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Trichloroethene	2	<1.7	**40.2**	0.25	**10.2**	7.52	< 7.52	7.52	**5.64**	0.25	**0.71**	0.25	**6.23**	0.25
Trichlorofluoromethane		NA	< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	**3**	1.00	< 1.00	1.00	< 1.00	1.00
Trichlorotrifluoroethane			< 1.00	1.00	< 30.0	30.0	< 30.0	30.0	< 1.00	1.00	< 1.00	1.00	< 1.00	1.00
Vinyl Chloride		<1.0	< 0.25	0.25	< 7.51	7.51	< 7.51	7.51	< 0.25	0.25	< 0.25	0.25	< 0.25	0.25
BTEX			**191.90**		**79.80**		**106.50**		**99.70**		**541.79**		**186.70**	
CVOCs			**45.38**		**22.00**		**0.00**		**9.12**		**5.94**		**69.73**	
Total VOCs			**1,373.03**		**1,736.00**		**2,912.50**		**895.85**		**1,572.55**		**956.88**	

Notes:
NA No guidance value or standard available
(a) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York. October 2006. New York State Department of Health.
(b) NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, February 2005, Summary of Background Levels for Selected Compounds (NYSDOH Database, Outdoor values)

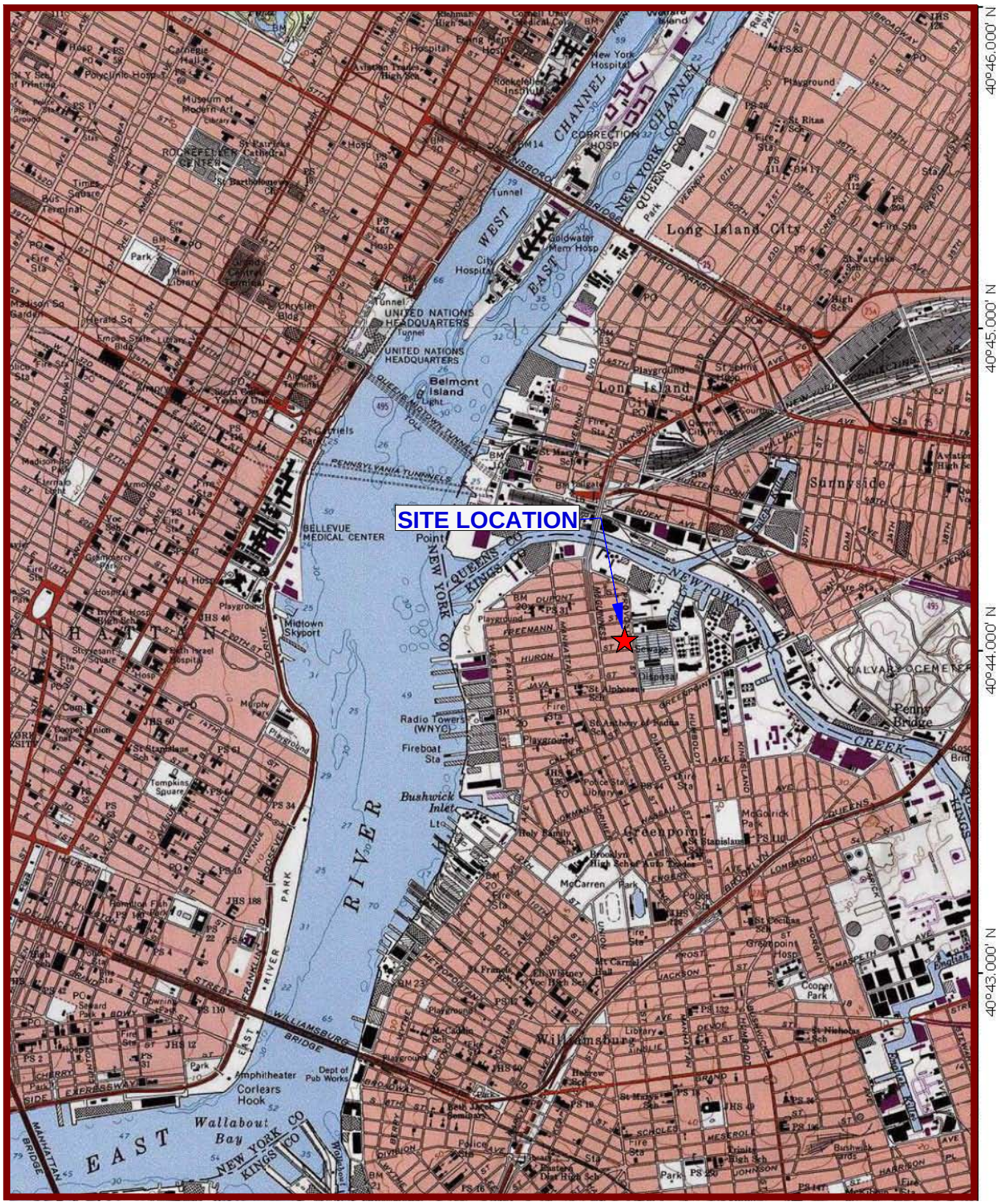
TABLE 15
Project Permit Listing
To Be Updated as Project Progresses

Permit Number	*Permit*	*Originating Agency*	*Pursuant to*	*Issued*	*Expires*	*Applicant*
321458490-01-EW SD	A2 - ALT2	NYCDOB	Temporary Standpipe Alarm System	11/9/2016	11/9/2017	BUONO VALENTINO
321045588-01-DM	DM - DEMO	NYCDOB	Demolition - Full	8/30/2016	7/28/2017	FUCHS CHAIM
321045588-01-EQ FN	DM - DEMO	NYCDOB	Demolition - Fence	8/9/2016	8/9/2017	FUCHS CHAIM
320626408-01-NB	NB - NEWB	NYCDOB	New Building	4/25/2017	4/25/2018	GRUNFELD JOEL
320626408-01-FO	NB - NEWB	NYCDOB	New Building Foundation	4/25/2017	4/25/2018	GRUNFELD JOEL
320626408-01-FO EA	NB - NEWB	NYCDOB	New Building Earthwork	4/25/2017	4/25/2018	GRUNFELD JOEL
320626408-01-EQ FN	NB - NEWB	NYCDOB	Construction Fence	4/25/2017	4/25/2018	GRUNFELD JOEL

Table 16
Emergency Contact List

General Emergencies		911
NYC Police		911
NYC Fire Department		911
Tisch Hospital		(212) 263-5800
NYSDEC Spills Hotline		1-800-457-7362
NYSDEC Project Manager		
NYC Department of Health		(212) 676-2400
National Response Center		1-800-424-8802
Poison Control		1-800-222-1222
EBC Project Manager	Keith Butler	(631) 504-6000
EBC BCP Program Manager	Charles Sosik	(631) 504-6000
EBC Site Safety Officer	Kevin Waters	(631) 504-6000
Remedial Engineer	Ariel Czemerinski	(516) 987-1662
Construction Manager	Yoel Schwimmer	(917) 887-9840

FIGURES

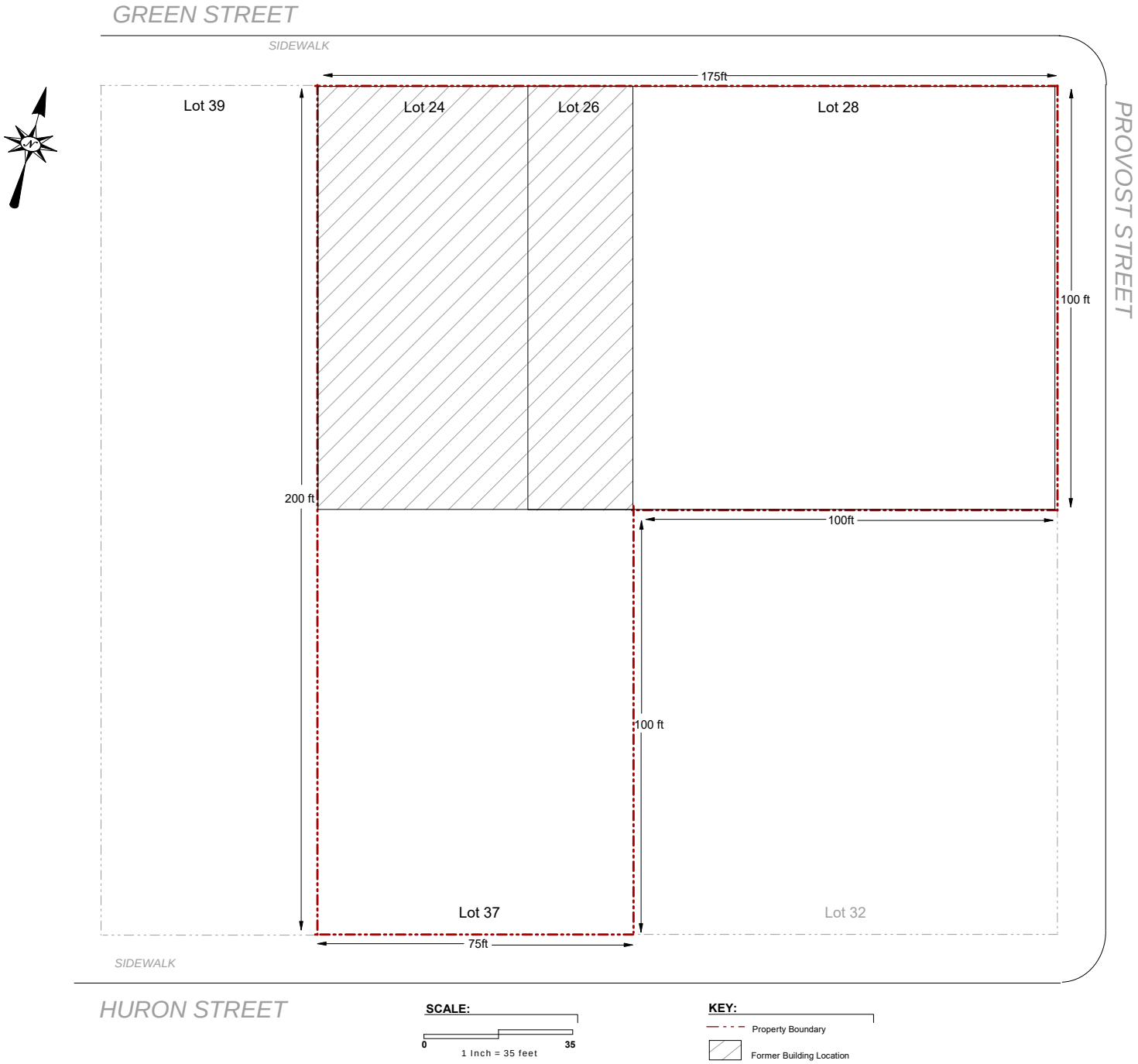


USGS Brooklyn Quadrangle 1995, Contour Interval = 10 feet

EBC
ENVIRONMENTAL BUSINESS CONSULTANTS
Phone 631.504.6000
Fax 631. 924 .2870

262 GREEN
260-276 GREEN STREET AND 263 HURON STREET, BROOKLYN, NY

FIGURE 1 SITE LOCATION MAP



EBC
ENVIRONMENTAL BUSINESS CONSULTANTS
Phone 631.504.6000
Fax 631. 924 .2870

Figure No. 2

Site Name: 262 GREEN

Site Address: 262-276 GREEN STREET, & 263 HURON STREET, BROOKLYN, NY

Drawing Title: SITE PLAN

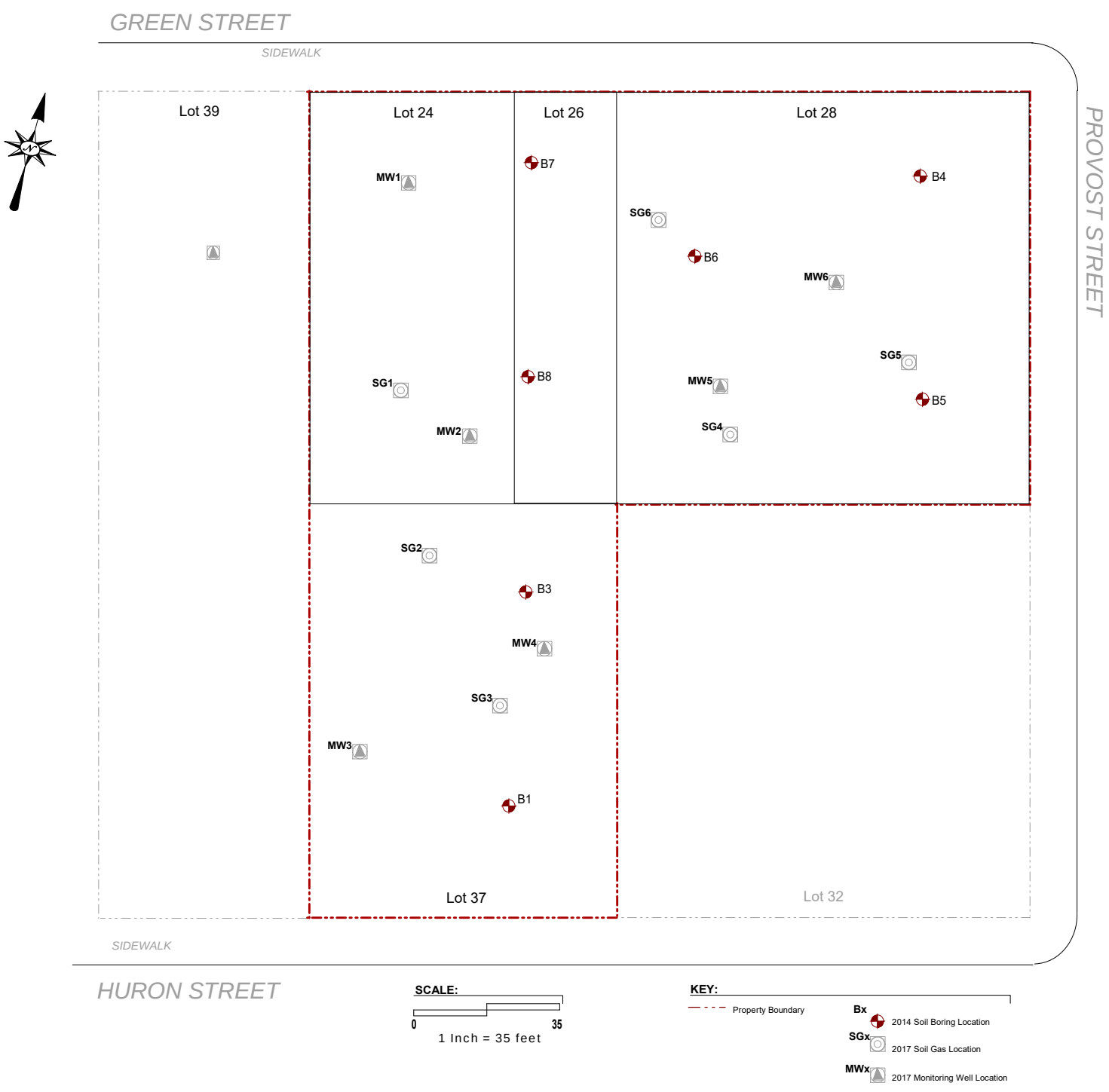
EBC
Environmental Business Consultants
1808 Middle Country Road. Ridge. NY 11961
Phone: 631.504.6000
Fax: 631.924.2780

262 GREEN

262-276 GREEN STREET, & 263 HURON STREET, BROOKLYN, NY

FIGURE 3

PROJECT SITE AND ADJACENT PROPERTIES



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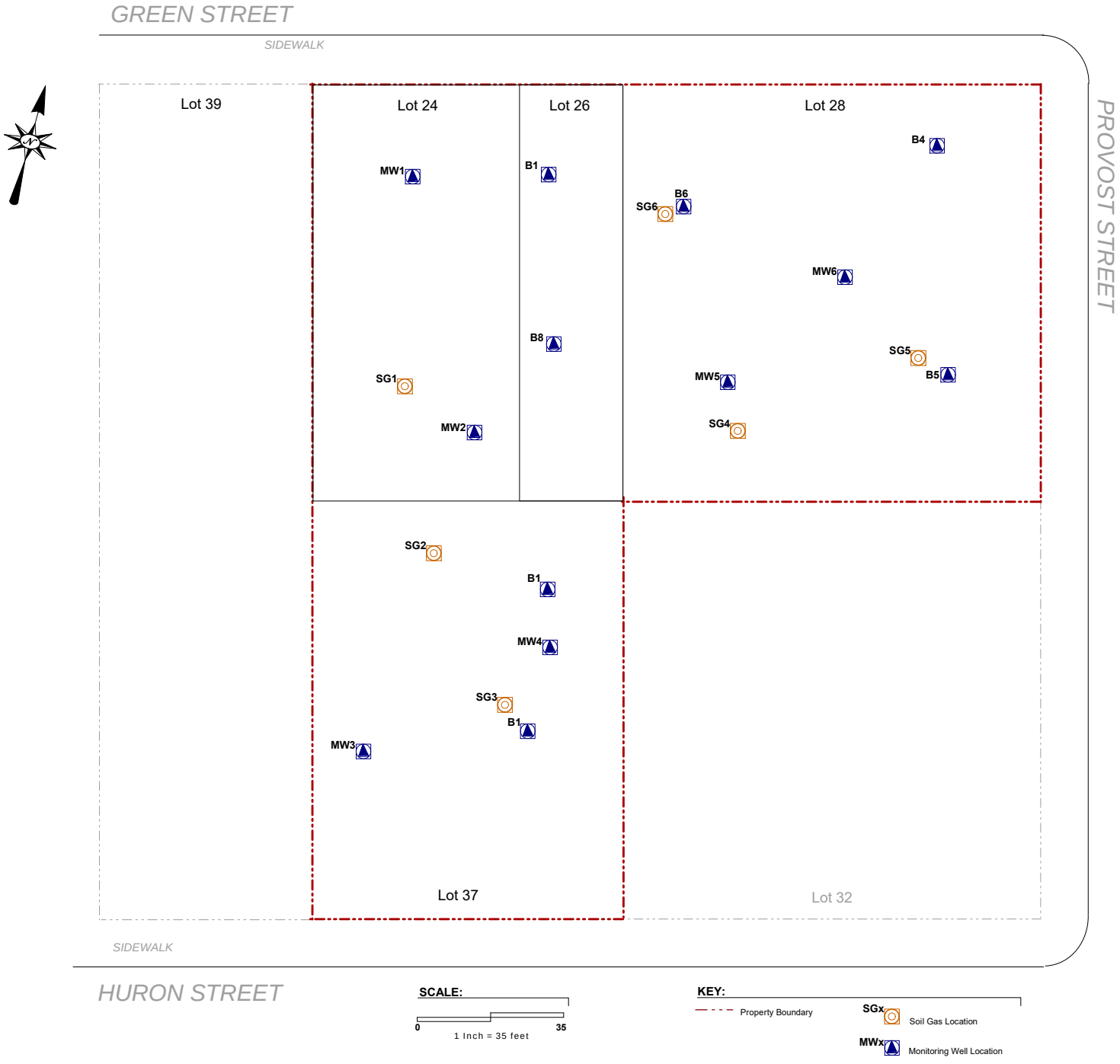
ENVIRONMENTAL BUSINESS CONSULTANTS
Phone 631.504.6000
Fax 631. 924 .2870

Figure No. 4

Site Name: 262 GREEN

Site Address: 262-276 GREEN STREET, & 263 HURON STREET, BROOKLYN, NY

Drawing Title: SOIL BORING LOCATIONS



EBC
ENVIRONMENTAL BUSINESS CONSULTANTS
Phone 631.504.6000
Fax 631. 924 .2870

Figure No. 5

Site Name: 262 GREEN

Site Address: 262-276 GREEN STREET, & 263 HURON STREET, BROOKLYN, NY

Drawing Title: SOIL GAS AND GROUNDWATER SAMPLING LOCATIONS

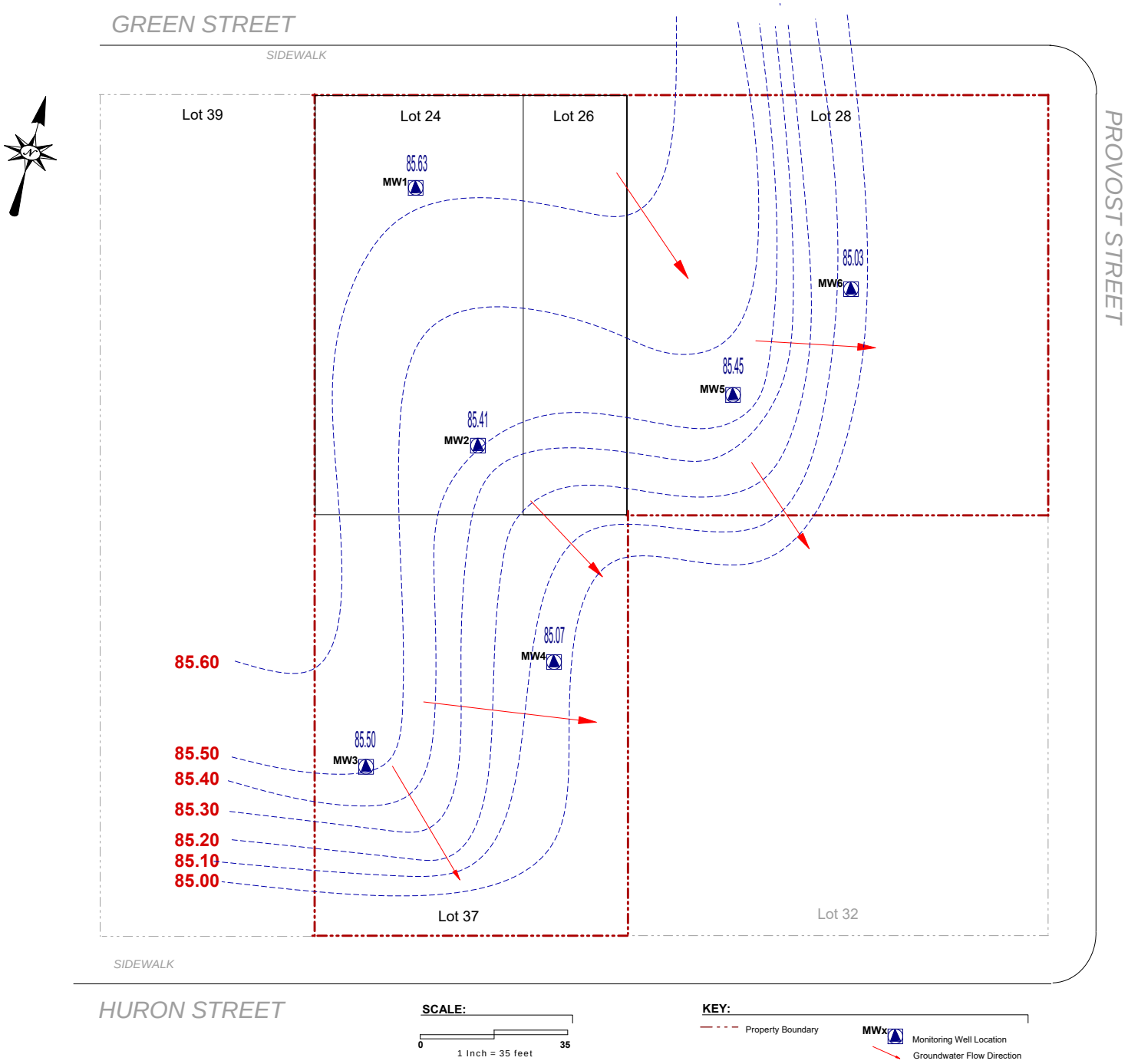


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Figure No. 6

Site Name: 262 GREEN

Site Address: 262-276 GREEN STREET, & 263 HURON STREET, BROOKLYN, NY

Drawing Title: GROUNDWATER ELEVATION MAP

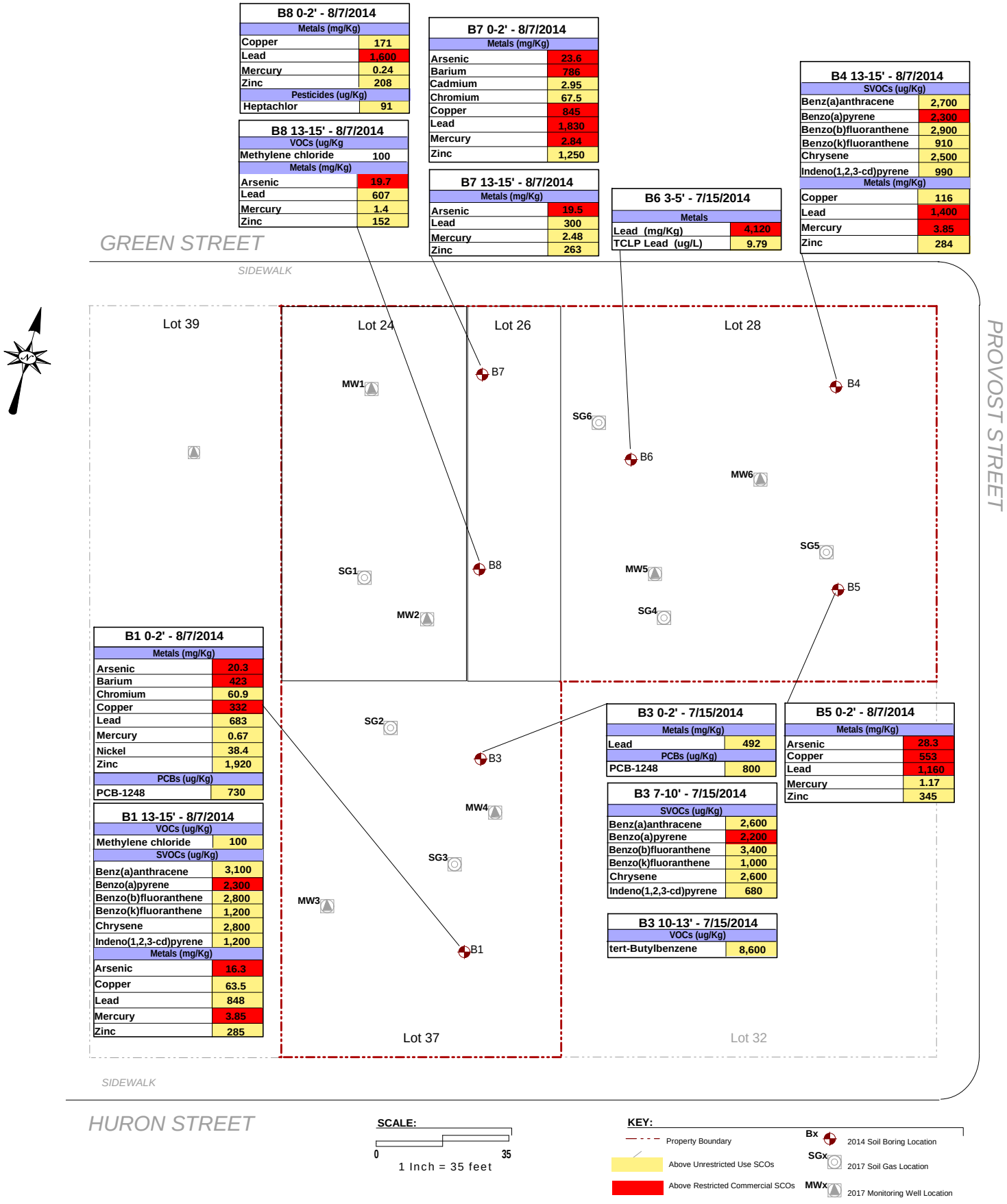

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Figure No. 7

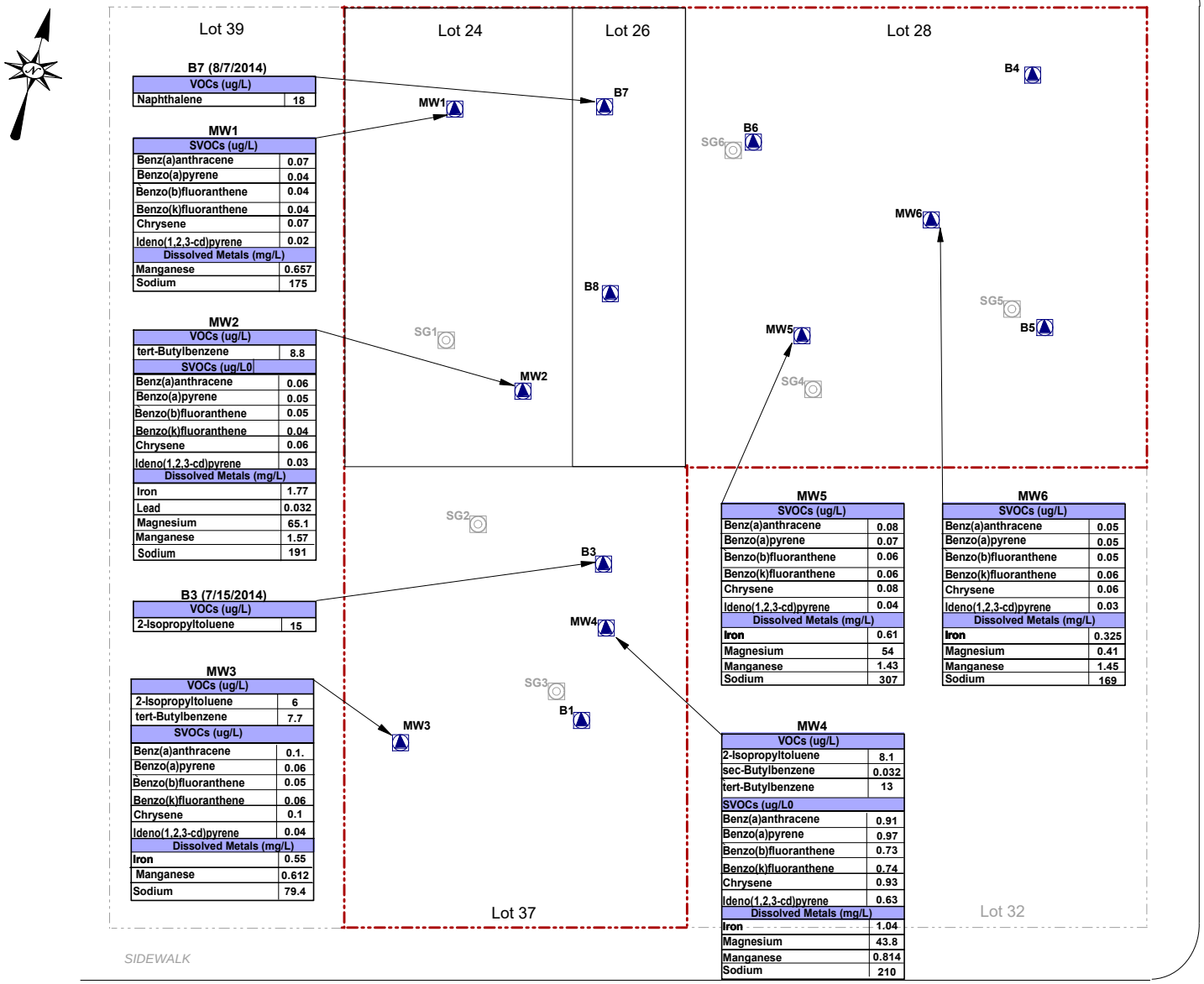
Site Name: 262 GREEN

Site Address: 262-276 GREEN STREET, & 263 HURON STREET, BROOKLYN, NY

Drawing Title: POSTED SOIL RESULTS ABOVE SCOs

GREEN STREET

SIDEWALK



SIDEWALK

PROVOST STREET

HURON STREET

SCALE:

0 — 35

1 Inch = 35 feet

KEY:

Property Boundary

MWx Monitoring Well Location

SGx Soil Gas Location

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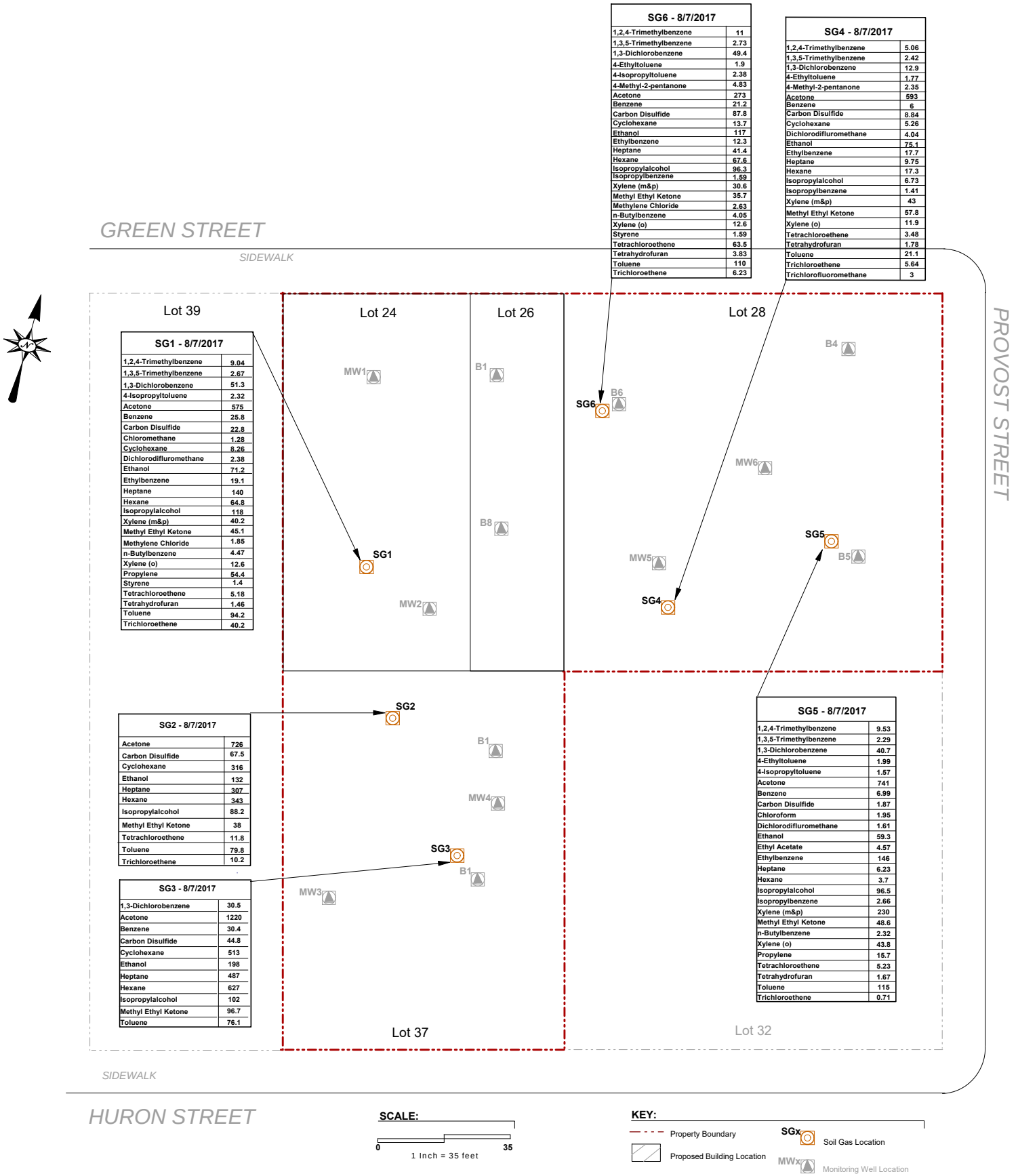
Figure No. 8

Site Name: 262 GREEN

Site Address: 262-276 GREEN STREET, & 263 HURON STREET, BROOKLYN, NY

Drawing Title: POSTED GROUNDWATER RESULTS ABOVE STANDARDS



SG1 - 8/7/2017	
1,2,4-Trimethylbenzene	9.04
1,3,5-Trimethylbenzene	2.67
1,3-Dichlorobenzene	51.3
4-Isopropyltoluene	2.32
Acetone	575
Benzene	25.8
Carbon Disulfide	22.8
Chloromethane	1.28
Cyclohexane	8.26
Dichlorodifluromethane	2.38
Ethanol	71.2
Ethylbenzene	19.1
Heptane	140
Hexane	64.8
Isopropylalcohol	118
Xylene (m&p)	40.2
Methyl Ethyl Ketone	45.1
Methylene Chloride	1.85
n-Butylbenzene	4.47
Xylene (o)	12.6
Propylene	54.4
Styrene	1.4
Tetrachloroethene	5.18
Tetrahydrofuran	1.46
Toluene	94.2
Trichloroethene	40.2

SG2 - 8/7/2017	
Acetone	726
Carbon Disulfide	67.5
Cyclohexane	316
Ethanol	132
Heptane	307
Hexane	343
Isopropylalcohol	88.2
Methyl Ethyl Ketone	38
Tetrachloroethene	11.8
Toluene	79.8
Trichloroethene	10.2

SG3 - 8/7/2017	
1,3-Dichlorobenzene	30.5
Acetone	1220
Benzene	30.4
Carbon Disulfide	44.8
Cyclohexane	513
Ethanol	198
Heptane	487
Hexane	627
Isopropylalcohol	102
Methyl Ethyl Ketone	96.7
Toluene	76.1

SG4 - 8/7/2017	
1,2,4-Trimethylbenzene	5.06
1,3,5-Trimethylbenzene	2.42
1,3-Dichlorobenzene	12.9
4-Ethyltoluene	1.77
4-Methyl-2-pentanone	2.35
Acetone	593
Benzene	6
Carbon Disulfide	8.84
Cyclohexane	5.26
Dichlorodifluromethane	4.04
Ethanol	75.1
Ethylbenzene	17.7
Heptane	9.75
Hexane	17.3
Isopropylalcohol	6.73
Isopropylbenzene	1.41
Xylene (m&p)	43
Methyl Ethyl Ketone	57.8
Xylene (o)	11.9
Tetrachloroethene	3.48
Tetrahydrofuran	1.78
Toluene	21.1
Trichloroethene	5.64
Trichlorofluoromethane	3

SG5 - 8/7/2017	
1,2,4-Trimethylbenzene	9.53
1,3,5-Trimethylbenzene	2.29
1,3-Dichlorobenzene	40.7
4-Ethyltoluene	1.99
4-Isopropyltoluene	1.57
Acetone	741
Benzene	6.99
Carbon Disulfide	1.87
Chloroform	1.95
Dichlorodifluromethane	1.61
Ethanol	59.3
Ethyl Acetate	4.57
Ethylbenzene	146
Heptane	6.23
Hexane	3.7
Isopropylalcohol	96.5
Isopropylbenzene	2.66
Xylene (m&p)	230
Methyl Ethyl Ketone	48.6
n-Butylbenzene	2.32
Xylene (o)	43.8
Propylene	15.7
Tetrachloroethene	5.23
Tetrahydrofuran	1.67
Toluene	115
Trichloroethene	0.71

SG6 - 8/7/2017	
1,2,4-Trimethylbenzene	11
1,3,5-Trimethylbenzene	2.73
1,3-Dichlorobenzene	49.4
4-Ethyltoluene	1.9
4-Isopropyltoluene	2.38
4-Methyl-2-pentanone	4.83
Acetone	273
Benzene	21.2
Carbon Disulfide	87.8
Cyclohexane	13.7
Ethanol	117
Ethylbenzene	12.3
Heptane	41.4
Hexane	67.6
Isopropylalcohol	96.3
Isopropylbenzene	1.59
Xylene (m&p)	30.6
Methyl Ethyl Ketone	35.7
Methylene Chloride	2.63
n-Butylbenzene	4.05
Xylene (o)	12.6
Styrene	1.59
Tetrachloroethene	63.5
Tetrahydrofuran	3.83
Toluene	110
Trichloroethene	6.23

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Figure No. 9

Site Name: 262 GREEN

Site Address: 262-276 GREEN STREET, & 263 HURON STREET, BROOKLYN, NY

Drawing Title: SOIL GAS DETECTIONS

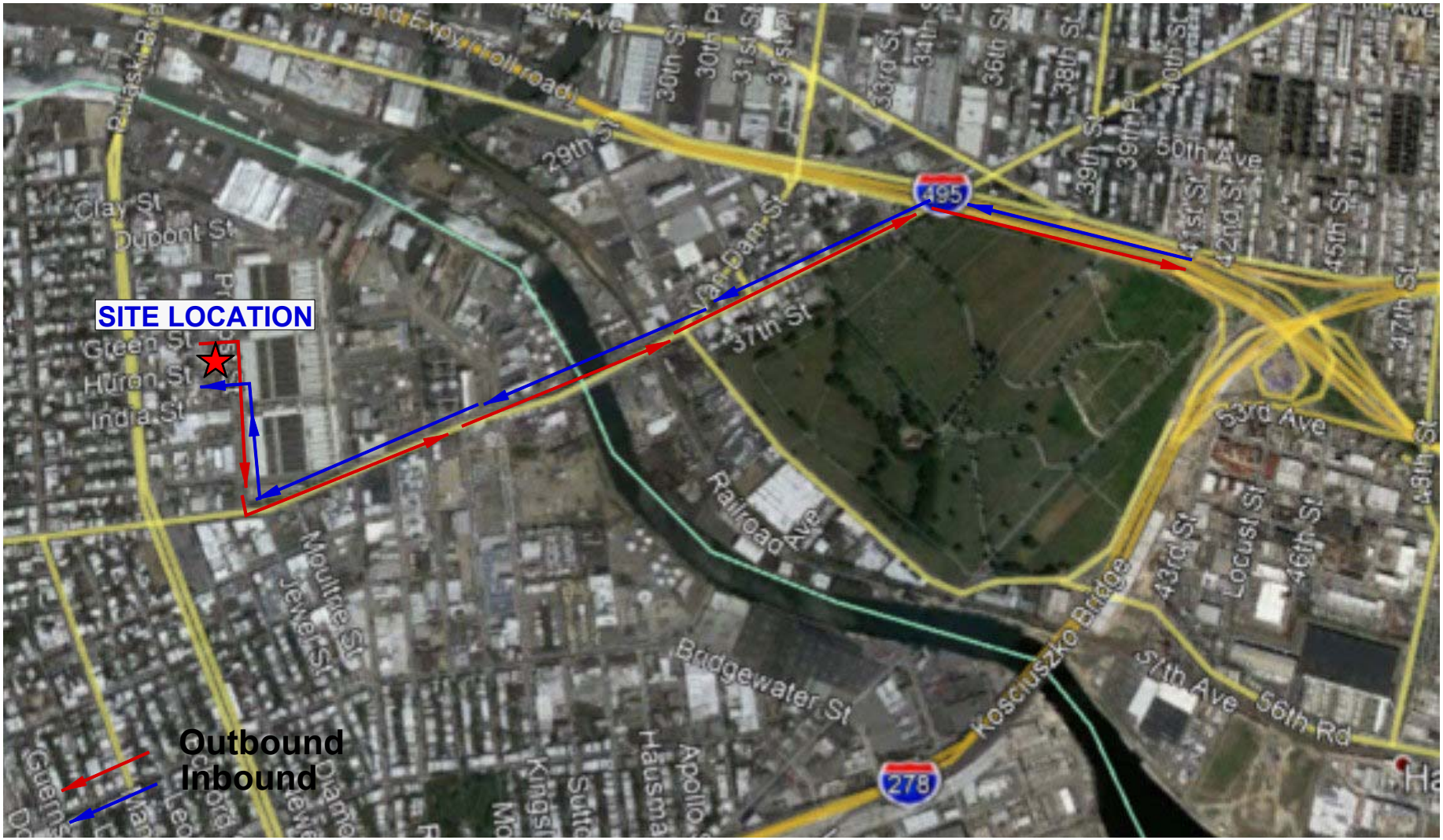

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Figure No. 10

Site Name: 262 GREEN

Site Address: 262-276 GREEN STREET, & 263 HURON STREET, BROOKLYN, NY

Drawing Title: TRUCK ROUTE

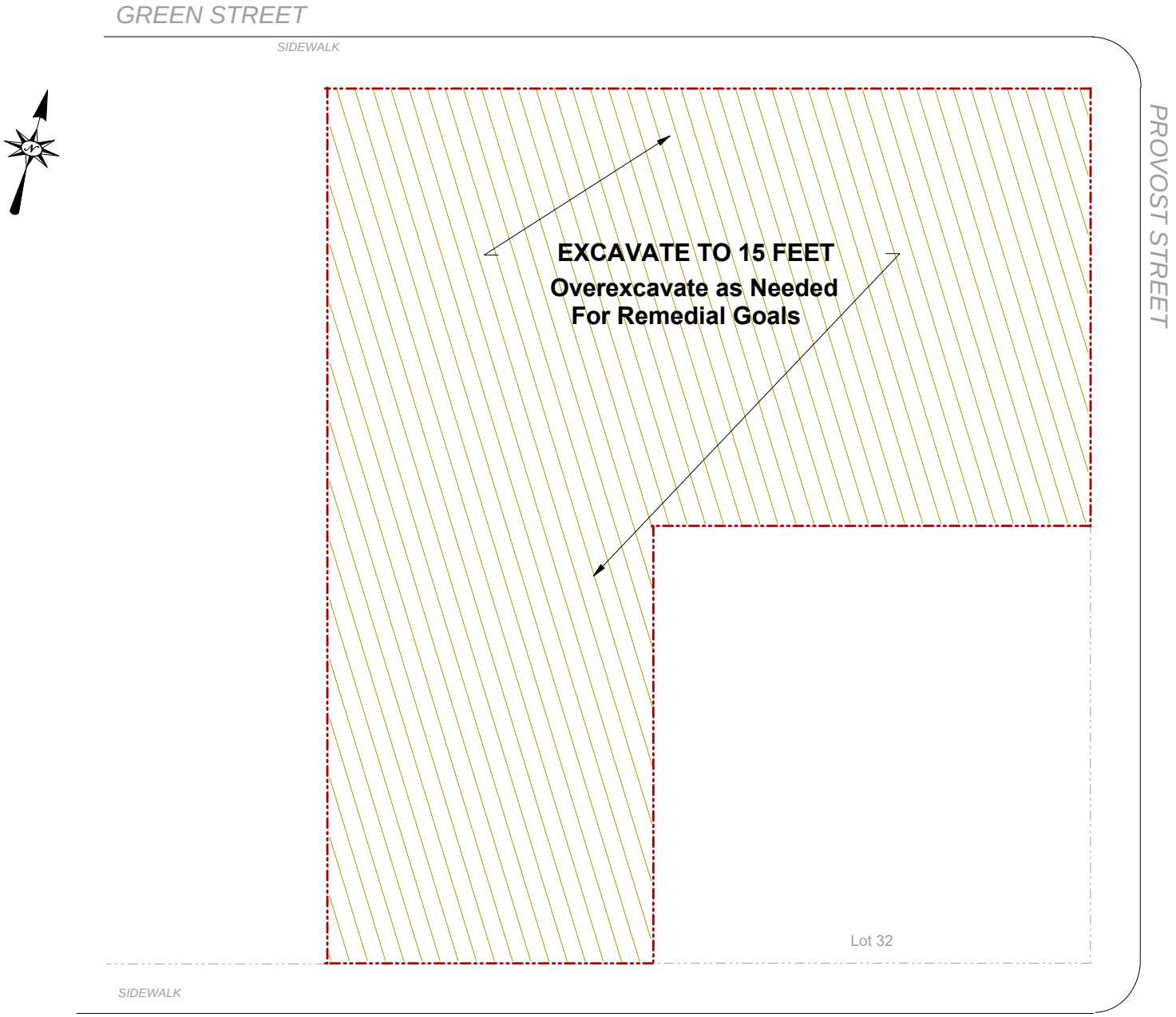

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Figure No. 11

Site Name: 262 GREEN

Site Address: 260-276 GREEN STREET AND 263 HURON STREET, BROOKLYN, NY

Drawing Title: EXCAVATION PLAN

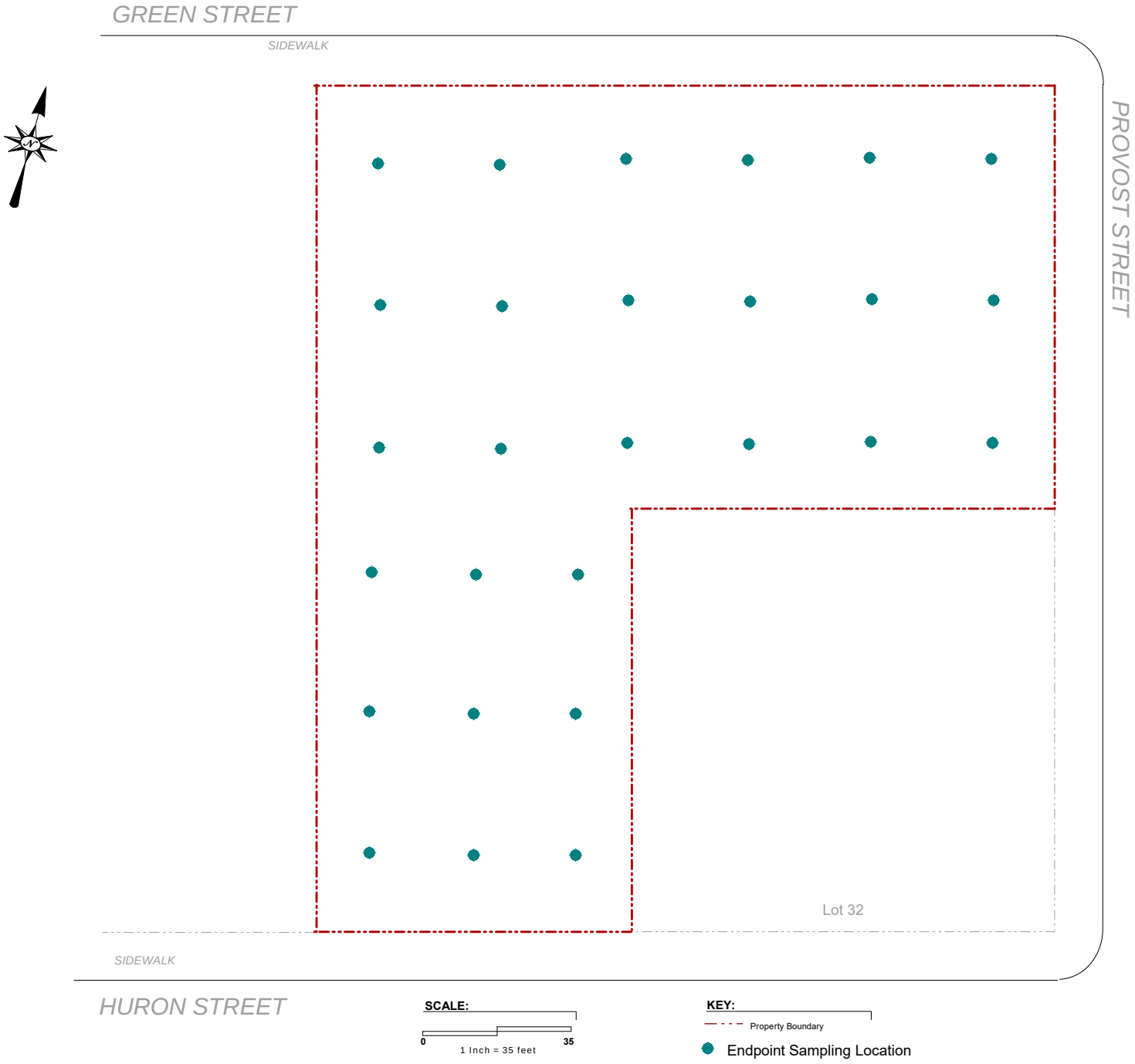

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Figure No. 12

Site Name: 262 GREEN
Site Address: 260-276 GREEN STREET AND 263 HURON STREET, BROOKLYN, NY
Drawing Title: ENDPOINT SAMPLING PLAN

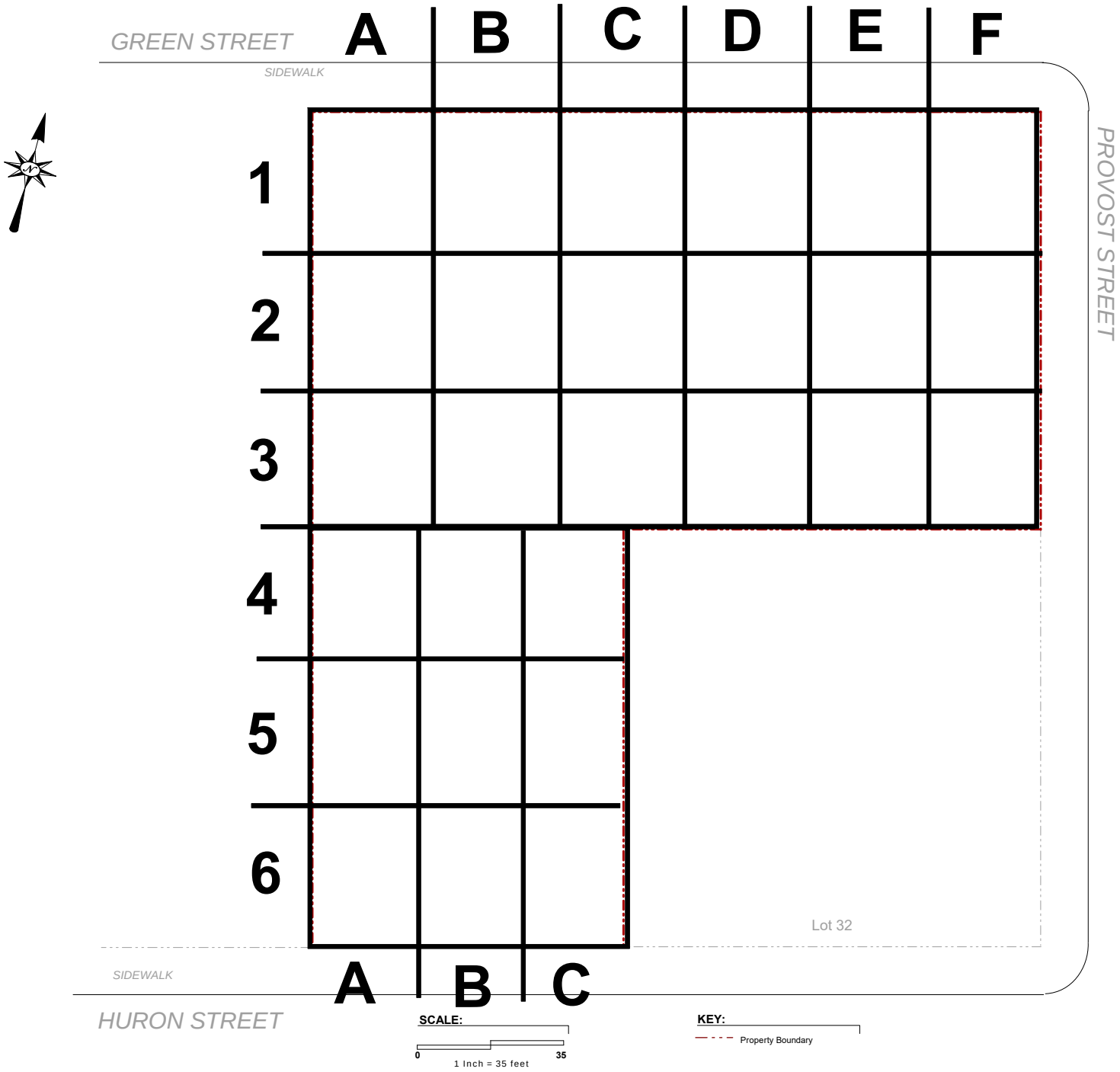

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Figure No. 13

Site Name: 262 GREEN

Site Address: 260-276 GREEN STREET AND 263 HURON STREET, BROOKLYN, NY

Drawing Title: ALPHA NUMERIC GRID

ATTACHMENT A
Metes and Bounds Description of Property

RIVERSIDE ABSTRACT, LLC

as Agent for
Old Republic National Title Insurance Company

SCHEDULE A – DESCRIPTION

Title No.: **RANY-15481**

Parcels I and II:
All that certain plot, piece or parcel of land situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York bounded and described as follows:

BEGINNING at a point on the southerly side of Green Street distant, 100 feet westerly from the corner formed by the intersection of the westerly side of Provost Street with the southerly side of Green Street;

RUNNING THENCE southerly and parallel with Provost Street, 100 feet;

THENCE westerly and parallel with Green Street, 75 feet;

THENCE northerly and again parallel with Provost Street, 100 feet to the southerly side of Green Street;

THENCE easterly along the said southerly side of Green Street, 75 feet to the point or place of BEGINNING.

Note: Address, Block & Lot shown for informational purposes only

Designated as Block 2524, Lots 24 and 26 and also known as 262 Green Street and 266 Green Street, Brooklyn NY.

Parcel III:
All that certain plot, piece or parcel of land situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York bounded and described as follows:

BEGINNING at the corner formed by the intersection of the westerly side of Provost Street and the southerly side of Green Street;

RUNNING THENCE southerly along the westerly side of Provost Street, 100 feet;

THENCE westerly parallel with Green Street, 100 feet;

THENCE northerly parallel with Provost Street, 100 feet to the southerly side of Green Street;

THENCE easterly along the southerly side of Green Street, 100 feet to the corner, the point or place of BEGINNING.

Note: Address, Block & Lot shown for informational purposes only

Designated as Block 2524, Lots 28 and also known as 268 Green Street, Brooklyn NY.

RIVERSIDE ABSTRACT, LLC

as Agent for
Old Republic National Title Insurance Company

SCHEDULE A - DESCRIPTION

Title Number: **RANY-15481**

Parcel IV:
All that certain plot, piece or parcel of land situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York bounded and described as follows:

BEGINNING at a point on the northerly side of Huron Street distant, 100 feet westerly from the northwest corner of Huron Street and Provost Street;

RUNNING THENCE westerly along the northerly side of Huron Street, 50 feet;

THENCE northerly parallel with Provost Street, 100 feet;

THENCE easterly parallel with Huron Street, 50 feet; and

THENCE southerly parallel with Provost Street, 100 feet to the northerly side of Huron Street to the point or place of BEGINNING.

Note: Address, Block & Lot shown for informational purposes only

Designated as Block 2524, Lots 37 and also known as 263 Green Street, Brooklyn NY.

Parcel V:

A metes and bound description to be furnished upon receipt of a guaranteed survey.

Note: Address, Block & Lot shown for informational purposes only

Designated as Block 2524, Lots 39 and also known as 265 Green Street, Brooklyn NY.

ATTACHMENT B
Health and Safety Plan

262 GREEN

262-276 GREEN STREET, AND 263 HURON STREET
BROOKLYN, NEW YORK 11222
Block 2454, Lots 24, 26, 28, and 37

CONSTRUCTION HEALTH AND SAFETY PLAN

AUGUST 2017

Prepared By:

EBC

Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961

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262-276 GREEN STREET AND 263 HURON STREET, BROOKLYN, NY

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CONSTRUCTION HEALTH AND SAFETY PLAN
262-276 GREEN STREET AND 263 HURON STREET, BROOKLYN, NY

FIGURES

APPENDICES

STATEMENT OF COMMITMENT

This Construction Health and Safety Plan (CHASP) has been prepared to ensure that workers are not exposed to risks from hazardous materials during the Remedial Action at 262-276 Green Street and 263 Huron Street, Brooklyn, NY.

This CHASP, which applies to persons present at the Site actually or potentially exposed to hazardous materials, describes emergency response procedures for actual and potential chemical hazards. This CHASP is also intended to inform and guide personnel entering the work area or exclusion zone. Persons are to acknowledge that they understand the potential hazards and the contents of this Health and Safety policy by signing off on receipt of their individual copy of the document. Contractors and suppliers are retained as independent contractors and are responsible for ensuring the health and safety of their own employees.

1.0 INTRODUCTION AND SITE ENTRY REQUIREMENTS

This document describes the health and safety guidelines developed by Environmental Business Consultants (EBC) for the planned Remedial Action at 262-276 Green Street and 263 Huron Street, Brooklyn, NY to protect on-Site personnel, visitors, and the public from physical harm and exposure to hazardous materials or wastes during remedial activities. In accordance with the Occupational Safety and Health Administration (OSHA) 29 CFR Part 1910.120 Hazardous Waste Operations and Emergency Response Final rule, this CHASP, including the attachments, addresses safety and health hazards related to excavation, loading and other soil disturbance activities and is based on the best information available. The CHASP may be revised by EBC at the request of the developer and/or a regulatory agency upon receipt of new information regarding Site conditions. Changes will be documented by written amendments signed by EBC's project manager, Site Safety Officer and/or the EBC Health and Safety Consultant.

1.1 Training Requirements

Personnel entering the exclusion zone or decontamination zone are required to be certified in health and safety practices for hazardous waste Site operations as specified in the Federal OSHA Regulations CFR 1910.120e (revised 3/6/90).

Paragraph (e - 3) of the above referenced regulations requires that all on-Site management personnel directly responsible for or who supervise employees engaged in hazardous waste operations, must initially receive 8 hours of supervisor training related to managing hazardous waste work.

Paragraph (e - 8) of the above referenced regulations requires that workers and supervisors receive 8 hours of refresher training annually on the items specified in Paragraph (e-1) and/or (e-3).

Additionally, all on-Site personnel must receive adequate Site-specific training in the form of an on-Site Health and Safety briefing prior to participating in field work with emphasis on the following:

- Protection of the adjacent community from hazardous vapors and / or dust which may be released during intrusive activities.
- Identification of chemicals known or suspected to be present on-Site and the health effects and hazards of those substances.
- The need for vigilance in personnel protection, and the importance of attention to proper use, fit and care of personnel protective equipment.
- Decontamination procedures.
- Site control including work zones, access and security.
- Hazards and protection against heat or cold.
- The proper observance of daily health and safety practices, such as entry and exit of work zones and Site. Proper hygiene during lunch, break, etc.
- Emergency procedures to be followed in case of fire, explosion and sudden release of hazardous gases.

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Health and Safety meetings will be conducted on a daily basis and will cover protective clothing and other equipment to be used that day, potential and chemical and physical hazards, emergency procedures, and conditions and activities from the previous day.

1.2 Medical Monitoring Requirements

Field personnel and visitors entering the exclusion zone or decontamination zone must have completed appropriate medical monitoring required under OSHA 29 CFR 1910.120(f) if respirators or other breathing related PPE is needed. Medical monitoring enables a physician to monitor each employee's health, physical condition, and his fitness to wear respiratory protective equipment and carry out on-Site tasks.

1.3 Site Safety Plan Acceptance, Acknowledgment and Amendments

The project superintendent and the Site Safety Officer are responsible for informing personnel (EBC employees and/or owner or owners representatives) entering the work area of the contents of this plan and ensuring that each person signs the safety plan acknowledging the on-Site hazards and procedures required to minimize exposure to adverse effects of these hazards. A copy of the Acknowledgement Form is included in **Appendix A**.

Site conditions may warrant an amendment to the CHASP. Amendments to the HASP are acknowledged by completing forms included in **Appendix B**.

1.4 Key Personnel - Roles and Responsibilities

Personnel responsible for implementing this Health and Safety Plan are:

Name	Title	Address	Contact Numbers
Keith Butler	EBC Project Manager	1808 Middle Country Rd Ridge, NY 11961	(631) 504-6000
Mr. Kevin Waters	Site Safety Officer	1808 Middle Country Rd Ridge, NY 11961	(631) 504-6000

The project manager is responsible for overall project administration and, with guidance from the Site Safety Officer, for supervising the implementation of this CHASP. The Site Safety Officer will conduct daily (tail gate or tool box) safety meetings at the project Site and oversee daily safety issues. Each subcontractor and supplier (defined as an OSHA employer) is also responsible for the health and safety of its employees. If there is any dispute about health and safety or project activities, on-Site personnel will attempt to resolve the issue. If the issue cannot be resolved at the Site, then the project manager will be consulted.

The Site Safety Officer is also responsible for coordinating health and safety activities related to hazardous material exposure on-Site. The Site Safety Officer is responsible for the following:

1. Educating personnel about information in this CHASP and other safety requirements to be observed during Site operations, including, but not limited to, decontamination procedures, designation of work zones and levels of protection, air monitoring, fit testing,

and emergency procedures dealing with fire and first aid.
2. Coordinating Site safety decisions with the project manager.
3. Designating exclusion, decontamination and support zones on a daily basis.
4. Monitoring the condition and status of known on-Site hazards and maintaining and implementing the air quality monitoring program specified in this CHASP.
5. Maintaining the work zone entry/exit log and Site entry/exit log.
6. Maintaining records of safety problems, corrective measures and documentation of chemical exposures or physical injuries (the Site Safety Officer will document these conditions in a bound notebook and maintain a copy of the notebook on-Site).

The person who observes safety concerns and potential hazards that have not been addressed in the daily safety meetings should immediately report their observations/concerns to the Site safety officer or appropriate key personnel.

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2.0 SITE BACKGROUND AND SCOPE OF WORK

The Site is located at 262-276 Green Street and 263 Huron Street in the Greenpoint neighborhood of the Borough of Brooklyn. The Site is comprised of four tax parcels identified as Block 2454, Lots 24, 26, 28 and 38 which together comprise of approximately 22,500 square feet (0.57 acres). The Site consists of approximately 175 ft of street frontage along Green Street, 100 feet of frontage on Provost Street and 75 feet of street frontage on Huron Avenue and is bordered by commercial manufacturing / warehouse buildings to the west, north and south, and a wastewater treatment plant to the east.

2.1 Previous Investigations

2.1.1 Remedial Investigation Report (EBC August 2017)

EBC performed the following scope of work at the Site in July 15, 2014 and August 6-15, 2014, and August 1, 2017:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Installed seven soil borings across the Site, and collected fourteen soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. Installed six groundwater monitoring wells throughout the Site and collected thirteen groundwater samples for chemical analysis to evaluate groundwater quality; and
4. Installed six soil gas implants and collected six soil vapor samples for chemical analysis.

A remedial investigation was performed and the results are documented in a companion document called "Remedial Investigation Report, 262 Green", dated August 2017 (RIR):

1. The elevation of the Site is approximately 11 feet above sea level.
2. Depth to groundwater is estimated to be approximately is 10.40 to 11.86 feet below cellar grade.
3. Groundwater flow is generally east.
4. Depth to bedrock at the Site is greater than 100 feet.
5. The stratigraphy of the Site from the surface down consists of historic fill to depths as great as 5 foot underlain by native brown sand.
6. Soil/fill samples results were compared to NYSDEC Unrestricted Use Soil Cleanup Objectives (UUSCOs) and Restricted Residential Soil Cleanup Objectives (RRSCOs) as presented in 6NYCRR Part 375-6.8. One PCB, PCB-1248 (maximum [max.] of 800 µg/kg) was found in two shallow samples exceeding the Unrestricted Residential SCOs. No PCBs were detected above Restricted Residential SCOs. One pesticide, heptachlor, was detected in one shallow sample at a concentration of 91 µg/kg, above the unrestricted use SCO. No pesticides were detected above Restricted Residential SCOs. SVOCs including ben(a)anthracene (at 3,100 µg/kg), benzo(k)fluoranthe (max. of 1,200 µg/kg), chrysene (max. of 2,800 µg/kg), benzo(b)fluoranthene (max. of 3,400 µg/kg), and

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indeno(1,2,3,-cd) pyrene (max. of 1,200 µg/kg) exceeded Unrestricted Residential SCOs. One SVOC, benzo(a)pyrene (max. of 2,300 µg/kg) was found in three soil samples exceeding Restricted Use SCOs. The VOCs methylene chloride (max. of 100 µg/kg) and tert-Butylbenzene (max. of 8,600 µg/kg) were detected in three soil samples at concentrations above Unrestricted Use SCOs. No VOCs were detected above Restricted Use SCOs. Metals including arsenic (max. of 28.3 mg/kg), barium (max. of 786 mg/kg), cadmium (max. of 2.95 mg/kg), chromium (max. of 67.5 mg/kg), copper (max. of 846 mg/kg), lead (max. of 4,120 mg/kg), mercury (max. of 3.85 mg/kg), nickel (max. of 38.4 mg/kg), and zinc (max. of 1,920 mg/kg) exceeded Unrestricted Use SCOs within several of the soil samples. Of these metals, arsenic, barium, copper, lead, and mercury exceeded Residential Restricted SCOs. Overall, the soil results were consistent with data identified at Sites with urban fill material in NYC.

7. Groundwater sample results were compared to New York State 6NYCRR Part 703.5 Class GA groundwater quality standards (GQS). Groundwater samples showed no PCBs or pesticides within in any sample. The VOCs 2-Isopropyltoluene (max. of 15 µg/L), naphthalene (max. of 18 µg/L), tert-Butylbenzene (max. of 13 µg/L), and sec-Butylbenzene (max. of 6.4 µg/L) were identified above their respective GQSs. SVOCs including benz(a)anthracene (max. of 0.91 µg/L), benzo(a)pyrene (max. of 0.97 µg/L), benzo(b)fluoranthene (max. of 0.73 µg/L), benzo(k)fluoranthene (max. of 0.74 µg/L), chrysene (max. of 0.93 µg/L), and indeno(1,2,3-cd)pyrene (max. of 0.63 µg/L) were identified above their respective GQSs in several samples. Several dissolved metals were identified, including aluminum (max. of 0.325 mg/L), iron (max. of 1.77 mg/L), lead (max. of 0.032 mg/L), magnesium (max. of 65.1 mg/L), manganese (max. of 1.57 mg/L), and sodium (max. of 307 mg/L), which exceeded their respective GQSs in multiple groundwater samples.

8. Soil vapor results collected during the RI were compared to the compounds listed in Table 3.1 Air Guidance Values derived by the New York State Department of Health (NYSDOH) located in the NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion, dated October 2006. Total petroleum-related VOCs (BTEX) were generally low in soil vapor samples with the exception of sample locations SG5 (BTEX 541.79 µg/m3). Total BTEX compounds ranged from 79.80 µg/m^3 (SG2) to 191.90 µg/m^3 (SG7) at all other soil vapor locations. Chlorinated VOCs (CVOCs) were reported in all of the soil vapor samples with Trichloroethylene (TCE) reported in 5 of the 6 soil vapor samples, and Tetrachloroethylene (PCE) reported in 5 of the 6 soil vapor samples. Detectable concentrations of TCE ranged in concentration from 0.71 µg/m^3 in SG5 located towards the southern side of the Site to 40.2 µg/m^3 in SG1 located at the northwestern side of the Site towards the adjacent property Lot 105. PCE concentrations ranged from 3.48 µg/m^3 in SG4 located at the southeastern corner of the Site at the intersection of Flushing Avenue and Stewart Avenue to 63.5 µg/m^3 in SG6 located towards the southern side of the Site.

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2.2 Redevelopment Plans

The Requestors intend to redevelop the property with a new 6-story mixed-use commercial retail and office building. One hundred percent of the lot would be excavated to a depth of approximately 15 feet to meet remedial goals and for the cellar level of the proposed building.

2.3 Description of Remedial Action

The proposed remedial action will consist of:

1. Excavation of soil/fill exceeding Track 1 unrestricted use SCOs to depths of 15 feet below grade Site-wide with over excavation as necessary to meet unrestricted use SCOs;
2. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work;
3. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of Track 1 SCOs;
4. 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;
5. Dewatering and treatment of groundwater before discharging to the NYC sewer system under a NYCDEP sewer discharge permit.
6. Import of materials to be used for backfill and cover in compliance with: (1) chemical limits and other specifications, (2) all Federal, State and local rules and regulations for handling and transport of material.
7. If a Track 1 cleanup is not achieved, an Environmental Easement will be filed against the Site to limit use of the Site to Restricted Commercial.
8. If a Track 2 cleanup is not achieved, a Site Management Plan will be prepared to maintain a Site cover system.

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3.0 HAZARD ASSESSMENT

This section identifies the hazards associated with the proposed scope of work, general physical hazards that can be expected at most Sites; and presents a summary of documented or potential chemical hazards at the Site. Every effort must be made to reduce or eliminate these hazards. Those that cannot be eliminated must be guarded against using engineering controls and/or personal protective equipment.

3.1 Physical Hazards

3.1.1 Tripping Hazards

An area of risk associated with on-Site activities are presented by uneven ground, concrete, curbstones or equipment which may be present at the Site thereby creating a potential tripping hazard. During intrusive work, care should be taken to mark or remove any obstacles within the exclusion zone.

3.1.2 Climbing Hazards

During Site activities, workers may have to work on excavating equipment by climbing. The excavating contractor will conform with any applicable NIOSH and OSHA requirements or climbing activities.

3.1.3 Cuts and Lacerations

Field activities that involve excavating activities usually involve contact with various types of machinery. A first aid kit approved by the American Red Cross will be available during all intrusive activities.

3.1.4 Lifting Hazards

Improper lifting by workers is one of the leading causes of industrial injuries. Field workers in the excavation program may be required to lift heavy objects. Therefore, all members of the field crew should be trained in the proper methods of lifting heavy objects. All workers should be cautioned against lifting objects too heavy for one person.

3.1.5 Utility Hazards

Before conducting any excavation, the excavation contractor will be responsible for locating and verifying all existing utilities at each excavation.

3.1.6 Traffic Hazards

All traffic, vehicular and pedestrian, shall be maintained and protected at all times consistent with local, state and federal agency regulations regarding such traffic and in accordance with NYCDOT guidelines. The excavation contractor shall carry on his operations without undue interference or delays to traffic. The excavation contractor shall furnish all labor, materials, guards, barricades, signs, lights, and anything else necessary to maintain traffic and to protect his work and the public, during operations.

3.2 Work in Extreme Temperatures

Work under extremely hot or cold weather conditions requires special protocols to minimize the chance that employees will be affected by heat or cold stress.

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Environmental Business Consultants
1808 Middle Country Road
Ridge, NY 11961
Phone 631.504.6000
Fax 631.924.2870

3.2.1 Heat Stress

The combination of high ambient temperature, high humidity, physical exertion, and personal protective apparel, which limits the dissipation of body heat and moisture, can cause heat stress.

The following prevention, recognition and treatment strategies will be implemented to protect personnel from heat stress. Personnel will be trained to recognize the symptoms of heat stress and to apply the appropriate treatment.

1. Prevention
    a. Provide plenty of fluids. Available in the support zone will be a 50% solution of fruit punch and water or plain water.
    b. Work in Pairs. Individuals should avoid undertaking any activity alone.
    c. Provide cooling devices. A spray hose and a source of water will be provided to reduce body temperature, cool protective clothing and/or act as a quick-drench shower in case of an exposure incident.
    d. Adjustment of the work schedule. As is practical, the most labor-intensive tasks should be carried out during the coolest part of the day.

2. Recognition and Treatment
    a Heat Rash (or prickly heat):
        Cause: Continuous exposure to hot and humid air, aggravated by chafing clothing.
        Symptoms: Eruption of red pimples around sweat ducts accompanied by intense itching and tingling.
        Treatment: Remove source or irritation and cool skin with water or wet cloths.

    b. Heat Cramps (or heat prostration)
        Cause: Profuse perspiration accompanied by inadequate replenishment of body water and electrolytes.
        Symptoms: Muscular weakness, staggering gait, nausea, dizziness, shallow breathing, pale and clammy skin, approximately normal body temperature.
        Treatment: Perform the following while making arrangement for transport to a medical facility. Remove the worker to a contamination reduction zone. Remove protective clothing. Lie worker down on back in a cool place and raise feet 6 to 12 inches. Keep warm, but loosen all clothing. If conscious, provide sips of salt-water solution, using one teaspoon of salt in 12 ounces of water. Transport to a medical facility.
    c. Heat Stroke
        Cause: Same as heat exhaustion. This is also an extremely serious condition.
        Symptoms: Dry hot skin, dry mouth, dizziness, nausea, headache, rapid pulse.
        Treatment: Cool worker immediately by immersing or spraying with cool water or sponge bare skin after removing protective clothing. Transport to hospital.

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3.2.2 Cold Exposure

Exposure to cold weather, wet conditions and extreme wind-chill factors may result in excessive loss of body heat (hypothermia) and /or frostbite. To guard against cold exposure and to prevent cold injuries, appropriate warm clothing should be worn, warm shelter must be readily available, rest periods should be adjusted as needed, and the physical conditions of on-Site field personnel should be closely monitored. Personnel and supervisors working on-Site will be made aware of the signs and symptoms of frost bite and hypothermia such as shivering, reduced blood pressure, reduced coordination, drowsiness, impaired judgment, fatigue, pupils dilated but reactive to light and numbing of the toes and fingers.

3.3 Chemical Hazards

"Historic fill" materials, present throughout the New York City area typically contain elevated levels of semi-volatile organic compounds and metals. These "contaminants" are not related to a chemical release occurring on the Site, but are inherent in the reworked fill material in the area which contains ash and bits of tar and asphalt. Considering the previous sampling results and the past and present use of the Site, the following compounds are considered for the Site as potential contaminants:

Volatile organic compounds reported to be present at elevated concentrations in soil and groundwater at the Site include the following:

2-Isopropyltoluene	Methylene Chloride	Naphthalene
tert-Butylbenzene	sec-Butylbenzene	

Semi-Volatile organic compounds reported to be present at elevated concentrations in soil and groundwater at the Site include the following:

Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene
Benzo(k)fluoranthene	Indeno(1,2,3-cd)pyrene	Chrysene

Metals reported to be present at elevated concentrations in soil at the Site include the following:

Arsenic	Barium	Cadmium	Chromium	Copper
Lead	Mercury	Nickel	Zinc	

Dissolved metals reported to be present at elevated concentrations in groundwater at the Site include the following:

Aluminum	Iron	Lead
Magnesium	Manganese	Sodium

Pesticides and PCBs reported to be present at elevated concentrations in soil at the Site include the following:

Heptachlor	PCB-1248

The primary routes of exposure to these contaminants are inhalation, ingestion and absorption.

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3.3.1 Respirable Dust

Dust may be generated from vehicular traffic and/or excavation activities. If visible observation detects elevated levels of dust, a program of wetting will be employed by the Site Safety Officer. If elevated dust levels persist, the Site Safety Officer will employ dust monitoring using a particulate monitor (Minirae or equivalent). If monitoring detects concentrations greater than 150 µg/m3 over daily background, the Site Safety Officer will take corrective actions as defined herein, including the use of water for dust suppression and if this is not effective, requiring workers to wear APRs with efficiency particulate air (HEPA) cartridges.

Absorption pathways for dust and direct contact with soils or groundwater will be mitigated with the implementation of latex gloves, hand washing and decontamination exercises when necessary.

3.3.2 Dust Control and Monitoring During Earthwork

Dust generated during excavation activities or other earthwork may contain contaminants identified in soils at the Site. Dust will be controlled by wetting the working surface with water. Calcium chloride may be used if the problem cannot be controlled with water. Air monitoring and dust control techniques are specified in a Site-specific Dust Control Plan (if applicable). Site workers will not be required to wear APR's unless dust concentrations are consistently over 150 $\mu g/m^3$ over Site-specific background in the breathing zone as measured by a dust monitor unless the Site Safety Officer directs workers to wear APRs. The Site Safety Officer will use visible dust as an indicator to implement the dust control plan.

3.3.3 Organic Vapors

Elevated levels of VOCs were detected in both soil and soil vapor samples collected during previous investigations at the Site. Therefore, excavation activities may cause the release of organic vapors to the atmosphere. The Site Safety Officer will periodically monitor organic vapors with a Photoionization Detector (PID) during excavation activities to determine whether organic vapor concentrations exceed action levels shown in Section 5 and/or the Community Air Monitoring Plan.

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4.0 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) shall be selected in accordance with the Site air monitoring program, OSHA 29 CFR 1910.120(c), (g), and 1910.132. Protective equipment shall be NIOSH approved and respiratory protection shall conform to OSHA 29 CFR Part 1910.133 and 1910.134 specifications; head protection shall conform to 1910.135; eye and face protection shall conform to 1910.133; and foot protection shall conform to 1910.136. The only true difference among the levels of protection from D thru B is the addition of the type of respiratory protection. **It is anticipated that work will be performed in Level D PPE.**

4.1 Level D

Level D PPE shall be donned when the atmosphere contains no known hazards and work functions preclude splashes, immersion, or the potential for inhalation of, or contact with, hazardous concentrations of harmful chemicals. Level D PPE consists of:

- standard work uniform, coveralls, or tyvek, as needed;
- steel toe and steel shank work boots;
- hard hat;
- gloves, as needed;
- safety glasses;
- hearing protection;
- equipment replacements are available as needed.

4.2 Level C

Level C PPE shall be donned when the concentrations of measured total organic vapors in the breathing zone exceed background concentrations (using a portable OVA, or equivalent), but are less than 5 ppm. The specifications on the APR filters used must be appropriate for contaminants identified or expected to be encountered. Level C PPE shall be donned when the identified contaminants have adequate warning properties and criteria for using APR have been met. Level C PPE consists of:

- chemical resistant or coated tyvek coveralls;
- steel-toe and steel-shank workboots;
- chemical resistant overboots or disposable boot covers;
- disposable inner gloves (surgical gloves);
- disposable outer gloves;
- full face APR fitted with organic vapor/dust and mist filters or filters appropriate for the identified or expected contaminants;
- hard hat;
- splash shield, as needed; and,
- ankles/wrists taped with duct tape.

The Site Safety Officer will verify if Level C is appropriate by checking organic vapor concentrations using compound and/or class-specific detector tubes.

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The exact PPE ensemble is decided on a Site-by-Site basis by the Site Safety Officer with the intent to provide the most protective and efficient worker PPE.

4.3 Activity-Specific Levels of Personal Protection

The required level of PPE is activity-specific and is based on air monitoring results (Section 4.0) and properties of identified or expected contaminants. **It is expected that Site work will be performed in Level D.** If air monitoring results indicate the necessity to upgrade the level of protection engineering controls (i.e. Facing equipment away from the wind and placing Site personnel upwind of drilling locations, active venting, etc.) will be implemented before requiring the use of respiratory protection.

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5.0 AIR MONITORING AND ACTION LEVELS

29 CFR 1910.120(h) specifies that monitoring shall be performed where there may be a question of employee exposure to hazardous concentrations of hazardous substances in order to assure proper selection of engineering controls, work practices and personal protective equipment so that employees are not exposed to levels which exceed permissible exposure limits, or published exposure levels if there are no permissible exposure limits, for hazardous substances.

5.1 Air Monitoring Requirements

If excavation work is performed, air will be monitored for VOCs with a portable ION Science 3000EX photoionization detector, or the equivalent. If necessary, Lower Explosive Limit (LEL) and oxygen will be monitored with a Combustible Gas Indicator (CGI). If appropriate, fugitive dust will be monitored using a MiniRam Model PDM-3 aerosol monitor. Air will be monitored when any of the following conditions apply:

- initial Site entry;
- during any work where a potential IDLH condition or flammable atmosphere could develop;
- excavation work begins on another portion of the Site;
- contaminants, other than those previously identified, have been discovered;
- each time a different task or activity is initiated;
- during trenching and/or excavation work.

The designated Site Safety Officer will record air monitoring data and ensure that air monitoring instruments are calibrated and maintained in accordance with manufacturer's specifications. Instruments will be zeroed daily and checked for accuracy. Monitoring results will be recorded in a field notebook and will be transferred to instrument reading logs.

5.2 Work Stoppage Responses

The following responses will be initiated whenever one or more of the action levels necessitating a work stoppage are exceeded:

1 The SSO will be consulted immediately
2 All personnel (except as necessary for continued monitoring and contaminant migration, if applicable) will be cleared from the work area (eg from the exclusion zone).
3 Monitoring will be continued until intrusive work resumes.

5.3 Action Levels During Excavation Activities

Instrument readings will be taken in the breathing zone above the excavation pit unless otherwise noted. Each action level is independent of all other action levels in determining responses.

Organic Vapors (PID)	LEL %	Responses
0-1 ppm above background	0%	• Continue excavating • Level D protection • Continue monitoring every 10 minutes

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1-5 ppm Above Background, Sustained Reading	1-10%	• Continue excavating • Go to Level C protection or employ engineering controls • Continue monitoring every 10 minutes
5-25 ppm Above Background, Sustained Reading	10-20%	• Discontinue excavating, unless PID is only action level exceeded. • Level C protection or employ engineering controls • Continue monitoring for organic vapors 200 ft downwind • Continuous monitoring for LEL at excavation pit
>25 ppm Above Background, Sustained Reading	>20%	• Discontinue excavating • Withdraw from area, shut off all engine ignition sources. • Allow pit to vent • Continuous monitoring for organic vapors 200 ft downwind.

Notes: Air monitoring will occur in the breathing zone 30 inches above the excavation pit. Readings may also be taken in the excavation pit but will not be used for action levels.

If action levels for any one of the monitoring parameters are exceeded, the appropriate responses listed in the right hand column should be taken. If instrument readings do not return to acceptable levels after the excavation pit has been vented for a period of greater than one-half hour, a decision will then be made whether or not to seal the pit with suppressant foam.

If, during excavation activities, downwind monitoring PID readings are greater than 5 ppm above background for more than one-half hour, excavation will stop until sustained levels are less then 5 ppm (see Community Air Monitoring Plan).

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6.0 SITE CONTROL

6.1 Work Zones

The primary purpose of Site controls is to establish the perimeter of a hazardous area, to reduce the migration of contaminants into clean areas, and to prevent access or exposure to hazardous materials by unauthorized persons. When operations are to take place involving hazardous materials, the Site Safety Officer will establish an exclusion zone, a decontamination zone, and a support zone. These zones "float" (move around the Site) depending on the tasks being performed on any given day. The Site Safety Officer will outline these locations before work begins and when zones change. The Site Safety Officer records this information in the Site log book.

Due to the dimensions of the Site and the work area, it is expected that an exclusion zone will include the entire fenced area with the exception of the construction entrance area, which will serve as the decontamination zone. A support zone if needed will be located outside of the fenced area. All onSite workers engaged in the excavation of hazardous or contaminated materials must provide evidence of OSHA 24 or 40-hour Hazardous Waste Operations and Emergency Response Operations training to conduct work within the exclusion zone established by the Site Safety Officer. Gross decontamination (as determined by the Site Health and Safety Officer) is conducted in the exclusion zone; all other decontamination is performed in the decontamination zone or trailer.

Protective equipment is removed in the decontamination zone. Disposable protective equipment is stored in receptacles staged in the decontamination zone, and non-disposable equipment is decontaminated. All personnel and equipment exit the exclusion zone through the decontamination zone. If a decontamination trailer is provided the first aid equipment, an eye wash unit, and drinking water are kept in the decontamination trailer.

The support zone is used for vehicle parking, daily safety meetings, and supply storage. Eating, drinking, and smoking are permitted only in the support zone. When a decontamination trailer is not provided, the eye wash unit, first aid equipment, and drinking water are kept at a central location designated by the Site Safety Officer.

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7.0 CONTINGENCY PLAN/EMERGENCY RESPONSE PLAN

Site personnel must be prepared in the event of an emergency. Emergencies can take many forms: illnesses, injuries, chemical exposure, fires, explosions, spills, leaks, releases of harmful contaminants, or sudden changes in the weather.

Emergency telephone numbers and a map to the hospital will be posted in the command post. Site personnel should be familiar with the emergency procedures, and the locations of Site safety, first aid, and communication equipment.

7.1 Emergency Equipment On-Site

Private telephones:	Site personnel.
Two-way radios:	Site personnel where necessary.
Emergency Alarms:	On-Site vehicle horns*.
First aid kits:	On-Site, in vehicles or office.
Fire extinguisher:	On-Site, in office or on equipment.

* Horns: Air horns will be supplied to personnel at the discretion of the project superintendent or Site Safety Officer.

7.2 Emergency Telephone Numbers

General Emergencies	911
New York City Police	911
NYC Health + Hospitals	1-212-263-5800
NYSDEC Spills Division	1-800-457-7362
NYSDEC Hazardous Waste Division	1-718-482-4994
NYCDEP	1-718-699-9811
NYC Department of Health	1-212-788-4711
NYC Fire Department	911
National Response Center	1-800-424-8802
Poison Control	1-212-340-4494
Site Safety Officer	1-631-504-6000
Alternate Site Safety Officer	1-631-504-6000

7.3 Personnel Responsibilities During an Emergency

The project manager is primarily responsible for responding to and correcting any emergency situations. However, in the absence of the project manager, the Site Safety Officer shall act as the project manager's on-Site designee and perform the following tasks:

- Take appropriate measures to protect personnel including: withdrawal from the exclusion zone, evacuate and secure the Site, or upgrade/downgrade the level of protective clothing and respiratory protection;

- Ensure that appropriate federal, state, and local agencies are informed and emergency response plans are coordinated. In the event of fire or explosion, the local fire department

should be summoned immediately. If toxic materials are released to the air, the local authorities should be informed in order to assess the need for evacuation;

- Ensure appropriate decontamination, treatment, or testing for exposed or injured personnel;

- Determine the cause of incidents and make recommendations to prevent recurrence; and,

- Ensure that all required reports have been prepared.

The following key personnel are planned for this project:

- Project Manager — Mr. Keith Butler (631) 504-6000
- Construction Superintendent — To be added
- Site Safety Officer — Mr. Kevin Waters (631) 504-6000

7.4 Medical Emergencies

A person who becomes ill or injured in the exclusion zone will be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination will be completed and first aid administered prior to transport. First aid will be administered while waiting for an ambulance or paramedics. A Field Accident Report (**Appendix D**) must be filled out for any injury.

A person transporting an injured/exposed person to a clinic or hospital for treatment will take the directions to the hospital (**Appendix D**).and information on the chemical(s) to which they may have been exposed (**Appendix C**).

7.5 Fire or Explosion

In the event of a fire or explosion, the local fire department will be summoned immediately. The Site Safety Officer or his designated alternate will advise the fire commander of the location, nature and identification of the hazardous materials on-Site. If it is safe to do so, Site personnel may:

- use fire fighting equipment available on Site; or,
- remove or isolate flammable or other hazardous materials that may contribute to the fire.

7.6 Evacuation Routes

Evacuation routes established by work area locations for each Site will be reviewed prior to commencing Site operations. As the work areas change, the evacuation routes will be altered accordingly, and the new route will be reviewed.

Under extreme emergency conditions, evacuation is to be immediate without regard for equipment. The evacuation signal will be a continuous blast of a vehicle horn, if possible, and/or by verbal/radio communication. When evacuating the Site, personnel will follow these instructions:

- Keep upwind of smoke, vapors, or spill location.

- Exit through the decontamination corridor if possible.

- If evacuation through the decontamination corridor is not possible, personnel should remove contaminated clothing once they are in a safe location and leave it near the exclusion zone or in a safe place.

- The Site Safety Officer will conduct a head count to ensure that all personnel have been evacuated safely. The head count will be correlated to the Site and/or exclusion zone entry/exit log.

- If emergency Site evacuation is necessary, all personnel are to escape the emergency situation and decontaminate to the maximum extent practical.

7.7 Spill Control Procedures

Spills associated with Site activities may be attributed to project equipment and include gasoline, diesel and hydraulic oil. In the event of a leak or a release, Site personnel will inform their supervisor immediately, locate the source of spillage and stop the flow if it can be done safely. A spill containment kit including absorbent pads, booms and/or granulated speedy dry absorbent material will be available to Site personnel to facilitate the immediate recovery of the spilled material. Daily inspections of Site equipment components including hydraulic lines, fuel tanks, etc. will be performed by their respective operators as a preventative measure for equipment leaks and to ensure equipment soundness. In the event of a spill, Site personnel will immediately notify the NYSDEC (1-800-457-7362), and a spill number will be generated.

7.8 Vapor Release Plan

If work zone organic vapor (excluding methane) exceeds 5 ppm, then a downwind reading will be made either 200 feet from the work zone or at the property line, whichever is closer. If readings at this location exceed 5 ppm over background, the work will be stopped.

If 5 ppm of VOCs are recorded over background on a PID at the property line, then an off-Site reading will be taken within 20 feet of the nearest residential or commercial property, whichever is closer. If efforts to mitigate the emission source are unsuccessful for 30 minutes, then the designated Site Safety Officer will:

- Contact the local police;
- Continue to monitor air every 30 minutes, 20 feet from the closest off-Site property. If two successive readings are below 5 ppm (non-methane), off-Site air monitoring will be halted; and
- All property line and off-Site air monitoring locations and results associated with vapor releases will be recorded in the Site safety log book.

APPENDIX A

SITE SAFETY ACKNOWLEDGEMENT FORM

DAILY BREIFING SIGN-IN SHEET

Date:_____ Person Conducting Briefing:_____

Project Name and Location:_____

1. AWARENESS (topics discussed, special safety concerns, recent incidents, etc…):

_____

_____

_____

_____

2. OTHER ISSUES (HASP changes, attendee comments, etc…):

_____

_____

_____

3. ATTENDEES (Print Name):

1.	11.
2.	12.
3.	13.
4.	14.
5.	15.
6.	16.
7.	17.
8.	18.
9.	19.
10.	20.

APPENDIX B

SITE SAFETY PLAN AMENDMENTS

SITE SAFETY PLAN AMENDMENT FORM

Site Safety Plan Amendment #: _____

Site Name: _____

Reason for Amendment: _____

_____

_____

_____

Alternative Procedures: _____

_____

_____

_____

Required Changes in PPE: _____

_____

_____

_____

_____ _____

Project Superintendent (signature) **Date**

_____ _____

Health and Safety Consultant (signature) **Date**

_____ _____

Site Safety Officer (signature) **Date**

APPENDIX C

CHEMICAL HAZARDS

CHEMICAL HAZARDS

The attached International Chemical Safety Cards are provided for contaminants of concern that have been identified in soils and/or groundwater at the site.

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International Chemical Safety Cards

DICHLOROMETHANE

ICSC: 0058

Methylene chloride
DCM
CH_2Cl_2
Molecular mass: 84.9

ICSC # 0058
CAS # 75-09-2
RTECS # PA8050000
UN # 1593
EC # 602-004-00-3
December 04, 2000 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Risk of fire and explosion (see Chemical Dangers).	Prevent build-up of electrostatic charges (e.g., by grounding).	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS! STRICT HYGIENE!	
•INHALATION	Dizziness. Drowsiness. Headache. Nausea. Weakness. Unconsciousness. Death.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Dry skin. Redness. Burning sensation.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain. Severe deep burns.	Safety goggles , face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Do NOT induce vomiting. Give plenty of water to drink. Rest.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: filter respirator for organic gases and vapours. Do NOT let this chemical enter the environment. Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place.	Separated from metals (see Chemical Dangers), food and feedstuffs . Cool. Ventilation along the floor.	Do not transport with food and feedstuffs. Xn symbol R: 40 S: (2-)23-24/25-36/37 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0058

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

DICHLOROMETHANE

ICSC: 0058

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS:
The vapour is heavier than air. As a result of flow, agitation, etc., electrostatic charges can be generated.

CHEMICAL DANGERS:
On contact with hot surfaces or flames this substance decomposes forming toxic and corrosive fumes. Reacts violently with metals such as aluminium powder and magnesium powder, strong bases and strong oxidants causing fire and explosion hazard. Attacks some forms of plastic rubber and coatings.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 50 ppm as TWA; A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued; (ACGIH 2004).
MAK:
Carcinogen category: 3A;
(DFG 2004).
OSHA PEL: 1910.1052 TWA 25 ppm ST 125 ppm
NIOSH REL: Ca See Appendix A
NIOSH IDLH: Ca 2300 ppm See: 75092

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes , the skin and the respiratory tract . Exposure could cause lowering of consciousness. Exposure could cause the formation of methaemoglobin.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the central nervous system and liver . This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 40°C
Melting point: -95.1°C
Relative density (water = 1): 1.3
Solubility in water, g/100 ml at 20°C: 1.3
Vapour pressure, kPa at 20°C: 47.4
Relative vapour density (air = 1): 2.9
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.9
Auto-ignition temperature: 556°C
Explosive limits, vol% in air: 12-25
Octanol/water partition coefficient as log Pow: 1.25

ENVIRONMENTAL DATA

This substance may be hazardous in the environment; special attention should be given to ground water contamination.

NOTES

Addition of small amounts of a flammable substance or an increase in the oxygen content of the air strongly enhances combustibility. Depending on the degree of exposure, periodic medical examination is suggested. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. R30 is a trade name. Card has been partly updated in April 2005. See section Occupational Exposure Limits.

Transport Emergency Card: TEC (R)-61S1593

NFPA Code: H2; F1; R0;

ADDITIONAL INFORMATION

ICSC: 0058 **DICHLOROMETHANE**

IMPORTANT LEGAL NOTICE:

	modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

SIGMA-ALDRICH

Material Safety Data Sheet

Version 3.0
Revision Date 08/21/2009
Print Date 12/07/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : *tert*-Butylbenzene

Product Number : B90602
Brand : Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 2-Methyl-2-phenylpropane

Formula : $C_{10}H_{14}$
Molecular Weight : 134.22 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
tert-Butylbenzene			
98-06-6	202-632-4	-	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable Liquid, Irritant

HMIS Classification
Health Hazard: 2
Flammability: 3
Physical hazards: 0

NFPA Rating
Health Hazard: 2
Fire: 3
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion May be harmful if swallowed.

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	34.0 °C (93.2 °F) - closed cup
Ignition temperature	450 °C (842 °F)

Suitable extinguishing media
For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear
Colour	colourless

Safety data

pH	no data available
Melting point	-58 °C (-72 °F) - lit.
Boiling point	169 °C (336 °F) - lit.
Flash point	34.0 °C (93.2 °F) - closed cup
Ignition temperature	450 °C (842 °F)
Lower explosion limit	0.8 %(V)
Density	0.867 g/mL at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 3.80

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Conditions to avoid
Heat, flames and sparks.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

Hazardous reactions
Vapours may form explosive mixture with air.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 3,045 mg/kg
Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Tremor. Gastrointestinal:Changes in structure or function of salivary glands.

Irritation and corrosion

no data available

Sensitisation

no data available

Chronic exposure

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	May be harmful if swallowed.

Additional Information
RTECS: CY9120000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish	LC0 - Leuciscus idus (Golden orfe) - 44 mg/l - 48 h
	LC50 - Leuciscus idus (Golden orfe) - 65 mg/l - 48 h
Toxicity to daphnia and other aquatic	LC50 - Daphnia magna (Water flea) - 41 mg/l - 24 h

invertebrates.

Further information on ecology

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2709 Class: 3 Packing group: III
Proper shipping name: Butyl benzenes
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2709 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: BUTYLBENZENES
Marine pollutant: No

IATA
UN-Number: 2709 Class: 3 Packing group: III
Proper shipping name: Butylbenzenes

15. REGULATORY INFORMATION

OSHA Hazards
Flammable Liquid, Irritant

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
tert-Butylbenzene	98-06-6	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
tert-Butylbenzene	98-06-6	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
tert-Butylbenzene	98-06-6	1993-04-24

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

BENZ(a)ANTHRACENE

ICSC: 0385

1,2-Benzoanthracene
Benzo(a)anthracene
2,3-Benzphenanthrene
Naphthanthracene
$C_{18}H_{12}$
Molecular mass: 228.3

ICSC # 0385
CAS # 56-55-3
RTECS # CV9275000
EC # 601-033-00-9
October 23, 1995 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.		Water spray, powder. In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: complete protective clothing including self-contained breathing apparatus.	Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0385

International Chemical Safety Cards

BENZ(a)ANTHRACENE

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO YELLOW BROWN FLUORESCENT FLAKES OR POWDER.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:

OCCUPATIONAL EXPOSURE LIMITS:
TLV: A2 (suspected human carcinogen); (ACGIH 2004).
MAK:
Carcinogen category: 2 (as pyrolysis product of organic materials)
(DFG 2005).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is probably carcinogenic to humans.

PHYSICAL PROPERTIES

Sublimation point: 435°C
Melting point: 162°C
Relative density (water = 1): 1.274
Solubility in water:
none

Vapour pressure, Pa at 20°C: 292
Octanol/water partition coefficient as log Pow: 5.61

ENVIRONMENTAL DATA

Bioaccumulation of this chemical may occur in seafood.

N O T E S

This substance is one of many polycyclic aromatic hydrocarbons - standards are usually established for them as mixtures, e.g., coal tar pitch volatiles. However, it may be encountered as a laboratory chemical in its pure form. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken. Do NOT take working clothes home. Tetraphene is a common name. Card has been partly updated in October 2005 and August 2006: see sections Occupational Exposure Limits, EU classification.

ADDITIONAL INFORMATION

ICSC: 0385 **BENZ(a)ANTHRACENE**

BENZO(a)PYRENE

ICSC: 0104

Benz(a)pyrene
3,4-Benzopyrene
Benzo(d,e,f)chrysene
$C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0104
CAS # 50-32-8
RTECS # DJ3675000
EC # 601-032-00-3
October 17, 2005 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray, foam, powder, carbon dioxide.
EXPLOSION			
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	AVOID ALL CONTACT! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants.	T symbol N symbol R: 45-46-60-61-43-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0104

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

BENZO(a)PYRENE

ICSC: 0104

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
PALE-YELLOW CRYSTALS

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Reacts with strong oxidants causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: Exposure by all routes should be carefully controlled to levels as low as possible A2 (suspected human carcinogen); (ACGIH 2005).
MAK:
Carcinogen category: 2; Germ cell mutagen group: 2; (DFG 2005).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is carcinogenic to humans. May cause heritable genetic damage to human germ cells. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point: 496°C
Melting point: 178.1°C
Density: 1.4
g/cm³

Solubility in water: none (<0.1 g/100 ml)
Vapour pressure :
negligible
Octanol/water partition coefficient as log Pow: 6.04

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish, in plants and in molluscs. The substance may cause long-term effects in the aquatic environment.

N O T E S

Do NOT take working clothes home. Benzo(a)pyrene is present as a component of polycyclic aromatic hydrocarbons (PAHs) in the environment, usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.

ADDITIONAL INFORMATION

International Chemical Safety Cards

BENZO(b)FLUORANTHENE

ICSC: 0720

Benz(e)acephenanthrylene
2,3-Benzofluoroanthene
Benzo(e)fluoranthene
3,4-Benzofluoranthene
$C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0720
CAS # 205-99-2
RTECS # CU1400000
EC # 601-034-00-4
March 25, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0720

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(b)FLUORANTHENE

ICSC: 0720

I	**PHYSICAL STATE; APPEARANCE:** COLOURLESS CRYSTALS	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation

IMPORTANT DATA	**PHYSICAL DANGERS:** **CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: A2 (suspected human carcinogen); (ACGIH 2004). MAK: Carcinogen category: 2; (DFG 2004).	of its aerosol and through the skin. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** This substance is possibly carcinogenic to humans. May cause genetic damage in humans.
PHYSICAL PROPERTIES	Boiling point: 481°C Melting point: 168°C Solubility in water: none	Octanol/water partition coefficient as log Pow: 6.12
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to air quality and water quality. 	

N O T E S

Benzo(b)fluoranthene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.ACGIH recommends environment containing benzo(b)fluoranthene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m^3. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0720 **BENZO(b)FLUORANTHENE**

International Chemical Safety Cards

BENZO(k)FLUORANTHENE

ICSC: 0721

Dibenzo(b,jk)fluorene
8,9-Benzofluoranthene
11,12-Benzofluoranthene
$C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0721
CAS # 207-08-9
RTECS # DF6350000
EC # 601-036-00-5
March 25, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0721

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(k)FLUORANTHENE

ICSC: 0721

I **M**	**PHYSICAL STATE; APPEARANCE:** YELLOW CRYSTALS	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and through the skin.

P O R T A N T D A T A	**PHYSICAL DANGERS:** **CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK: Carcinogen category: 2; (DFG 2004). **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 480°C Melting point: 217°C Solubility in water: none Octanol/water partition coefficient as log Pow: 6.84
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to air quality and water quality. Bioaccumulation of this chemical may occur in crustacea and in fish. 

N O T E S

Benzo(k)fluoranthene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.ACGIH recommends environment containing benzo(k)fluoranthene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m^3. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0721 **BENZO(k)FLUORANTHENE**

International Chemical Safety Cards

CHRYSENE

ICSC: 1672

Benzoaphenanthrene
1,2-Benzophenanthrene
1,2,5,6-Dibenzonaphthalene
$C_{18}H_{12}$
Molecular mass: 228.3

ICSC # 1672
CAS # 218-01-9
RTECS # GC0700000
UN # 3077
EC # 601-048-00-0
October 12, 2006 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray. Dry powder. Foam. Carbon dioxide.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: P3 filter respirator for toxic particles. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants, Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access.	T symbol N symbol R: 45-68-50/53 S: 53-45-60-61 UN Hazard Class: 9 UN Packing Group: III Signal: Warning Aqua-Cancer Suspected of causing cancer Very toxic to aquatic life with long lasting effects Very toxic to aquatic life

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European

International Chemical Safety Cards

CHRYSENE

ICSC: 1672

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO BEIGE CRYSTALS OR POWDER

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic fumes Reacts violently with strong oxidants

OCCUPATIONAL EXPOSURE LIMITS:
TLV: A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2006).
MAK not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 448°C
Melting point: 254 - 256°C
Density: 1.3 g/cm³

Solubility in water:
very poor
Octanol/water partition coefficient as log Pow: 5.9

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in seafood. It is strongly advised that this substance does not enter the environment.

NOTES

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home. This substance does not usually occur as a pure substance but as a component of polyaromatic hydrocarbon (PAH) mixtures. Human population studies have associated PAH's exposure with cancer and cardiovascular diseases.

Transport Emergency Card: TEC (R)-90GM7-III

ADDITIONAL INFORMATION

International Chemical Safety Cards

INDENO(1,2,3-cd)PYRENE

ICSC: 0730

o-Phenylenepyrene
2,3-Phenylenepyrene
$C_{22}H_{12}$
Molecular mass: 276.3

ICSC # 0730
CAS # 193-39-5
RTECS # NK9300000
March 25, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0730

International Chemical Safety Cards

INDENO(1,2,3-cd)PYRENE

ICSC: 0730

I **M** **P**	**PHYSICAL STATE; APPEARANCE:** YELLOW CRYSTALS **PHYSICAL DANGERS:**	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and through the skin. **INHALATION RISK:**

O R T A N T D A T A	**CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK: Carcinogen category: 2; (DFG 2004).	Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 536°C Melting point: 164°C Solubility in water: none	Octanol/water partition coefficient as log Pow: 6.58
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to air quality and water quality. Bioaccumulation of this chemical may occur in fish. 	

N O T E S

Indeno(1,2,3-cd)pyrene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.ACGIH recommends environment containing Indeno(1,2,3-c,d)pyrene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m^3. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0730 **INDENO(1,2,3-cd)PYRENE**

International Chemical Safety Cards

HEPTACHLOR

ICSC: 0743

1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene
1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene
3,4,5,6,8,8a-Heptachlorodicyclopentadiene
$C_{10}H_5Cl_7$
Molecular mass: 373.3

ICSC # 0743
CAS # 76-44-8
RTECS # PC0700000
UN # 2761
EC # 602-046-00-2
July 05, 2003 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT!	
•INHALATION	Convulsions. Tremor.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! (See Inhalation).	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	(See Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: Chemical protection suit including self-contained breathing apparatus. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Separated from strong oxidants, metals , food and feedstuffs . Well closed. Keep in a well-ventilated room. Dry. Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. Severe marine pollutant. T symbol N symbol R: 24/25-33-40-50/53 S: 1/2-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: II

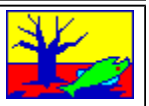
SEE IMPORTANT INFORMATION ON BACK

ICSC: 0743 OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

HEPTACHLOR

ICSC: 0743

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** WHITE CRYSTALS OR TAN WAXY SOLID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on heating above 160°C producing toxic fumes including hydrogen chloride . Reacts with strong oxidants . Attacks metal. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 0.05 mg/m³ as TWA; (skin); A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2004). MAK: 0.05 mg/m³ (Inhalable fraction); Peak limitation category: II(8); skin absorption (H); Carcinogen category: 4; Pregnancy risk group: D (DFG 20089. OSHA PEL: TWA 0.5 mg/m^3 skin NIOSH REL: Ca TWA 0.5 mg/m^3 skin See Appendix A NIOSH IDLH: Ca 35 mg/m^3 See: 76448 **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of dusts from powder concentrates, through the skin and by ingestion. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed, especially if powdered. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance may cause effects on the central nervous system . **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the liver . This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Decomposes below boiling point at 160°C Melting point: 95-96°C Density: 1.6 g/cm³ Solubility in water: none Vapour pressure, Pa at 25°C: 0.053 Octanol/water partition coefficient as log Pow: 5.27-5.44
ENVIRONMENTAL DATA	The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur along the food chain, for example in fish and in milk. The substance may cause long-term effects in the aquatic environment. This substance does enter the environment under normal use. Great care, however, should be given to avoid any additional release, e.g. through inappropriate disposal. 

N O T E S

Other melting points: 46-74°C for the technical product. Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. Depending on the degree of exposure, periodic medical examination is suggested.

Transport Emergency Card: TEC (R)-61GT7-II
Card has been partially updated in October 2005: see Occupational Exposure Limits, Emergency Response.
Card has been partially updated in April 2010: see Occupational Exposure Limits, Storage.

ADDITIONAL INFORMATION

ICSC: 0743 **HEPTACHLOR**

	values.

Material Safety Data Sheet

Version 4.1
Revision Date 01/13/2011
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Aroclor 1248

Product Number : 48589
Brand : Supelco
Product Use : For laboratory research purposes.

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Manufacturer : Sigma-Aldrich Corporation
3050 Spruce St.
St. Louis, Missouri 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Target Organ Effect

Target Organs

LiverLiver

GHS Classification
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P273 Avoid release to the environment.
P501 Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification
Health hazard: 0
Flammability: 0
Physical hazards: 0

NFPA Rating
Health hazard: 0
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS-No.	EC-No.	Index-No.	Concentration
Aroclor 1248			
12672-29-6	-	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	no data available

Safety data

pH	no data available
Melting/freezing point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 11,000 mg/kg

Inhalation LC50
no data available

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Reproductive toxicity - Monkey - Oral
Maternal Effects: Menstrual cycle changes or disorders.
Reproductive toxicity - Monkey - Oral
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).
Reproductive toxicity - Monkey - Oral
Effects on Fertility: Abortion.
Reproductive toxicity - Monkey - Oral

Effects on Newborn: Growth statistics (e.g., reduced weight gain). Effects on Newborn: Behavioral. Effects on Newborn: Other postnatal measures or effects.

no data available

Teratogenicity

Developmental Toxicity - rabbit - Oral
Specific Developmental Abnormalities: Immune and reticuloendothelial system.

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure
Nausea, Dizziness, Headache, muscle pain, muscle weakness, neck stiffness, trunk stiffness, stiffness of extremities, thick feeling in the tongue, Thirst

Synergistic effects
no data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Lepomis macrochirus - 0.278 mg/l - 96.0 h
Toxicity to algae	Growth inhibition EC50 - Thalassiosira rotula - 0.02 mg/l - 44 h

Persistence and degradability
no data available

Bioaccumulative potential

Bioaccumulation	Pimephales promelas (fathead minnow) - 250 d Bioconcentration factor (BCF): 120,000

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid (Aroclor 1248)
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2315 Class: 9 Packing group: II EMS-No: F-A, S-A
Proper shipping name: POLYCHLORINATED BIPHENYLS, LIQUID (Aroclor 1248)
Marine pollutant: Marine pollutant

IATA
UN-Number: 2315 Class: 9 Packing group: II
Proper shipping name: Polychlorinated biphenyls, liquid (Aroclor 1248)

15. REGULATORY INFORMATION

OSHA Hazards
Target Organ Effect

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
Aroclor 1248	12672-29-6

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Aroclor 1248	12672-29-6	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Aroclor 1248	12672-29-6	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Aroclor 1248	12672-29-6	1993-04-24

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. Aroclor 1248	12672-29-6	2008-08-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Aroclor 1248	12672-29-6	2008-08-01

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

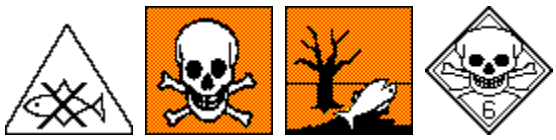
International Chemical Safety Cards

ARSENIC

ICSC: 0013

Grey arsenic
As
Atomic mass: 74.9

ICSC # 0013
CAS # 7440-38-2
RTECS # CG0525000
UN # 1558
EC # 033-001-00-X
October 18, 1999 Peer reviewed



TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames. NO contact with strong oxidizers. NO contact with hot surfaces.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Risk of fire and explosion is slight when exposed to hot surfaces or flames in the form of fine powder or dust.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT! AVOID EXPOSURE OF (PREGNANT) WOMEN!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Cough. Sore throat. Shortness of breath. Weakness. See Ingestion.	Closed system and ventilation.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
•SKIN	Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness.	Face shield or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Diarrhoea. Nausea. Vomiting. Burning sensation in the throat and chest. Shock or collapse. Unconsciousness.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Sweep spilled substance into sealable containers. Carefully collect remainder, then remove to safe place. Chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment.	Separated from strong oxidants, acids, halogens, food and feedstuffs. Well closed.	Do not transport with food and feedstuffs. Marine pollutant. T symbol N symbol R: 23/25-50/53 S: 1/2-20/21-28-45-60-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

International Chemical Safety Cards

ARSENIC

ICSC: 0013

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
ODOURLESS, BRITTLE, GREY, METALLIC-LOOKING CRYSTALS.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Upon heating, toxic fumes are formed. Reacts violently with strong oxidants and halogens, causing fire and explosion hazard. Reacts with acids to produce

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.01 mg/m³ as TWA A1 (confirmed human carcinogen); BEI issued (ACGIH 2004).
MAK:
Carcinogen category: 1; Germ cell mutagen group: 3A; (DFG 2004).
OSHA PEL: 1910.1018 TWA 0.010 mg/m^3
NIOSH REL: Ca C 0.002 mg/m^3 15-minute See Appendix A
NIOSH IDLH: Ca 5 mg/m^3 (as As) See: 7440382

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly, when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the eyes the skin and the respiratory tract. The substance may cause effects on the gastrointestinal tract cardiovascular system central nervous system kidneys , resulting in severe gastroenteritis, loss of fluid, and electrolytes, cardiac disorders shock convulsions and kidney impairment Exposure above the OEL may result in death. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the mucous membranes, skin, peripheral nervous system liver bone marrow , resulting in pigmentation disorders, hyperkeratosis, perforation of nasal septum, neuropathy, liver impairment anaemia This substance is carcinogenic to humans. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Sublimation point: 613°C
Density: 5.7 g/cm^3

Solubility in water:
none

ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. It is strongly advised that this substance does not enter the environment.

N O T E S

The substance is combustible but no flash point is available in literature. Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home. Refer also to cards for specific arsenic compounds, e.g., Arsenic pentoxide (ICSC 0377), Arsenic trichloride (ICSC 0221), Arsenic trioxide (ICSC 0378), Arsine (ICSC 0222).

Transport Emergency Card: TEC (R)-61GT5-II

ADDITIONAL INFORMATION

IMPORTANT LEGAL NOTICE:

International Chemical Safety Cards

BARIUM SULFATE

ICSC: 0827

Barium sulphate
Blanc fixe
Artificial barite
$BaSO_4$
Molecular mass: 233.43

ICSC # 0827
CAS # 7727-43-7
RTECS # CR0600000
October 20, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Personal protection: P1 filter respirator for inert particles.		R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0827

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BARIUM SULFATE

ICSC: 0827

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** ODOURLESS TASTELESS, WHITE OR YELLOWISH CRYSTALS OR POWDER. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** Reacts violently with aluminium powder. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 10 mg/m³ as TWA; (ACGIH 2004). MAK: (Inhalable fraction) 4 mg/m³; (Respirable fraction) 1.5 mg/m³; (DFG 2004). OSHA PEL†: TWA 15 mg/m^3 (total) TWA 5 mg/m^3 (resp) NIOSH REL: TWA 10 mg/m^3 (total) TWA 5 mg/m^3 (resp) NIOSH IDLH: N.D. See: IDLH INDEX **ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol. **INHALATION RISK:** Evaporation at 20°C is negligible; a nuisance-causing concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Lungs may be affected by repeated or prolonged exposure to dust particles , resulting in baritosis (a form of benign pneumoconiosis).
PHYSICAL PROPERTIES	Melting point (decomposes): 1600°C Density: 4.5 g/cm³ Solubility in water: none
ENVIRONMENTAL DATA	

NOTES

Occurs in nature as the mineral barite; also as barytes, heavy spar. Card has been partly updated in October 2005. See section Occupational Exposure Limits.

ADDITIONAL INFORMATION

International Chemical Safety Cards

CADMIUM

ICSC: 0020

Cd
Atomic mass: 112.4

ICSC # 0020
CAS # 7440-43-9
RTECS # EU9800000
UN # 2570
EC # 048-002-00-0
April 22, 2005 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable in powder form and spontaneously combustible in pyrophoric form. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking. NO contact with heat or acid(s).	Dry sand. Special powder. NO other agents.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
•**INHALATION**	Cough. Sore throat.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•**SKIN**		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•**EYES**	Redness. Pain.	Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	Abdominal pain. Diarrhoea. Headache. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Personal protection: chemical protection suit including self-contained breathing apparatus. Remove all ignition sources. Sweep spilled substance into containers. Carefully collect remainder, then remove to safe place.	Fireproof. Dry. Keep under inert gas. Separated from igntion sources, oxidants acids, food and feedstuffs	Airtight. Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs. Note: E T+ symbol N symbol R: 45-26-48/23/25-62-63-68-50/53 S: 53-45-60-61 UN Hazard Class: 6.1

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0020

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

CADMIUM

ICSC: 0020

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
SOFT BLUE-WHITE METAL LUMPS OR GREY POWDER. MALLEABLE. TURNS BRITTLE ON EXPOSURE TO 80°C AND TARNISHES ON EXPOSURE TO MOIST AIR.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
Reacts with acids forming flammable/explosive gas (hydrogen - see ICSC0001.) Dust reacts with oxidants, hydrogen azide, zinc, selenium or tellurium , causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: (Total dust) 0.01 mg/m³
(Respirable fraction)
0.002 mg/m³ as TWA A2 (suspected human carcinogen); BEI issued (ACGIH 2005).
MAK: skin absorption (H);
Carcinogen category: 1; Germ cell mutagen group: 3A; (DFG 2004).
OSHA PEL*: 1910.1027 TWA 0.005 mg/m^3 *Note: The PEL applies to all Cadmium compounds (as Cd).
NIOSH REL*: Ca See Appendix A *Note: The REL applies to all Cadmium compounds (as Cd).
NIOSH IDLH: Ca 9 mg/m^3 (as Cd) See: IDLH INDEX

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

EFFECTS OF SHORT-TERM EXPOSURE:
The fume is irritating to the respiratory tract Inhalation of fume may cause lung oedema (see Notes). Inhalation of fumes may cause metal fume fever. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Lungs may be affected by repeated or prolonged exposure to dust particles. The substance may have effects on the kidneys , resulting in kidney impairment This substance is carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 765°C
Melting point: 321°C
Density: 8.6
g/cm3

Solubility in water: none
Auto-ignition temperature: (cadmium metal dust) 250°C

ENVIRONMENTAL DATA

N O T E S

Reacts violently with fire extinguishing agents such as water,foam,carbon dioxideand halons. Depending on the degree of exposure, periodic medical examination is indicated. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Do NOT take working clothes home. Cadmium also exists in a pyrophoric form (EC No. 048-011-00-X), which bears the additional EU labelling symbol F, R phrase 17, and S phrases 7/8 and 43. UN numbers and packing group will vary according to the physical form of the substance.

ADDITIONAL INFORMATION

International Chemical Safety Cards

CHROMIUM

ICSC: 0029

Chrome
Cr
Atomic mass: 52.0
(powder)

ICSC # 0029
CAS # 7440-47-3
RTECS # GB4200000
October 27, 2004 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions.	No open flames if in powder form.	In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION		Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough.	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Personal protection: P2 filter respirator for harmful particles.		R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0029

International Chemical Safety Cards

CHROMIUM

ICSC: 0029

I

M

P

PHYSICAL STATE; APPEARANCE:
GREY POWDER

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

ROUTES OF EXPOSURE:

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed.

O R T A N T D A T A	**CHEMICAL DANGERS:** Chromium is a catalytic substance and may cause reaction in contact with many organic and inorganic substances , causing fire and explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: (as Cr metal, Cr(III) compounds) 0.5 mg/m³ as TWA A4 (ACGIH 2004). MAK not established. OSHA PEL*: TWA 1 mg/m^3 See Appendix C *Note: The PEL also applies to insoluble chromium salts. NIOSH REL: TWA 0.5 mg/m^3 See Appendix C NIOSH IDLH: 250 mg/m^3 (as Cr) See: 7440473 **EFFECTS OF SHORT-TERM EXPOSURE:** May cause mechanical irritation tothe eyesandthe respiratory tract. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**
PHYSICAL PROPERTIES	Boiling point: 2642°C Melting point: 1900°C Density: 7.15 g/cm³ Solubility in water: none
ENVIRONMENTAL DATA	

N O T E S

The surface of the chromium particles is oxidized to chromium(III)oxide in air. See ICSC 1531 Chromium(III) oxide.

ADDITIONAL INFORMATION

ICSC: 0029 **CHROMIUM**

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

COPPER

ICSC: 0240

Cu
(powder)

ICSC # 0240
CAS # 7440-50-8
RTECS # GL5325000
September 24, 1993 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Special powder, dry sand, NO other agents.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough. Headache. Shortness of breath. Sore throat.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers. Carefully collect remainder. Then remove to safe place. (Extra personal protection: P2 filter respirator for harmful particles).	Separated from - See Chemical Dangers.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0240

International Chemical Safety Cards

COPPER

ICSC: 0240

I

M

P

PHYSICAL STATE; APPEARANCE:
RED POWDER, TURNS GREEN ON EXPOSURE TO MOIST AIR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

O **R** **T** **A** **N** **T** **D** **A** **T** **A**	Shock-sensitive compounds are formed with acetylenic compounds, ethylene oxides and azides. Reacts with strong oxidants like chlorates, bromates and iodates, causing explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 0.2 mg/m³ fume (ACGIH 1992-1993). TLV (as Cu, dusts & mists): 1 mg/m³ (ACGIH 1992-1993). Intended change 0.1 mg/m³ Inhal., A4 (not classifiable as a human carcinogen); MAK: 0.1 mg/m³ (Inhalable fraction) Peak limitation category: II(2) Pregnancy risk group: D (DFG 2005). OSHA PEL*: TWA 1 mg/m^3 *Note: The PEL also applies to other copper compounds (as Cu) except copper fume. NIOSH REL*: TWA 1 mg/m^3 *Note: The REL also applies to other copper compounds (as Cu) except Copper fume. NIOSH IDLH: 100 mg/m^3 (as Cu) See: 7440508	**EFFECTS OF SHORT-TERM EXPOSURE:** Inhalation of fumes may cause metal fume fever. See Notes. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact may cause skin sensitization.
PHYSICAL PROPERTIES	Boiling point: 2595°C Melting point: 1083°C Relative density (water = 1): 8.9	Solubility in water: none
ENVIRONMENTAL DATA		

N O T E S

The symptoms of metal fume fever do not become manifest until several hours.

ADDITIONAL INFORMATION

ICSC: 0240 **COPPER**

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

LEAD

ICSC: 0052

Lead metal
Plumbum
Pb
Atomic mass: 207.2
(powder)

ICSC # 0052
CAS # 7439-92-1
RTECS # OF7525000
October 08, 2002 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	PREVENT DISPERSION OF DUST! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. Personal protection: P3 filter respirator for toxic particles.	Separated from food and feedstuffs incompatible materials See Chemical Dangers.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0052

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

LEAD

ICSC: 0052

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
BLUISH-WHITE OR SILVERY-GREY SOLID IN VARIOUS FORMS. TURNS TARNISHED ON EXPOSURE TO AIR.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
On heating, toxic fumes are formed. Reacts with oxidants. Reacts with hot concentrated nitric acid, boiling concentrated hydrochloric acid and sulfuric acid. Attacked by pure water and by weak organic acids in the presence of oxygen.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.05 mg/m³ A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued (ACGIH 2004).
MAK:
Carcinogen category: 3B; Germ cell mutagen group: 3A; (DFG 2004).
EU OEL: as TWA 0.15 mg/m³ (EU 2002).
OSHA PEL*: 1910.1025 TWA 0.050 mg/m^3 See Appendix C *Note: The PEL also applies to other lead compounds (as Pb) -- see Appendix C.
NIOSH REL*: TWA 0.050 mg/m^3 See Appendix C
*Note: The REL also applies to other lead compounds (as Pb) -- see Appendix C.
NIOSH IDLH: 100 mg/m^3 (as Pb) See: 7439921

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the blood bone marrow central nervous system peripheral nervous system kidneys , resulting in anaemia, encephalopathy (e.g., convulsions), peripheral nerve disease, abdominal cramps and kidney impairment. Causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES		
	Boiling point: 1740°C	Density: 11.34 g/cm3
	Melting point: 327.5°C	Solubility in water: none

ENVIRONMENTAL DATA	
	Bioaccumulation of this chemical may occur in plants and in mammals. It is strongly advised that this substance does not enter the environment. 

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-51S1872

ADDITIONAL INFORMATION

ICSC: 0052 **LEAD**

International Chemical Safety Cards

MERCURY

ICSC: 0056

Quicksilver
Liquid silver
Hg
Atomic mass: 200.6

ICSC # 0056
CAS # 7439-97-6
RTECS # OV4550000
UN # 2809
EC # 080-001-00-0
April 22, 2004 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Risk of fire and explosion.		In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Abdominal pain. Cough. Diarrhoea. Shortness of breath. Vomiting. Fever or elevated body temperature.	Local exhaust or breathing protection.	Fresh air, rest. Artificial respiration if indicated. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area in case of a large spill! Consult an expert! Ventilation. Collect leaking and spilled liquid in sealable non-metallic containers as far as possible. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Chemical protection suit including self-contained breathing apparatus.	Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs Well closed.	Special material. Do not transport with food and feedstuffs. T symbol N symbol R: 23-33-50/53 S: 1/2-7-45-60-61 UN Hazard Class: 8 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

International Chemical Safety Cards

MERCURY

ICSC: 0056

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
ODOURLESS, HEAVY AND MOBILE SILVERY LIQUID METAL.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Upon heating, toxic fumes are formed. Reacts violently with ammonia and halogens causing fire and explosion hazard. Attacks aluminium and many other metals forming amalgams.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.025 mg/m³ as TWA (skin) A4 BEI issued (ACGIH 2004).
MAK: 0.1 mg/m³ Sh
Peak limitation category: II(8) Carcinogen category: 3B (DFG 2003).
OSHA PEL†: C 0.1 mg/m^3
NIOSH REL: Hg Vapor: TWA 0.05 mg/m^3 skin
Other: C 0.1 mg/m^3 skin
NIOSH IDLH: 10 mg/m^3 (as Hg) See: 7439976

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour and through the skin , also as a vapour!

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the skin. Inhalation of the vapours may cause pneumonitis. The substance may cause effects on the central nervous systemandkidneys. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the central nervous system kidneys , resulting in irritability, emotional instability, tremor, mental and memory disturbances, speech disorders. Danger of cumulative effects. Animal tests show that this substance possibly causes toxic effects upon human reproduction.

PHYSICAL PROPERTIES

Boiling point: 357°C
Melting point: -39°C
Relative density (water = 1): 13.5
Solubility in water:
none

Vapour pressure, Pa at 20°C: 0.26
Relative vapour density (air = 1): 6.93
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.009

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. In the food chain important to humans, bioaccumulation takes place, specifically in fish.

N O T E S

Depending on the degree of exposure, periodic medical examination is indicated. No odour warning if toxic concentrations are present. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-80GC9-II+III

ADDITIONAL INFORMATION

ICSC: 0056 **MERCURY**

International Chemical Safety Cards

NICKEL

ICSC: 0062

Ni
Atomic mass: 58.7
(powder)

ICSC # 0062
CAS # 7440-02-0
RTECS # QR5950000
EC # 028-002-00-7
October 17, 2001 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable as dust. Toxic fumes may be released in a fire.		Dry sand. NO carbon dioxide. NO water.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT!	
•**INHALATION**	Cough. Shortness of breath.	Local exhaust or breathing protection.	Fresh air, rest.
•**SKIN**		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•**EYES**		Safety spectacles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Vacuum spilled material. Carefully collect remainder, then remove to safe place. Personal protection: P2 filter respirator for harmful particles.	Separated from strong acids.	Xn symbol R: 40-43 S: 2-22-36

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0062

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

NICKEL

ICSC: 0062

I	**PHYSICAL STATE; APPEARANCE:** SILVERY METALLIC SOLID IN VARIOUS FORMS. **PHYSICAL DANGERS:**
	ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation of the dust.

IMPORTANT DATA	Dust explosion possible if in powder or granular form, mixed with air. **CHEMICAL DANGERS:** Reacts violently, in powder form, with titanium powder and potassium perchlorate, and oxidants such as ammonium nitrate, causing fire and explosion hazard. Reacts slowly with non-oxidizing acids and more rapidly with oxidizing acids. Toxic gases and vapours (such as nickel carbonyl) may be released in a fire involving nickel. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: (Inhalable fraction) 1.5 mg/m³ as TWA A5 (not suspected as a human carcinogen); (ACGIH 2004). MAK: (Inhalable fraction) sensitization of respiratory tract and skin (Sah); Carcinogen category: 1; (DFG 2004). OSHA PEL*†: TWA 1 mg/m^3 *Note: The PEL does not apply to Nickel carbonyl. NIOSH REL*: Ca TWA 0.015 mg/m^3 See Appendix A *Note: The REL does not apply to Nickel carbonyl. NIOSH IDLH: Ca 10 mg/m^3 (as Ni) See: 7440020	**INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed. **EFFECTS OF SHORT-TERM EXPOSURE:** May cause mechanical irritation. Inhalation of fumes may cause pneumonitis. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact may cause skin sensitization. Repeated or prolonged inhalation exposure may cause asthma. Lungs may be affected by repeated or prolonged exposure. This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 2730°C Melting point: 1455°C Density: 8.9 g/cm3	Solubility in water: none
ENVIRONMENTAL DATA		

N O T E S

At high temperatures, nickel oxide fumes will be formed. Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of asthma often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Anyone who has shown symptoms of asthma due to this substance should avoid all further contact with this substance.

ADDITIONAL INFORMATION

ICSC: 0062 **NICKEL**

International Chemical Safety Cards

ZINC POWDER

ICSC: 1205

Blue powder
Merrillite
Zn
Atomic mass: 65.4
(powder)

ICSC # 1205
CAS # 7440-66-6
RTECS # ZG8600000
UN # 1436 (zinc powder or dust)
EC # 030-001-00-1
October 24, 1994 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable. Many reactions may cause fire or explosion. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking. NO contact with acid(s), base (s) and incompatible substances (see Chemical Dangers).	Special powder, dry sand, NO other agents. NO water.
EXPLOSION	Risk of fire and explosion on contact with acid(s), base(s), water and incompatible substances.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding). Prevent deposition of dust.	In case of fire: cool drums, etc., by spraying with water but avoid contact of the substance with water.
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE!	
•**INHALATION**	Metallic taste and metal fume fever. Symptoms may be delayed (see Notes).	Local exhaust.	Fresh air, rest. Refer for medical attention.
•**SKIN**	Dry skin.	Protective gloves.	Rinse and then wash skin with water and soap.
•**EYES**		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Extinguish or remove all ignition sources. Do NOT wash away into sewer. Sweep spilled substance into containers. then remove to safe place. Personal protection: self-contained breathing apparatus.	Fireproof. Separated from acids, bases oxidants Dry.	Airtight. F symbol N symbol R: 15-17-50/53 S: 2-7/8-43-46-60-61 UN Hazard Class: 4.3 UN Subsidiary Risks: 4.2

SEE IMPORTANT INFORMATION ON BACK

International Chemical Safety Cards

ZINC POWDER

ICSC: 1205

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
ODOURLESS GREY TO BLUE POWDER.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.

CHEMICAL DANGERS:
Upon heating, toxic fumes are formed. The substance is a strong reducing agent and reacts violently with oxidants. Reacts with water and reacts violently with acids and bases forming flammable/explosive gas (hydrogen - see ICSC0001) Reacts violently with sulfur, halogenated hydrocarbons and many other substances causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
Inhalation of fumes may cause metal fume fever. The effects may be delayed.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis.

PHYSICAL PROPERTIES

Boiling point: 907°C
Melting point: 419°C
Relative density (water = 1): 7.14
Solubility in water: reaction
Vapour pressure, kPa at 487°C: 0.1
Auto-ignition temperature: 460°C

ENVIRONMENTAL DATA

N O T E S

Zinc may contain trace amounts of arsenic, when forming hydrogen, may also form toxic gas arsine (see ICSC 0001 and ICSC 0222). Reacts violently with fire extinguishing agents such as water, halons, foam and carbon dioxide. The symptoms of metal fume fever do not become manifest until several hours later. Rinse contaminated clothes (fire hazard) with plenty of water.

Transport Emergency Card: TEC (R)-43GWS-II+III
NFPA Code: H0; F1; R1;

ADDITIONAL INFORMATION

ICSC: 1205 **ZINC POWDER**

IMPORTANT LEGAL NOTICE:

APPENDIX D

HOSPITAL INFORMATION AND MAP

FIELD ACCIDENT REPORT

FIELD ACCIDENT REPORT

This report is to be filled out by the designated Site Safety Officer after EVERY accident.

PROJECT NAME _____ PROJECT. NO._____

Date of Accident _____ Time _____ Report By _____

Type of Accident (Check One):

( ) Vehicular ( ) Personal ( ) Property

Name of Injured _____ DOB or Age _____

How Long Employed _____

Names of Witnesses _____

_____

Description of Accident _____

_____

_____

Action Taken _____

_____

_____

Did the Injured Lose Any Time? _____ How Much (Days/Hrs.)? _____

Was Safety Equipment in Use at the Time of the Accident (Hard Hat, Safety Glasses, Gloves, Safety Shoes, etc.)? _____

_____

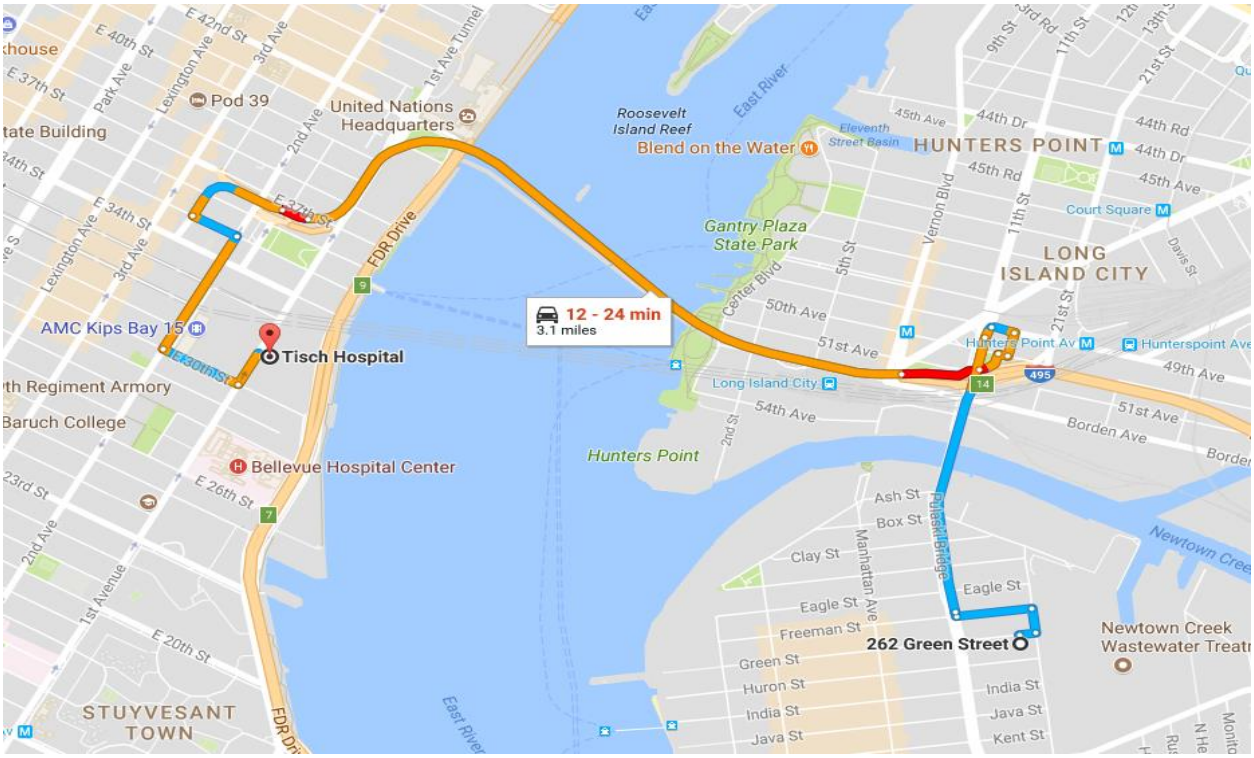
(If not, it is the EMPLOYEE'S sole responsibility to process his/her claim through his/her Health and Welfare Fund.)

INDICATE STREET NAMES, DESCRIPTION OF VEHICLES, AND NORTH ARROW

HOSPITAL INFORMATION AND MAP

The hospital nearest the site is:

Tisch Hospital
550 1st Avenue, New York, NY 10016
212-263-5800
3.3 Miles – About 12 Minutes



262 Green St
Brooklyn, NY 11222

Take Freeman St to McGuinness Blvd

1. Head east on Green St toward Provost St
2. Turn left onto Provost St
3. Turn left onto Freeman St
4. Turn right onto McGuinness Blvd
5. Keep left to continue on Pulaski Bridge
6. Slight right toward 49th Ave
7. Turn right onto 49th Ave
8. Turn right onto 11th Pl
9. Turn right onto 50th Ave
10. Turn left onto the I-495 W ramp
    Toll road
11. Keep left and merge onto I-495 W
    Toll road
12. Continue onto Queens Midtown Tunnel
    Toll road
13. Continue onto I-495 W/Queens Midtown Tunnel
    Toll road
14. Use the left lane to take the exit toward Downtown
    Toll road
15. Turn left onto E 35th St
16. Use any lane to turn right at the 1st cross street onto 2nd Ave
17. Turn left onto E 30th St
18. Use the left 2 lanes to turn left onto 1st Avenue

Tisch Hospital
550 1st Avenue, New York, NY 10016

ATTACHMENT C
Quality Assurance Project Plan

QUALITY ASSURANCE PROJECT PLAN
262 GREEN
262-276 Green Street and 263 Huron Street, Brooklyn, NY

AUGUST 2017

Prepared on behalf of:

270 Green LLC
199 Lee Avenue
Brooklyn, NY 11211

Prepared by:

EBC
ENVIRONMENTAL BUSINESS CONSULTANTS
RIDGE, NY 11961

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QUALITY ASSURANCE PROJECT PLAN

262 GREEN

262-276 Green Street and 263 Huron Street, Brooklyn, NY

TABLES

1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) has been prepared in accordance with DER-10 to detail procedures to be followed during the course of the sampling and analytical portion of the project, as required by the approved work plan.

To ensure the successful completion of the project each individual responsible for a given component of the project must be aware of the quality assurance objectives of his / her particular work and of the overall project. The EBC Project Director, Charles Sosik will be directly responsible to the client for the overall project conduct and quality assurance/quality control (QA/QC) for the project. The Project Director will be responsible for overseeing all technical and administrative aspects of the project and for directing QA/QC activities. Mr. Kevin Brussee will serve as the Quality Assurance Officer (QAO) and in this role may conduct:

- conduct periodic field and sampling audits;
- interface with the analytical laboratory to resolve problems; and
- interface with the data validator and/or the preparer of the DUSR to resolve problems.

Keith Butler will serve as the Project Manager and will be responsible for implementation of the Remedial Investigation and coordination with field sampling crews and subcontractors. Reporting directly to the Project Manager will be the Field Operations Officer, Kevin Waters; who will serve as the on-Site qualified environmental professional who will record observations, direct the field crew and be responsible for the collection and handling of all samples.

1.1 Organization

Project QA will be maintained under the direction of the Project Manager, in accordance with this QAPP. QC for specific tasks will be the responsibility of the individuals and organizations listed below, under the direction and coordination of the Project Manager

.

GENERAL RESPONSIBILITY	SCOPE OF WORK	RESPONSIBILITY OF QUALITY CONTROL
Field Operations	Supervision of Field Crew, sample collection and handling	Kevin Waters, EBC
Project Manager	Implementation of the RI according to the RIWP.	Keith Butler, EBC
Laboratory Analysis	Analysis of soil samples by NYSDEC ASP methods Laboratory	NYSDOH-Certified Laboratory
Data review	Review for completeness and compliance	3rd party validation

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2.0 QUALITY ASSURANCE PROJECT PLAN OBJECTIVES

2.1 Overview

Overall project goals are defined through the development of Data Quality Objectives (DQOs), which are qualitative and quantitative Statements that specify the quality of the data required to support decisions; DQOs, as described in this section, are based on the end uses of the data as described in the work plan.

In this plan, Quality Assurance and Quality Control are defined as follows:

- Quality Assurance - The overall integrated program for assuring reliability of monitoring and measurement data.

- Quality Control - The routine application of procedures for obtaining prescribed standards of performance in the monitoring and measurement process.

2.2 QA / QC Requirements for Analytical Laboratory

Samples will be analyzed by a New York State Department of Health (NYSDOH) certified laboratory. Data generated from the laboratory will be used to evaluate contaminants such as metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total cyanide, mercury, TPH and pesticides / PCBs in both historic fills and native soils and in groundwater and other volatile organic compounds (VOCs) in soil, soil gas. The QA requirements for all subcontracted analytical laboratory work performed on this project are described below. QA elements to be evaluated include accuracy, precision, sensitivity, representativeness, and completeness. The data generated by the analytical laboratory for this project are required to be sensitive enough to achieve detection levels low enough to meet required quantification limits as specified in NYSDEC Analytical Services Protocol (NYSDEC ASP, 07/2005. The analytical results meeting the required quantification limits will provide data sensitive enough to meet the data quality objectives of this remedial program as described in the work plan. Reporting of the data must be clear, concise, and comprehensive. The QC elements that are important to this project are completeness of field data, sample custody, sample holding times, sample preservation, sample storage, instrument calibration and blank contamination.

2.2.1 Instrument Calibration

Calibration curves will be developed for each of the compounds to be analyzed. Standard concentrations and a blank will be used to produce the initial curves. The development of calibration curves and initial calibration response factors must be consistent with method requirements presented in the most recent version of NYSDEC ASP 07/2005).

2.2.2 Continuing Instrument Calibration

The initial calibration curve will be verified every 12 hrs by analyzing one calibration standard. The standard concentration will be the midpoint concentration of the initial calibration curve. The calibration check compound must come within 25% relative percent difference (RPD) of the average response factor obtained during initial calibration. If the RPD is greater than 25%, then corrective action must be taken as provided in the specific methodology.

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2.2.3 Method Blanks

Method blank or preparation blank is prepared from an analyte·free matrix which includes the same reagents, internal standards and surrogate standards as the related samples. This is carried through the entire sample preparation and analytical procedure. A method blank analysis will be performed once for each 12 hr period during the analysis of samples for volatiles. An acceptable method blank will contain less than two (2) times the CRQL of methylene chloride, acetone and 2-butanone. For all other target compounds, the method blank must contain less than or equal to the CRQL of any single target compound. For non-target peaks in the method blank, the peak area must be less than 10 percent of the nearest internal standard. The method blank will be used to demonstrate the level of laboratory background and reagent contamination that might result from the analytical process itself.

2.2.4 Trip Blanks.

Trip blanks consist of a single set of sample containers filled at the laboratory with deionized. laboratory-grade water. The water used will be from the same source as that used for the laboratory method blank. The containers will be carried into the field and handled and transported in the same way as the samples collected that day. Analysis of the trip blank for VOCs is used to identify contamination from the air, shipping containers, or from other items coming in contact with the sample bottles. (The bottles holding the trip blanks will be not opened during this procedure.) A complete set of trip blanks will be provided with each shipment of samples to the certified laboratory.

2.2.5 Surrogate Spike Analysis

For organic analyses, all samples and blanks will be spiked with surrogate compounds before purging or extraction in order to monitor preparation and analyses of samples. Surrogate spike recoveries shall fall within the advisory limits in accordance with the NY5DEC ASP protocols for samples falling within the quantification limits without dilution.

2.2.6 Matrix Spike / Matrix Spike Duplicate / Matrix Spike Blank (MS/MSDIMSB) Analysis

MS, MSD and MSB analyses will be performed to evaluate the matrix effect of the sample upon the analytical methodology along with the precision of the instrument by measuring recoveries. The MS / MSD / MSB samples will be analyzed for each group of samples of a similar matrix at a rate of 5% (one for every 20 field samples). The RPD will be calculated from the difference between the MS and MSD. Matrix spike blank analysis will be performed to indicate the appropriateness of the spiking solution(s) used for the MS/MSD.

2.3 Accuracy

Accuracy is defined as the nearness of a real or the mean (x) of a set of results to the true value. Accuracy is assessed by means of reference samples and percent recoveries. Accuracy includes both precision and recovery and is expressed as percent recovery (% REC). The MS sample is used to determine the percent recovery. The matrix spike percent recovery (% REC) is calculated by the following equation:

$$\%REC = \frac{SSR - SR}{SA} \times 100$$

Where:
SSR = spike sample results

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SR = sample results
SA = spike added from spiking mix

2.4 Precision

Precision is defined as the measurement of agreement of a set of replicate results among themselves without assumption of any prior information as to the true result. Precision is assessed by means of duplicate/replicate sample analyses.

Analytical precision is expressed in terms of RPD. The RPD is calculated using the following formula:

$$RPD = \frac{D^1 - D^2}{(D^1 + D^2)/2} \times 100$$

Where:
RPD = relative percent difference
D^1 = first sample value
D^2 = second sample value (duplicate)

2.5 Sensitivity

The sensitivity objectives for this plan require that data generated by the analytical laboratory achieve quantification levels low enough to meet the required detection limits specified by NYSDEC ASP and to meet all site-specific standards, criteria and guidance values (SGCs) established for this project.

2.6 Representativeness

Representativeness is a measure of the relationship of an individual sample taken from a particular site to the remainder of that site and the relationship of a small aliquot of the sample (i.e., the one used in the actual analysis) to the sample remaining on site. The representativeness of samples is assured by adherence to sampling procedures described in the Remedial Investigation Work Plan.

2.7 Completeness

Completeness is a measure of the quantity of data obtained from a measurement system as compared to the amount of data expected from the measurement system. Completeness is defined as the percentage of all results that are not affected by failing QC qualifiers, and should be between 70 and 100% of all analyses performed. The objective of completeness in laboratory reporting is to provide a thorough data support package. The laboratory data package provides documentation of sample analysis and results in the form of summaries, QC data, and raw analytical data. The laboratory will be required to submit data packages that follow NYSDEC ASP reporting format which, at a minimum, will include the following components:

1. All sample chain-of-custody forms.
2. The case narrative(s) presenting a discussion of any problems and/or procedural changes required during analyses. Also presented in the case narrative are sample summary forms.
3. Documentation demonstrating the laboratory's ability to attain the contract specified detection limits for all target analytes in all required matrices.
4. Tabulated target compound results and tentatively identified compounds.
5. Surrogate spike analysis results (organics).
6. Matrix spike/matrix spike duplicate/matrix spike blank results.
7. QC check sample and standard recovery results

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8. Blank results (field, trip, and method).
9. Internal standard area and RT summary.

2.8 Laboratory Custody Procedures

The following elements are important for maintaining the field custody of samples:

- Sample identification
- Sample labels
- Custody records
- Shipping records
- Packaging procedures

Sample labels will be attached to all sampling bottles before field activities begin; each label will contain an identifying number. Each number will have a suffix that identifies the site and where the sample was taken. Approximate sampling locations will be marked on a map with a description of the sample location. The number, type of sample, and sample identification will be entered into the field logbook. A chain-of-custody form, initiated at the analytical laboratory will accompany the sample bottles from the laboratory into the field. Upon receipt of the bottles and cooler, the sampler will sign and date the first received blank space. After each sample is collected and appropriately identified, entries will be made on the chain-of-custody form that will include:

- Site name and address
- Samplers' names and signatures

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3.0 ANALYTICAL PROCEDURES

3.1 Laboratory Analysis

Samples will be analyzed by the NYSDOH ELAP laboratory for one or more of the following parameters: VOCs + TICs in soil / groundwater by USEPA Method 8260C, SVOCs + TICs in soil / groundwater by USEPA Method 8270D, Target Analyte List (TAL) Metals + Mercury in soil and groundwater (total and dissolved) by EPA Method 6010C/7471B/7472, pesticides / PCBs by USEPA Method 8081B/8082A, TPH by EPA method 8015D, total cyanide EPA Method 9014 or 9012B and VOCs in air by USEPA Method TO15. If any modifications or additions to the standard procedures are anticipated and if any nonstandard sample preparation or analytical protocol is to be used, the modifications and the nonstandard protocol will be explicitly defined and documented. Prior approval by EBC's PM will be necessary for any nonstandard analytical or sample preparation protocol used by the laboratory, i.e., dilution of samples or extracts by greater than a factor of five (5).

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4.0 DATA REDUCTION, REVIEW, AND REPORTING

4.1 Overview

The process of data reduction, review, and reporting ensures the assessments or a conclusion based on the final data accurately reflects actual site conditions. This plan presents the specific procedures, methods, and format that will be employed for data reduction, review and reporting of each measurement parameter determined in the laboratory and field. Also described in this section is the process by which all data, reports, and work plans are proofed and checked for technical and numerical errors prior to final submission.

4.2 Data Reduction

Standard methods and references will be used as guidelines for data handling, reduction, validation, and reporting. All data for the project will be compiled and summarized with an independent verification at each step in the process to prevent transcription/typographical errors. Any computerized entry of data will also undergo verification review.

Sample analysis will be provided by a New York State certified environmental laboratory. Laboratory reports will include ASP category B deliverables for use in the preparation of a data usability summary report (DUSR). All results will be provided in accordance with the NYSDEC Environmental Information Management System (EIMS) electronic data deliverable (EDD) format. Analytical results shall be presented on standard NYSDEC ASP-B forms or equivalents, and include the dates the samples were received and analyzed, and the actual methodology used.

Laboratory QA/QC information required by the method protocols will be compiled, including the application of data QA/QC qualifiers as appropriate. In addition, laboratory worksheets, laboratory notebooks, chains-of-custody, instrument logs, standards records, calibration records, and maintenance records, as applicable, will be provided in the laboratory data packages to determine the validity of data. Specifics on internal laboratory data reduction protocols are identified in the laboratory's SOPs.

Following receipt of the laboratory analytical results by EBC, the data results will be compiled and presented in an appropriate tabular form. Where appropriate, the impacts of QA/QC qualifiers resulting from laboratory or external validation reviews will be assessed in terms of data usability.

4.3 Laboratory Data Reporting

All sample data packages submitted by the analytical laboratory will be required to be reported in conformance to the NYSDEC ASP (7/2005), Category B data deliverable requirements as applicable to the method utilized. All results will be provided in accordance with the NYSDEC Environmental Information Management System (EIMS) electronic data deliverable (EDD) format.

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5.0 CORRECTIVE ACTION

Review and implementation of systems and procedures may result in recommendations for corrective action. Any deviations from the specified procedures within approved project plans due to unexpected site-specific conditions shall warrant corrective action. All errors, deficiencies, or other problems shall be brought to the immediate attention of the EBC PM, who in turn shall contact the Quality Assurance/Data Quality Manager or his designee (if applicable) and the NYSDEC project manager.

Procedures have been established to ensure that conditions adverse to data quality are promptly investigated, evaluated and corrected. These procedures for review and implementation of a change are as follows:

- Define the problem.
- Investigate the cause of the problem.
- Develop a corrective action to eliminate the problem, in consultation with the personnel who defined the problem and who will implement the change.
- Complete the required form describing the change and its rationale (see below for form requirements).
- Obtain all required written approvals.
- Implement the corrective action.
- Verify that the change has eliminated the problem.

During the field investigation, all changes to the sampling program will be documented in field logs/sheets and the EBC PM advised.

If any problems occur with the laboratory or analyses, the laboratory must immediately notify the PM, who will consult with other project staff. All approved corrective actions shall be controlled and documented.

All corrective action documentation shall include an explanation of the problem and a proposed solution which will be maintained in the project file or associated logs. Each report must be approved by the necessary personnel (e.g., the PM) before implementation of the change occurs. The PM shall be responsible for controlling, tracking, implementing and distributing identified changes.

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TABLE 1
SUMMARY OF
SAMPLING PROGRAM RATIONALE AND ANALYSIS

Matrix	Location	Approximate Number of Samples	Frequency	Rationale for Sampling	Laboratory Analysis	Duplicates	Matrix Spikes	Spike Duplicates	Trip Blanks
Soil	Site Wide Excavation	27	1 per 900 square feet of excavation base	Endpoint Verification of footing excavations	VOCs EPA Method 8260B, pesticides, SVOCs EPA Method 8270, Pesticides / PCBs by EPA 8081/8082, and TAL Metals EPA 6010	1 per day	1 per 20 samples	1 per 20 samples	1 per trip

ATTACHMENT D
Community Air Monitoring Plan

COMMUNITY AIR MONITORING PLAN

262 GREEN
262-276 GREEN STREET AND 263 HURON STREET
BROOKLYN, NY

AUGUST- 2017

Prepared on behalf of:

270 GREEN LLC
199 Lee Avenue
Brooklyn, NY 11211

Prepared by:

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COMMUNITY AIR MONITORING PLAN
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APPENDICES

1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) has been prepared for the excavation and remediation activities to be performed under a Remedial Action Work Plan (RAWP) at the Tomat Service Station. The CAMP provides measures for protection for the downwind community (i.e., off-site receptors including residences, businesses, and on-site workers not directly involved in the investigation activities) from potential airborne contaminant releases resulting from investigative activities at the site.

Compliance with this CAMP is required during all activities associated with redevelopment that have the potential to generate airborne particulate matter and volatile organic compounds (VOCs). These activities include excavation, tank removal, and installation of the Air Sparge / Soil Vapor Extraction System (drilling or trenching). This CAMP has been prepared to ensure that investigation activities do not adversely affect passersby, residents, or workers in the area immediately surrounding the Site and to preclude or minimize airborne migration of investigation-related contaminants to off-site areas.

1.1 Regulatory Requirements

This CAMP was established in accordance with the following requirements:

- New York State Department of Health's (NYSDOH) Generic Community Air Monitoring Plan as presented in DER-10 Technical Guidance for Site Investigation and Remediation (NYSDEC May 3, 2010). This guidance specifies that a community air-monitoring program shall be implemented to protect the surrounding community and to confirm that the work does not spread contamination off-site through the air;

- New York State Department of Environmental Conservation (NYSDEC) DER-10 Technical Guidance for Site Investigation and Remediation: This guidance provides a basis for developing and implementing a fugitive dust suppression and particulate monitoring program as an element of a hazardous waste site's health and safety program.

2.0 AIR MONITORING

Petroleum related VOCs are the constituents of concern at the Site. The appropriate method to monitor air for these constituents during investigation activities is through real-time VOC and air particulate (dust) monitoring.

The continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

2.1 Meteorological Data

At a minimum, wind direction will be evaluated at the start of each workday, noon of each workday, and the end of each workday. These readings will be utilized to position the monitoring equipment in appropriate upwind and downwind locations.

2.2 Community Air Monitoring Requirements

To establish ambient air background concentrations, air will be monitored at several locations around the site perimeter before activities begin. These points will be monitored continuously in series during the site work. The perimeter monitoring points will be located to represent the nearest potentially exposed individuals at the downwind location.

Fugitive respirable dust will be monitored using a MiniRam Model PDM-3 aerosol monitor (or equivalent). Air will be monitored for VOCs with a portable Ionscience 3000 photoionization detector (PID), or equivalent. All air monitoring data will be documented in a site log book by the designated site safety officer. The site safety officer or delegate must ensure that air monitoring instruments are calibrated and maintained in accordance with manufacturer's specifications. All instruments will be zeroed daily and checked for accuracy. A daily log will be kept. If additional monitoring is required, the protocols will be developed and appended to this plan.

3.0 VOC MONITORING, RESPONSE LEVELS, AND ACTIONS

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present.

The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

- If total VOC concentrations opposite the walls of occupied structures or next to the intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s) (if access is granted by owner or occupants). Background readings in the occupied spaces must be taken prior to the commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to the commencement of the work.

All readings will be recorded and made available for NYSDEC and NYSDOH personnel to review. If an exceedance of the Action Limits occurs, an Action Limit Report, as shown in Appendix A, will be completed.

3.1 Potential Corrective Measures and VOC Suppression Techniques

If the 15-minute integrated VOC level at the downwind location persists at a concentration that exceeds the upwind level by more than 5 ppm but less than 25 ppm during remediation activities, then vapor suppression techniques will be employed. The following techniques, or others, may be employed to mitigate the generation and migration of fugitive organic vapors:

- Collection of purge water in covered containers;
- storage of excess sample and drill cuttings in drums or covering with plastic

4.0 PARTICULATE MONITORING

Air monitoring for particulates (i.e., dust) will be performed continuously during drilling activities using both air monitoring equipment and visual observation at upwind and downwind locations. Monitoring equipment capable of measuring particulate matter smaller than 10 microns (PM_{10}) and capable of integrating (averaging) over periods of 15 minutes or less will be set up at upwind (i.e., background) and downwind locations, at heights approximately four to five feet above land surface (i.e., the breathing zone). Monitoring equipment will be MIE Data Ram monitors, or equivalent. The audible alarm on the particulate monitoring device will be set at 90 micrograms per cubic meter ($\mu g/m^3$). This setting will allow proactive evaluation of worksite conditions prior to reaching the action level of 100 $\mu g/m^3$ above background. The monitors will be calibrated at least once per day prior to work activities and recalibrated as needed thereafter. In addition, fugitive dust migration will be visually assessed during all intrusive work activities.

The following summarizes particulate action levels and the appropriate responses:

- If the downwind PM-10 particulate level is 100 $\mu g/m^3$ greater than background (upwind perimeter) for the 15-minute period, or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 $\mu g/m^3$ above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 $\mu g/m^3$ above the upwind level, work must be stopped and an evaluation of activities initiated. Work can resume provided that dust suppression measures (as described in Section 2.3.1 below) and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 $\mu g/m^3$ of the upwind level and in preventing visible dust migration.

- If the total particulate concentrations opposite the walls of occupied structures or next to intake vents exceeds 150 $\mu g/m^3$, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 $\mu g/m^3$ or less at the monitoring point.

All readings will be recorded and be available for NYSDEC and NYSDOH personnel to review. If an exceedance of the Action Limits occurs, an Action Limit Report as shown in **Appendix A** will be completed.

4.1 Potential Particulate Suppression Techniques

If the integrated particulate level at the downwind location exceeds the upwind level by more than 100 $\mu g/m^3$ at any time during drilling activities, then dust suppression techniques will be employed.

The following techniques, or others, may be employed to mitigate the generation and migration of fugitive dusts:

- Placement of drill cuttings in drums or covering stockpiles with plastic;
- Misting of the drilling area with a fine water spray from a hand-held spray bottle

Work may continue with dust suppression techniques provided that downwind PM_{10} levels are not more than 150 $\mu g/m^3$ greater than the upwind levels.

There may also be situations where the dust is generated by drilling activities and migrates to downwind locations, but is not detected by the monitoring equipment at or above the action level. Therefore, if dust is observed leaving the working area, dust suppression techniques such as those listed above will be employed.

If dust suppression techniques do not lower particulates to below 150 $\mu g/m^3$, or visible dust persists, work will be suspended until appropriate corrective measures are identified and implemented to remedy the situation.

All air monitoring readings will be recorded in the field logbook and will be available for the NYSDEC and NYSDOH personnel to review.

5.0 DATA QUALITY ASSURANCE

5.1 Calibration

Instrument calibration shall be documented on instrument calibration and maintenance sheets or in the designated field logbook. All instruments shall be calibrated as required by the manufacturer. Calibration checks may be used during the day to confirm instrument accuracy. Duplicate readings may be taken to confirm individual instrument response.

5.2 Operations

All instruments shall be operated in accordance with the manufacturer's specifications. Manufacturers' literature, including an operations manual for each piece of monitoring equipment will be maintained on-site by the SSO for reference.

5.3 Data Review

The SSO will interpret all monitoring data based the established criteria and his/her professional judgment. The SSO shall review the data with the PM to evaluate the potential for worker exposure, upgrades/downgrades in level of protection, comparison to direct reading instrumentation and changes in the integrated monitoring strategy.

Monitoring and sampling data, along with all sample documentation will be periodically reviewed by the PM.

6.0 RECORDS AND REPORTING

All air readings must be recorded on daily air monitoring log sheets and made available for review by personnel from NYSDEC and NYSDOH.

APPENDIX A
ACTION LIMIT REPORT

CAMP
ACTION LIMIT REPORT

Project Location: _____

Date: _____ Time: _____

Name: _____

Contaminant: _____ PM-10: _____ VOC: _____

Wind Speed: _____ Wind Direction: _____

Temperature: _____ Barometric Pressure: _____

DOWNWIND DATA

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

UPWIND DATA

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

BACKGROUND CORRECTED LEVELS

Monitor ID #: Location: _____ Level Reported: Level Reported: _____

ACTIONS TAKEN

_____
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ATTACHMENT E
Resumes

AMC Engineering
99 Jericho Turnpike, Suite 300J
Jericho, NY 11590
Phone: (516) 417-8588

ARIEL CZEMERINSKI, P.E.

Mr. Czemerinski is a New York State Professional Engineer and CEO of AMC Engineering PLLC an EBC affiliate. Mr. Czemerinski has with 20 years of experience in the chemical and environmental areas. Areas of expertise include environmental compliance, permitting, remedial system design, process and plant safety, and management of a production facility. Mr. Czemerinski is a Registered Professional Engineer in NY, IN, IL, and MI.

Professional Experience
AMC: 14
Prior: 6 years

Education
Master of Science in Chemical Engineering, Columbia University, New York, NY, Feb. 1990. Bachelor of Science in Chemical Engineering, University Of Buenos Aires, Buenos Aires, Argentina, May 1987

Areas of Expertise

- Vapor Intrusion - Barrier and Sub Slab Venting System Design
- Environmental Assessment Statements and Environmental Impact Assessments under CEQR, ULURP
- Remedial Program Design and Management
- Environmental Compliance, Clean Water Act, Clean Air Act, Hazardous Materials
- Dewatering & Treatment System Design
- NYCDEP Sewer Discharge Permitting
- Transfer Station Permitting and Compliance
- Chemical Process Design and Optimization
- Wastewater Treatment Systems and Permitting, SPEDES, Air
- Zoning Regulations and Permitting
- Safety and Environmental Training
- Waste Management Plans

Professional Certifications

- OSHA 40-hr HAZWOPER
- OSHA 10-hr Construction Safety and Health

AMC Engineering
99 Jericho Turnpike, Suite 300J
Jericho, NY 11590
Phone: (516) 417-8588

PROJECT EXPERIENCE (Representative Projects)

Project: Domsey Fiber Corp. - 431 Kent Avenue, Brooklyn NY
Project Description: NYS Brownfield cleanup project / NYC E-Designation. Soil contaminated with chlorinated solvents, petroleum and heavy metals requiring excavation, soil management and disposal under a Remedial Action Work Plan, Soil / Materials Management Plan, Construction Health and Safety Plan and Community Air Monitoring Plan
Client: Express Builders
Regulatory Authority: NYSDEC, NYCOER
Role: Mr. Czemerinski served as the Remedial Engineer for the project.

Project: Springfield Gardens Residential Area BMP - Springfield Gardens, Queens, NY
Project Description: NYC Residential infrastructure (sewer, gas, water) upgrade, drainage channel installation and pond restoration. Soil contaminated with, petroleum and heavy metals requiring excavation, soil management and disposal under a Materials Handling Plan, Construction Health and Safety Plan and Community Air Monitoring Plan
Client: EIC Associates - NYCEDC
Regulatory Authority: NYSDEC, NYCParks
Role: Mr. Czemerinski served as the Remedial Engineer for the project.

Project: Former Domino Sugar Site - Kent Avenue, Brooklyn NY
Project Description: NYC E-Designation. Soil contaminated with semi-volatile organic compounds and heavy metals requiring excavation, soil management and disposal under a Remedial Action Work Plan, Soil / Materials Management Plan, Construction Health and Safety Plan and Community Air Monitoring Plan
Client: Two Trees Management
Regulatory Authority: NYCOER
Role: Mr. Czemerinski served as the Remedial Engineer for the project.

Project: Former Uniforms For Industry Site - Jamaica Avenue, Queens NY
Project Description: NYS Brownfield cleanup project / NYC E-Designation. Soil contaminated with chlorinated solvents, petroleum, mop oil and heavy metals requiring excavation, soil management and disposal under a Remedial Action Work Plan, Soil / Materials Management Plan, Construction Health and Safety Plan and Community Air Monitoring Plan
Client: The Arker Companies
Regulatory Authority: NYSDEC, NYCOER
Role: Mr. Czemerinski served as the Remedial Engineer for the project.

AMC Engineering
99 Jericho Turnpike, Suite 300J
Jericho, NY 11590
Phone: (516) 417-8588

PROJECT EXPERIENCE (Representative Projects)

Project: Former Charles Pfizer & Co. Site - 407 Marcy Avenue, Brooklyn, NY
Project Description: NYS Brownfield cleanup project / NYC E-Designation. Soil contaminated with chlorinated solvents, petroleum, and heavy metals requiring excavation, soil management and disposal under a Remedial Action Work Plan, Soil / Materials Management Plan, Construction Health and Safety Plan and Community Air Monitoring Plan
Client: The Rabsky Group
Regulatory Authority: NYSDEC, NYCOER
Role: Mr. Czemerinski served as the Remedial Engineer for the project.

Project: Former East Coast Industrial Uniforms Site - 39 Skillman Street, Brooklyn, NY
Project Description: NYS Brownfield cleanup project / NYC E-Designation. Soil contaminated with chlorinated solvents, petroleum, and heavy metals requiring excavation, soil management and disposal under a Remedial Action Work Plan, Soil / Materials Management Plan, Construction Health and Safety Plan and Community Air Monitoring Plan
Client: Riverside Builders
Regulatory Authority: NYSDEC, NYCOER
Role: Mr. Czemerinski served as the Remedial Engineer for the project.

Project: Former BP Amoco Service Station Site - 1800 Southern Boulevard, Bronx, NY
Project Description: NYS Brownfield cleanup project / NYC E-Designation. Soil contaminated with petroleum, and heavy metals requiring excavation, soil management and disposal under a Remedial Action Work Plan, Soil / Materials Management Plan, Construction Health and Safety Plan and Community Air Monitoring Plan
Client: SoBro, Joy Construction
Regulatory Authority: NYSDEC, NYCOER
Role: Mr. Czemerinski served as the Remedial Engineer for the project.

Project: Former Dico G Auto & Truck Repair Site - 3035 White Plains Road, Bronx, NY
Project Description: NYS Brownfield cleanup project. Soil contaminated with petroleum, and heavy metals requiring excavation, soil management and disposal under a Remedial Action Work Plan, Soil / Materials Management Plan, Construction Health and Safety Plan and Community Air Monitoring Plan
Client: The Arker Companies
Regulatory Authority: NYSDEC
Role: Mr. Czemerinski served as the Remedial Engineer for the project.

EBC

ENVIRONMENTAL BUSINESS CONSULTANTS

Charles B. Sosik, PG, PHG, Principal

Professional Experience

28 years

Education

MS, Hydrogeology, Adelphi University, NY
BS, Geology, Northern Arizona University, AZ

Areas of Expertise

- Brownfields Redevelopment
- Hazardous Waste Site Investigations
- Pre-purchase Site Evaluations and Support
- Regulatory Negotiations
- Remedial Planning and "Cost to Cure" Analysis
- Strategic Planning
- Real Estate Transactions
- NYC "E" Designations

Professional Certification

- Professional Geologist, NH
- Professional Geologist, Hydrogeologist, WA
- OSHA 40-hr HAZMAT
- OSHA 8-hr. Supervisor
- NYC OER Qualified Environmental Professional

Professional Affiliation / Committees

- NYS Council of Professional Geologists (NYSCPG)
- Association of Groundwater Scientists & Engineers (AGSE)
- NYS RBCA Advisory Committee
- Massachusetts LSP Association
- New Hampshire Association of Professional Geologists
- Interstate Technology Regulatory Council/MTBE Team
- Environmental Business Association, Brownfields Task Force
- Part 375 Working Group

PROFILE

Mr. Sosik has 28 years of experience in environmental consulting. He specializes in advising clients on managing environmental compliance with federal, state, and municipal agencies and has successfully directed numerous investigation and remediation projects involving petroleum, pesticides, chlorinated solvents, heavy metals and radiologically activated media. His work included extensive three-dimensional investigations on MTBE, which have been used effectively to help shape public policy. He also has experience in applying models to groundwater related problems and has completed several large-scale projects to determine fate and transport of contaminants, establish spill scenarios, and closure criteria. His experience and expertise in the area of contaminant hydrogeology has resulted in requests from environmental attorneys, property owners and New York State to serve as an expert witness and technical advisor on a variety of legal disputes.

For the past 15 years Mr. Sosik has been primarily engaged in providing environmental consulting to developers responding to the extensive re-zoning of former industrial and commercial properties, which is currently taking place throughout New York City. These services include everything from pre-purchase evaluations and contract negotiations to gaining acceptance in and moving projects through the NYS Brownfields Program. Mr. Sosik has taken a pro-active role in the continued development of the NYS Brownfields Program and related policy, by attending numerous working seminars, active participation in work groups and task forces and by providing commentary to draft versions of new guidance documents. Throughout his professional career, Mr. Sosik has remained committed to developing innovative cost- efficient solutions to environmental issues, specifically tailored to the needs of his clients.

SELECTED PROJECTS

Scavenger Waste Treatment Facility (SWTF), Suffolk County, NY

Water Treatment Plant EIS - Focused EIS - In response to requests from the Suffolk County Council on Environmental Quality and the Brookhaven Conservation Advisory Council, Mr. Sosik prepared a focused EIS to evaluate the potential impacts to an important surface water resource from the proposed facility including cumulative and synergistic effects with established contaminant plumes in the area.

Advanced Residential Communities, Rockville Centre, NY

Brownfield Project – As the senior project manager on this large scale, high profile redevelopment project, Mr. Sosik was asked to develop a plan to accelerate the regulatory process in the face of general community opposition. Through numerous discussions with the BCP management team, He was able to condense the schedule and review period, through the submission of supporting documents (Investigation Report, Remedial Work Plan) with the BCP application package. Community opposition, which focused on the environmental condition of the site as a means to block the project, was used to advantage in expediting approval of the aggressive interim remedial plan. This will allow the developer to begin remedial work approximately 5 months ahead of schedule.

Former Temco Uniform site, West Haverstraw, NY

Brownfield Project – Mr. Sosik took over management of this project from another consultant following transition of this VCP site to the BCP. Mr. Sosik used the opportunity to renegotiate and revise the scope of work to allow a more cost effective and focused investigation plan without re-writing or resubmitting the RIWP. During the NYSDEC's review of the transition package, he met with and coordinated changes with the NYSDEC Project Manager to gain approval. The result saved the client a significant amount of money, but perhaps more importantly in this case, did so without loss of time.

Grovick Properties, Jackson Heights, NY

Brownfield Project – This Brownfield property is somewhat unique in that it had been investigated and partially remediated by the NYSDEC through the petroleum spill fund. The client was interested in

purchasing the property and redeveloping it as office and retail space. Mr. Sosik reviewed the NYSDEC investigation and developed a supplemental plan to meet the requirements of an RI under the BCP program. By performing this limited amount of field work "up-front" he was able to complete an RI Report and Remedial Plan and submit both with the BCP application package. The NYSDEC and NYSDOH approved the RI Report and the Remedial Plan with minor changes. This cut 120 days from the review process and allowed the client to arrange financing and move his project forward knowing what the clean-up costs would be at the outset.

Metro Management, Bronx, NY

Brownfield Project – The site of a former gas station, the developer had planned to construct a 12-story affordable housing apartment complex with first floor retail space. Since the site was located in an Environmental zone, potential tax credits of 22% for site development, remediation and tangible property could be realized under the BCP. In a pre-application meeting with the NYSDEC, Mr. Sosik realized that the department did not believe the site was eligible for the BCP, since it had been previously investigated and closed under the spills program.

Mr. Sosik assisted the developer in securing financing, and due to the demands of an aggressive construction schedule developed an Interim Remedial Measure (IRM), based on chemical oxidation treatment. Working closely with the clients environmental counsel, Mr. Sosik was able to get the IRM approved without a public comment period. Implementation of the IRM is currently underway.

The project was awarded the 2009 NYC Brownfield Award for Innovation.

Brandt Airflex, NY

Technical Consulting Services - Mr. Sosik provided senior level technical advice and strategic planning in developing an off-site RI/FS for the site, in negotiating a tax reduction for the property due to the environmental condition and in preparing a cost to cure estimate for settlement between business partners. After achieving a favorable tax consideration and settlement agreement for his client

Allied Aviation Services, Dallas, Fort Worth, Airport, Dallas, TX

Jet Fuel Investigation - Mr. Sosik developed and managed an investigative plan to quickly identify the extent and source of jet fuel which was discharging from the Airport's storm drain system to a creek a mile away. Through the use of a refined conceptual model, accelerated investigative techniques and a flexible work plan, he was able to identify the source of the fuel and the migration route within a single week. He then identifled remedial options and successfully negotiated a risk based plan with the Texas regulatory agency that had issued a notice of enforcement action against the facility.

KeySpan – Former LILCO Facilities, Various NY Locations

Pesticide Impact Evaluation - Mr. Sosik developed, negotiated and implemented a site screening procedure to evaluate impact to public health and the environment as the result of past herbicide use at 211 utility sites. Using an unsaturated zone leaching model (PRZM) on a small subset of the sites, he was able to establish mass loading schedules for the remaining sites. This was combined with public well data in a GIS environment to perform queries with respect to mass loading, time transport and proximity to vunerable public supply wells. Using this approach Mr. Sosik was able to show that there were no concerns for future impact. This effort satisfied the public health and resource concerns of the state environmental agency and county health department in a reasonable amount of time and at a fraction of the cost of a full scale investigation.

Former Computer Circuits (Superfund) Site, Hauppauge, NY

CERCLA RI/FS - As Senior Project Manager for the site, he played a major role in regaining control of the investigation activites for the PRP. This action prevented the USEPA from initiating an extensive investigation at the site using a RAC II contractor allowing the client to perform a more efficient investigation. He was involved in all negotiations with EPA and was the project lead in developing a revised site characterization plan (work plan, field sampling plan, quality assurance plan, etc.). By carefully managing all phases of the investigation and continued interaction with each of the three regulatory agencies involved, Mr. Sosik was able to keep the project focused and incrementally reinforce the clients position. The estimated cost of the revised investigation is expected to save the client 1.5 to 2 million dollars.

Sun Oil, Seaford, NY

Remediation Consuliting Services & Project Management - Under an atmosphere of regulatory distrust, political pressure and mounting public hostility toward the client, Mr. Sosik conducted an off-site 3-D investigation to define the extent of contamination and the potential impact on public health. By designing and implementing an aggressive source area remediation program and personal interaction with the public and regulatory agencies, he was able to successfully negotiate a limited off-site remediation favorable to the client. Source area remediation was completed within 6 months and the project successfully closed without damage to the client's public image or working relationship with the regulatory agencies.

Con Edison, Various Locations, NY

Hydrogeologic Consulting Services - Under a general consulting contract, Mr. Sosik conducted detailed subsurface hydrogeologic investigations at five locations to assist in the development of groundwater contingency planning. He also developed and implemented work plans to investigate and remediate existing petroleum, cable fluid, and PCB releases at many of the generating facilities and substations. An important aspect of his role was in assisting the client in strategic planning and negotiations with the regulatory agency.

Keyspan - Tuthill Substation, Aqueboque, NY

Accelerated Site Characterization - Using accelerated site characterization techniques, Mr. Sosik presented the project as a case study in establishing the transport of an herbacide and its metobolites aplied at utility sites in the 1980's The results were then used to establish a screening method for evaluating 211 similar sites controlled by the client in a reasonable and eficient manner.

NYSDEC Spill, East Moriches, NY

Spill Release Analysis - With recognized expertise in the area of gasoline plume development on Long Island, Mr. Sosik was asked by

Charles B. Sosik, PG, PHG, Principal

the State to establish the release date (and principal responsible party) of an extensive petroleum spill, which impacted a residential neighborhood. He used multiple lines of evidence, and a new EPA model (HSSM), which he has helped to refine, to reconstruct the release scenario and spill date, in support of the State Attorney General's cost recovery effort from the PRP.

Minmilt Realty, Farmingdale, NY

Fate & Transport Modeling - He completed an RI/FS at this location for a PCE plume that had been in transit for over 30 years. Mr. Sosik applied a conservative model to evaluate time/concentration impacts under a variety of transport scenarios to a municipal wellfield located 13,000 feet away. Through the use of the model and careful interpretation of an extensive data set compiled from several sources, Mr. Sosik was able to propose a plan which was both acceptable to the regulator and favorable to the client.

Sebonack Golf Course Project, Town of Southampton, NY

IPM Pesticide Study - Provided professional hydrogeologic services in support of the EIS prepared for the development of the site. The proposed development included an 18-hole golf course, clubhouse, dormitory facility, cottages, associated structures, and a 6,000 square foot research station for Southampton College. Mr. Sosik performed an extensive evaluation (using a pesticide-leaching model) on the effects of pesticide and nitrogen loading to groundwater as part of the projects commitment to an Integrated Pest Management (IPM) approach.

NYSDEC, Spills Division, Regions 1 – 4

Petroleum Spills Investigation & Remediation - As a prime contractor/consultant for the NYSDEC in Regions 1-4, Mr. Sosik has managed the investigation and remediation of numerous petroleum spills throughout the State. Many of these projects required the development of innovative investigation and remediation techniques to achieve project goals. He was also involved in many pilot projects and research studies to evaluate innovative investigation techniques such as accelerated site characterization, and alternative approaches to remediation such as monitored natural attenuation and risk based corrective action.

Sun Oil, E. Meadow, NY

Exposure Assessment - Performed to seek closure of the spill file, despite the presence of contaminants above standards, Mr. Sosik determined after the extended assessment that the level of remaining contamination would not pose a future threat to human health or the environment. He used multiple lines of evidence, and a fate and transport model to show that degradation processes would achieve standards within a reasonable time.

Sand & Gravel Mine, NY

Property Development - As part of the development of a sand and gravel mine, Mr. Sosik provided environmental consulting services to assist in obtaining a mining permit, which would result in the construction of a 150-acre lake. Specifically, Mr. Sosik investigated if the proposed lake would reduce groundwater quantity to domestic and public well fields, and/or accelerate the migration of potential surface contaminants to the lower part of the aquifer. After assuming the lead role in negotiations with the regulatory agency, Mr. Sosik was able to obtain a permit for the client by adequately addressing water quality and quantity issues, and by preparing a monitoring plan and spill response plan, acceptable to all parties.

NYSDEC, Mamaroneck, NY

Site Characterization / Source Identification - In a complex hydrogeologic setting consisting of contaminant transport through fractured metomorphic bedrock and variable overburden materials, Mr. Sosik was able to develop and implement a sub-surface investigation to differentiate and separate the impact associated with each of two sources. The results of this investigation were successful in encouraging the spiller to accept responsibility for the release.

Riverhead Municipal Water District, NY

Site Characterization / Remedial Planning - Using accelerated characterization techniques, he implemented a 3-D site investigation to identify two service stations 4,000 ft. away as the source of contamination impacting a municipal wellfield. In accordance with the strict time table imposed by the need to return the wellfield to production by early spring, he designed and implemented a multi-point (9 RW, 6 IW) recovery and injection well system using a 3-d numerical flow model, and completed the project on time. Using a contaminant transport model, Mr. Sosik developed clean-up goals which were achieved in 9 months of operation, well below the projected 3 to 5 year project duration.

Montauk Fire Department, NY

Site Assessment - Mr. Sosik performed a limited investigation and used a 2-D flow model to demonstrate that the property could not have been the source of contamination which had impacted an adjacent wellfield as per the results of a previous investigation. This small focused effort successfully reversed a $500,000, and rising, claim against the department by the water district and the NYSDEC.

PREVIOUS EXPERIENCE

P.W. Grosser Consulting, Bohemia, NY
Senior Project Manager, 1999-2006

Environmental Assessment & Remediation, Patchogue, NY
Senior Project Manager, 1994-1999

Miller Environmental Group, Calverton, NY
Project Manager, 1989-1994

DuPont Biosystems, Aston, PA
Hydrogeologist, 1988-1989

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Charles B. Sosik, PG, PHG, Principal

EXPERT WITNESS TESTIMONY AND DEPOSITIONS

Fact Witness -Testimony on relative age of petroleum spill based on nature and extent of residual and dissolved components at the Delta Service Station in Uniondale, NY Fall/1999

Expert Witness / Expert Report for defendant in cost recovery case by NYS Attorney General regarding a Class II Inactive Hazardous Waste (State Superfund) project by the NYSDEC (October 2004 – present, Report: March 2005, Deposition: April 2005, 2nd Report: Aug. 2013, 2nd Deposition Nov. 2013, Bench Trial: December 2013 - qualified as expert in Federal Court),

Expert Witness / Fact Witness for plaintiff seeking compensation for partial expenses incurred during the investigation and remediation of a USEPA CERCLA site due to the release and migration of contaminants from an "upgradient" industrial property. (Deposition May 2005, case settled April 2007).

Expert Witness / Fact Witness for NYS Attorney General with respect to cost recovery for a NYSDEC petroleum spill site in Holtzville, NY (Deposition April 2005 - case settled).

Expert Witness – Statement of opinion and expert testimony at trial for plaintiff seeking damages from a major oil corporation for contamination under a prior leasing agreement in Rego Park, NY. Case decided in favor of plaintiff. Trial July 2007, in favor of Plaintiff. Qualified as Expert.

Expert Witness / Fact Witness for NYS Attorney General with respect to cost recovery for a NYSDEC petroleum spill site in Lindenhurst, NY (Trial date Dec. 2009, in favor of plaintiff. Qualified as Expert State Supreme Court.

Expert Witness - for NYS Attorney General regarding NYSDEC cost recovery for a petroleum spill site at Riverhead, NY. Case settled July 2008.

Expert Witness for plaintiffs in class action case with respect to damages from chlorinated plume impact to residences in Dayton, OH. (Draft Report – May 2013).

Expert Witness / Fact Witness for defendant with respect to cost recovery and third party responsibility for a NYSDEC petroleum spill site in Lindenhurst, NY (Expert Statement of Fact – October 2005).

Expert Witness for plaintiff seeking damages related to a petroleum spill from the previous owner/operator of a gas station in College Point, NY. Case settled 2009.

Expert Witness for plaintiff (municipal water supply purveyor) seeking damages from major oil companies and manufacturer of MTBE at various locations in Suffolk County, NY. Expert reports July 2007, August 2007 and October 2007, Case settled August, 2008.

Expert Witness - Deposition for NYS Attorney General regarding NYSDEC cost recovery for a petroleum spill site at Sag Harbor, NY. August 2002

Expert Witness for defendant responding to a claim from adjacent commercial property owner on the origin of chlorinated solvents on plaintiff's property located in Cedarhurst, NY. Expert opinion submitted to lead counsel on March 6, 2009, case settled April 2009.

Expert Report - for Attorney General on modeling performed to determine the spill release scenario at a NYSDEC petroleum spill site in East Moriches, NY. June 2000.

Expert Witness - for plaintiff in case regarding impact to private wells from a spill at adjacent Town and County properties with open gasoline spill files in Goshen, NY. Expert report submitted August 2013.

Expert Witness for defendant with respect to cost recovery from Sunoco for a NYSDEC petroleum spill site. (Declaration – January 2013).

Expert Witness - for plaintiff (municipal water supply purveyor) seeking damages from Dow Chemical for PCE impact at various locations in Suffolk County, NY. Affidavit submitted 2011.

MODELING EXPERIENCE (PARTIAL LISTING)

PROJECT	MODEL	APPLICATION
Riverhead Water District, Riverhead, NY	MODFLOW, MODPATH	Remediation system design to intercept MTBE plume and prevent continued impact to municipal well field.
NYSDEC - Region 1, Holbrook, NY	MODFLOW, MODPATH	Simulate transport of MTBE plume to predict future impact.
NYSDEC - Region 1, East Moriches, NY	HSSM	Evaluate release scenario and start date of petroleum spill in support of cost recovery by NYS AG office.
AMOCO, Deer Park, NY	HSSM	Estimate release amount, start date and spill scenario to evaluate the potential for mass unaccounted for
Keyspan Energy, Nassau/Suffolk Counties Substations	PRZM	Estimate mass load of simazine used at 211 electric substations and screen sites according to potential for human health and ecological impacts.
Saboneck Golf Club, Southampton NY	PRZM	Estimate mass load of proposed pesticides on new golf course to evaluate acceptability under an IPM program.
Suffolk County Department of Public Works (SCDPW) Scavenger Waste Treatment Plant, Yaphank, NY	DYNFLOW, DYNTRAC	Evaluate time-transport and nitrogen impact on local river system.
SCDPW SUNY Waste Water Treatment Plant, Stony Brook, NY	DYNFLOW, DYNTRAC	Determine outfall location and time-transport of nitrogen from proposed upgrades to an existing wastewater treatment plant
Water Authority of Great Neck North Great Neck, NY	MODFLOW, MODPATH, MT3D	Review of modeling study performed by EPA to evaluate potential future impact to Well field from PCE plume. Identified serious flaws in model construction and implementation, which invalidated conclusions

PUBLICATIONS / PROFESSIONAL PAPERS

Smart Pump & Treat Strategy for MTBE Impacting a Public Water Supply (14th Annual Conference on Contaminated Soils Proceedings, 1998)

Transport & Transformation of BTEX & MTBE in a Sand Aquifer (Groundwater Monitoring & Remediation 05/1998)

Characteristics of Gasoline Releases in the Water Table Aquifer of Long Island (Petroleum Hydrocarbons Conference Proceedings, 1999)

Field Applications of the Hydrocarbon Spill Screening Model (HSSM) (USEPA Interactive Modeling Web Course www.epa.gov/athens/software/training/webcourse Authored module on model application and applied use of calculators, 02/2000)

Comparative Evaluation of MTBE Sites on Long Island, US EPA Workshop on MTBE Bioremediation (Cincinnati, 02/2000)

Comparison of Four MTBE Plumes in the Upper Glacial Aquifer of Long Island (American Geophysical Union, San Francisco, 12/1996)

Analysis and Simulation of the Gasoline Spill at East Patchogue, New York (American Geophysical Union, San Francisco, 12/1998)

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Keith W. Butler, Senior Project Manager

PROFILE

Mr. Butler has extensive project management experience with respect to environmental due diligence and subsurface investigations. He is responsible for the preparation of project proposals, Phase I and II Environmental Site Assessments, Work Plans, Health and Safety Plans, Quality Assurance Project Plans, and investigation reports. Additionally, Mr. Butler has conducted and managed numerous Phase I and II ESAs. In these roles, Mr. Butler is responsible for applying the various state and local regulations, which govern environmental compliance and determine the need for additional investigation and/or remediation.

SELECTED PROJECTS

Madison National Bank, Various Sites, New York

Mr. Butler served as the Project Manager and principal contact for Madison National Bank. He was responsible for the preparation of Transaction Screen and Phase I/II Environmental Site Assessments (ESAs) at various sites throughout the New York metropolitan area, as required by the bank to satisfy client mortgage or construction loan requests.

Jewish Home & Hospital, Manhattan, NY

Most recently, Mr. Butler completed a Phase I ESA at their Bronx campus to obtain US. Housing and Urban Development (HUD) funding for a future construction project. Mr. Butler was also responsible for implementing a Remedial Action Work (RAW) Plan at the Bronx facility as required by the NYSDEC under a Voluntary Cleanup Agreement. The RAW included the preparation of contract documents, excavation of over 2,000 tons petroleum contaminated soils, installation of a Soil Vapor Extraction (SVE) system remedial oversight, and sampling.

Pulte Homes of New York, Patchogue, NY

Mr. Butler served as the Project Manager for the re-development of this six-acre site and was responsible for field oversight and coordination between remediation contractors and various regulatory agencies. Initial phases of the project included the completion of Phase I and II ESAs. Subsequent remediation consisted of UST removal, excavation of petroleum-impacted soils, closure of three NYSDEC spill numbers, removal of contaminated UIC sediment/sludge, the closure of commercial and residential UIC structures and the excavation of arsenic and metals contaminated soil. The project was conducted under approved Remedial Work and Soil Management Plans with oversight from the State, County and Village agencies.

Town of Islip, Blydenburgh Road Landfill, Hauppauge, NY

Mr. Butler served as the Project Manager for the groundwater and leachate monitoring program at the Blydenburgh Road Landfill - Cleanfills 1 and 2 and Leachate Impoundment Area. Mr. Butler was the principal contact for the Town's Resource Recovery Agency. He prepared the quarterly and annual monitoring reports, oversaw sampling efforts, and coordinated with the Town's analytical laboratory and data validation contractors. Mr. Butler was also responsible for preparing quarterly well condition reports and leachate quality reports for compliance with the Town's Suffolk County Discharge Certification Permit.

Ogden Aviation, Various Sites, JFK International Airport, Jamaica, New York

Mr. Butler served as the project manager for the rehabilitation of the satellite fuel farm recovery well system. Recovery wells at the fuel farm had become clogged with iron deposits and bacteria limiting product recovery efforts. Mr. Butler developed and supervised chemical cleaning and redevelopment of recovery wells under the approval of the NYSDEC. The chemical treatment has resulted in significant increases in product recovery volumes.

Brookhaven National Laboratory, Upton, NY

Mr. Butler has worked on a number of remediation system and monitoring well installation projects at BNL. His duties included oversight of installations, system pump tests, performance evaluations, and well development. He also provided oversight of soil borings, temporary well construction, soil and water sampling, and air monitoring for groundwater screening survey of two operable units in hazardous and radioactive waste storage areas. Mr. Butler also provided oversight for groundwater monitoring, well construction, well abandonment, and methane-monitoring wells for landfill closure.

metroPCS, Various Sites, New York

Mr. Butler served as the Project Manager for metroPCS' Long Island region telecommunications site acquisition and expansion program. Mr. Butler was responsible for the preparation of Phase I ESAs, the conduct of Phase II ESAs, including asbestos, lead paint and soil sampling, and coordination of National Environmental Policy Act (NEPA) reports and planning studies at various locations proposed for construction of new cellular telephone facilities. Reports and associated communications were transmitted electronically through metroPCS' data management system.

Dormitory Authority - State of New York, Harlem Hospital Center Modernization Project - Hazardous and Universal Waste Survey, Harlem Hospital, New York, NY

Mr. Butler served as the field team leader for conducting hazardous and universal waste surveys in multiple buildings affiliated with Harlem Hospital Center. The survey included the identification of hazardous and universal waste materials including chemicals, paints, fluorescent bulbs, high intensity discharge bulbs/fixtures, battery operated equipment, above and underground petroleum storage tank identification, PCB containing light ballasts and electrical equipment.

Keith W. Butler, Senior Project Manager

The hospital is comprised of a number of buildings, many that were abandoned and slated for demolition.

SVE Monitoring at Newark International Airport, Elizabeth, NJ
A routine leak detection test indicated that two 10,000-gallon underground storage tanks, which were used to store unleaded gasoline, had failed tightness tests. Follow-up investigation revealed that the product had impacted the subsurface environment. In response to this, a soil vapor extraction system was installed to reduce the residual concentrations of petroleum constituents in soil and groundwater and to minimize vapor migration into subsurface utility vaults. Mr. Butler was responsible for implementing the Remedial Action Work Plan, developed for the site by Ogden and the State of New Jersey. Activities conducted under the RAW include quarterly groundwater monitoring, air sampling, vacuum pressure monitoring, system maintenance and reporting.

Federal Express Site, Newark International Airport, Elizabeth, NJ
Mr. Butler worked with Ogden Aviation and the State of New Jersey to address outstanding environmental issues at the site related to a spill of jet fuel, which occurred during a construction accident. Mr. Butler performed a site assessment, which included groundwater monitoring, product gauging, and groundwater flow modeling. After reviewing these data, Mr. Butler determined that fill material at the site was contributing to soil and groundwater contamination and has petitioned the State for partial site closure. Mr. Butler is continuing to address the remaining area of concern through product recovery and continued monitoring.

Northrop Grumman, Various Sites
Mr. Butler conducted three Phase I ESAs and a Phase II investigation for the presence of PCBs in soil. He also inspected and supervised the removal of underground storage tanks, asbestos abatement projects, and sanitary system closures related to the facility decommissioning. Mr. Butler also conducted groundwater investigations and provided oversight during soil sampling, drilling and soil remediation activities.

New York City Department of Environmental Protection, Various Sites
Mr. Butler served as an Environmental Scientist for hazard investigation at seven sewage pump stations. Mr. Butler addressed a wide range of environmental concerns including asbestos, lead based paints, PCB oil, light ballasts, and other hazardous building materials. He conducted field investigations, sampling, and prepared Hazardous Materials Survey Reports for use during preparation of plans and specifications for proposed pump station construction projects.

Fresh Kills Landfill, Staten Island, New York
Mr. Butler participated in the field operations during pump and yield tests conducted on Cells 1 and 9. The tests were performed to determine the hydraulic properties of the landfill's refuse. He collected groundwater and leachate measurements in recovery wells and in adjacent observation wells under pumping and non-pumping conditions.

PREVIOUS EXPERIENCE

DECA Real Estate Advisors
Director of Environmental Services, 2011-2017

VHB Engineering, Surveying and Landscape Architecture PC, Hauppague NY
Senior Project Manager, 2005-2011

Parsons Brinkerhoff, Inc. New York NY
Senior Project Manager, 2004-2005

P.W. Grosser Consulting, Bohemia, NY
Senior Project Manager, 1998-2004

Eder Associates, Locust Valley, NY
Field Hydrogeologist, 1992-1998

EDUCATION

BS, Geology, Slippery Rock University of Pennsylvania, 1990

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS

OSHA Certification, 40-hour Health & Safety Training at Hazardous Waste Sites

OSHA Certification, 8-hour Refresher Health & Safety Training at Hazardous Waste Sites

OSHA Confined Space Entry Training

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Chawinie Reilly, Project Manager / Industrial Hygienist

Professional Experience
EBC: March 2013
Prior: 8 years

Education
Bachelor of Science, Health Sciences, Concentration in Environmental Health and Safety, Stony Brook University, NY

Areas of Expertise
- Remedial Investigation Work Plans, Remedial Investigation Reports, Remedial Action Work Plans
- Phase I / Property Condition Assessments
- Occupational Health and Safety Sampling
- Indoor Air Quality (IAQ) Investigations
- Mold Investigations and Remediation
- Soil and Ground Water Investigations
- Noise Studies
- Lead Paint and Asbestos Surveys
- Hazardous Materials Assessments

Professional Certification
- OSHA 40-hr HAZWOPER
- NYS Asbestos Inspector
- NYC Asbestos Investigator
- USEPA Lead Inspector
- USEPA Lead Risk Assessor
- OSHA 10-hr Construction Health and Safety
- Hazard Analysis and Critical Control Point (HACCP) Certified

PROFILE

Mrs. Reilly has 11 year's experience as an environmental consultant/contractor and has worked on and managed a wide range of environmental projects. Major responsibilities include Remedial Investigation Work Plans, Remedial Investigation Reports, Remedial Action Work Plan and Noise Remedial Action Work Plans. Mrs. Reilly has conducted Phase Is and Property Condition Assessments for commercial, industrial, and residential properties in New York, New Jersey and Connecticut. In addition, Mrs. Reilly has conducted various IAQ, asbestos, mold and occupational health and safety sampling investigations for a variety of city, state, federal and private clients.

PREVIOUS EXPERIENCE

The Louis Berger Group, New York, New York-Industrial Hygienist, 2008-2013
AEI Consultants, Jersey City, New Jersey- Environmental Scientist, 2005-2008

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ENVIRONMENTAL BUSINESS CONSULTANTS

Kevin Waters, Field Manager

Professional Experience
EBC: October 2010
Prior: 5 years

Education
Bachelor of Science, Geology, State University of New York, Stony Brook

Areas of Expertise
- Field Operations
- Phase II and RI Implementation, Site Characterization Studies
- Health & Safety Monitoring and Oversight
- Waste Characterization / Soil Management
- Site Logistics

Professional Certification
- OSHA 40-hr HAZWOPER
- OSHA 8-hr HAZWOPER Supervisor

PROFILE

Mr. Waters has 12 years experience as an environmental consultant and has worked on a wide range of environmental projects. Mr. Waters is EBC's manager of field operations and has extensive experience on remedial construction projects including site characterization, waste classification, soil management and disposal, dewatering operations, community air monitoring and health & safety and performance sampling.

Mr. Waters' field experience includes soil, air and groundwater sampling, operation and maintenance of groundwater remediation systems, tank removals, spill management and closure, and oversight of monitoring well installations. In addition, Mr. Waters has prepared reports for both regulatory and client use.

PREVIOUS EXPERIENCE

P.W. Grosser Consulting, Bohemia, NY
Field Hydrogeologist, 2003-2008

SELECT PROJECT EXPERIENCE

Project:	Former Gas Station / car wash to mixed use affordable housing / commercial
Location:	Bronx, NY, Southern Boulevard
Type:	NYS BCP, NYC E-Site Hazmat, Former gas station / gar wash
Contamination:	Petroleum - Gasoline
Role:	Field Operations Manager, Health and Safety Officer

EBC

ENVIRONMENTAL BUSINESS CONSULTANTS

Kevin Waters, Field Manager

SELECT PROJECT EXPERIENCE

Project:	Former Uniforms for Industry Site – Richmond Hill Senior Living Residences / Richmond Place
Location:	Jamaica Ave, Richmond Hill Queens, NY
Type:	NYS BCP, NYC E-Site Hazmat, Noise, Former industrial Laundry
Contamination:	Chlorinated Solvents, Historic Fill, Petroleum - Fuel oil/Mop oil
Role:	Field Operations Manager, Health and Safety Monitoring and Field Oversight

Project:	Rikers Island – West Intake Facility
Location:	NYC Department of Corrections, Rikers Island, NY
Type:	Municipal Construction Project
Contamination:	Hazardous levels of lead, heavy metals in Historic fill
Role:	Field Operations Manager, Health and Safety Monitoring and Field Oversight

Project:	Residential Redevelopment Project
Location:	Williamsburg Section of Brooklyn, Wallabout Street
Type:	NYC E-Designation Site
Contamination:	Hazardous levels of lead, heavy metals, SVOCs in Historic fill
Role:	Implement RI Work Plan, Supervise sample collection in all media

Project Name:	Former Domsey Fiber Corp.
Location:	Brooklyn NY, S. 9th Street, Wythe and Kent Avenues Williamsburg
Program Type:	NYS BCP, NYC E-Site Hazmat / Noise
Role:	Field Operations Manager - managing and supervising field crews in sample collection, Health and Safety Monitoring and Field Oversight

Project Name:	Former 110th Street Station
Location:	Manhattan, NY, 2040 Frederick Douglas Boulevard, Harlem
Program Type:	NYS BCP, NYC E-designation Hazmat
Role:	Field Operations Manager - managing and supervising field crews in sample collection, Health and Safety Monitoring and Field Oversight

Project Name:	Former East Coast Industrial Uniforms
Redevelopment:	Industrial to residential (market rate condos)
Location:	Brooklyn, NY, 39 Skillman Street, Williamsburg
Program Type:	NYS BCP
Role:	Field Operations Manager - managing and supervising field crews in sample collection, Health and Safety Monitoring and Field Oversight

Environmental Business Consultants •1808 Middle Country Road, Ridge, NY 11961
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ATTACHMENT F
Estimated Remedial Costs

262 GREEN
Brooklyn, NY

Costs by Task

TASK - ENVIRONMENTAL REMEDIATION	Alternative 1 (Track 1)	Alternative 2 (Track 2)	Alternative 3 (Track 4)
Excavation and Disposal	$ 4,130,147.50	$ 3,950,785.00	$ 3,616,060.00
Endpoint analysis, DUSR, EDDs	$ 25,025.00	$ 25,025.00	$ 25,025.00
Air Monitoring and Field Oversight	$ 146,000.00	$ 127,750.00	$ 101,000.00
Project Management	$ 50,220.00	$ 45,675.00	$ 42,225.00
Dewatering Permits and Treatment System	$ 567,750.00	$ 567,750.00	$ 567,750.00
Status Reports	$ 4,200.00	$ 4,200.00	$ 4,200.00
Environmental Easement Package	-	$ 12,500.00	$ 12,500.00
Site Management Plan	-		$ 11,500.00
Final Engineering Report	$ 25,450.00	$ 25,450.00	$ 25,450.00
Subtotal	$ 4,948,792.50	$ 4,759,135.00	$ 4,405,710.00
15% Contigency	$ 742,318.88	$ 713,870.25	$ 660,856.50
Total	**$ 5,691,111.38**	**$ 5,473,005.25**	**$ 5,066,566.50**

ATTACHMENT G
NYC DEP Sewer Discharge Sampling Schedule and Discharge Limitations

New York City Department of Environmental Protection
www.nyc.gov/dep

NEW YORK CITY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTEWTER TREATMENT
IPP INSPECTION & PERMIT SECTION

Procedure for Obtaining Letter of Approval for Groundwater Discharge to Sanitary or Combined Sewer

Applicant must submit:

1. One cover letter describing the project in details.
2. One complete Wastewater Quality Control (WQC) application.*
3. One Site Plan (to scale)*. The site plan must indicate, at a minimum:
   - Location, type (sanitary or combined) and size of the public sewer.
   - Existing and proposed sewer connections from the project site to the public sewer line (indicate whether the connecting pipe is above or below ground level).
   - Adjacent streets around the project site.
   - Location of equipment: pumps, pipes, pretreatment equipments, etc.
   - Location(s) of point(s) of discharge (POD).
   - Properly sized and approved pretreatment systems. Manufacturer specifications and engineering must also be submitted.
   - A detailed flow/layout diagram of the different types of pretreatment equipment used.
   - Clearly drawn property lines of the project site.
4. An analytical report of the groundwater to be discharged. Samples must be taken downstream from pretreatment equipment if such exists, and be representative of nature of proposed groundwater discharge. All laboratory analyses must be conducted by a New York State Department of Health certified wastewater laboratory for the parameters listed in Table A. The results must be certified by the laboratory and submitted on the laboratory's letterhead. For each sample, the laboratory report must indicate, at a minimum: the date of sampling, time sample was taken, sample location, chain of custody, sampling preservation procedures, analytical techniques used, date of analysis, units of measurement, and the laboratory's sample identification. Where the analytical result reported is below the method detection level, the laboratory report must also indicate the method detection level.
   The project name referenced on the analytical report must be identified exactly as it is in the WQC application.
5. If the proposed discharge exceeds 10,000 gallons per day, additional approval must be obtained from the NYC DEP's Bureau of Water and Sewer Operations, Division of Connections & Permitting. The contact person is Mr. Suresh Kumar, Associate Project Manager, and can be reached at (718) 595-5205.
6. Prior to commencement of discharge, the permittee must obtain a Dewatering Permit from respective Borough Office contingent to presenting the Letter(s) of Approval and upfront payment of sewer charges, if required.
7. The Letter of Approval is contingent upon permittee's compliance with any other Federal, State or Local laws applicable to the permitted activity.
8. The application must be signed by:
   i. The officer or director if owner/applicant is a corporation; or
   ii. The partner, general and limited, if owner/applicant is a partnership; or
   iii. The officer, director, partner, or owner if owner/applicant is a limited liability company; or
   iv. The owner, if owner/applicant is a sole proprietorship
9. All inquiries should be directed to the attention of Ms. Sophia Rabich at (718) 595-4707 or Mr. Sean Hulbert at (718) 595-4715.

* This document must include **original** stamp and signature of a NYS Registered Architect or a NYS Professional Engineer.

TABLE A

LIMITATIONS FOR EFFLUENT TO ***SANITARY OR COMBINED*** SEWERS

Parameter[1]	Daily Limit	Units	Sample Type	Monthly Limit
Non-polar material[2]	50 mg/l		Instantaneous	---
pH 5-12		SU's	Instantaneous	---
Temperature	< 150	Degree F	Instantaneous	---
Flash Point	> 140	Degree F	Instantaneous	---
Cadmium	2 0.69	mg/l mg/l	Instantaneous Composite	--- ---
Chromium (VI)	5	mg/l	Instantaneous	---
Copper 5		mg/l	Instantaneous	---
Lead 2		mg/l	Instantaneous	---
Mercury 0.05		mg/l	Instantaneous	---
Nickel 3		mg/l	Instantaneous	---
Zinc 5		mg/l	Instantaneous	---
Benzene 134		ppb	Instantaneous	57
Carbontetrachloride ---		---	Composite	---
Chloroform ---		---	Composite	---
1,4 Dichlorobenzene	---	---	Composite	---
Ethylbenzene 380		ppb	Instantaneous	142
MTBE (Methyl-Tert-Butyl-Ether)	50 ppb		Instantaneous	---
Naphthalene 47		ppb	Composite	19
Phenol ---		---	Composite	---
Tetrachloroethylene (Perc)	20	ppb	Instantaneous	---
Toluene	74	ppb	Instantaneous	28
1,2,4 Trichlorobenzene	---	---	Composite	---
1,1,1 Trichloroethane	--- ---		Composite	---
Xylenes (Total)	74	ppb	Instantaneous	28
PCB's (Total)[3]	1 ppb		Composite	---
Total Suspended Solids (TSS)	350[4]	mg/l Instantan	eous	---
CBOD[5]	--- ---		Composite	---
Chloride[5]	--- ---		Instantaneous	---
Total Nitrogen[5]	--- ---		Composite	---
Total Solids[5]	--- ---		Instantaneous	---
Other				

1. All handling and preservation of collected samples and laboratory analyses of samples shall be performed in accordance with 40 C.F.R. pt. 136. If 40 C .F.R. pt. 136 does not cover the pollutant in question, the handling, preservation, and analysis must be performed in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater." All analyses shall be performed using a detection level less than the lowest applicable regulatory discharge limit. If a parameter does not have a limit, then the detection level is defined as the least of the Practical Quantitation Limits identified in NYSDEC's Analytical Detectability and Quantitation Guidelines for Selected Environmental Parameters, December 1988.

2. Analysis for *non-polar materials* must be done by EPA method 1664 Rev. A. Non-Polar Material shall mean that portion of the oil and grease that is not eliminated from a solution containing N–Hexane, or any other extraction solvent the EPA shall prescribe, by silica gel absorption.

3. Analysis for PCB=s is required if *both* conditions listed below are met:

   (a) if proposed discharge ≥ 10,000 gpd;
   (b) if duration of a discharge > 10 days.

   Analysis for PCB=s must be done by EPA method 608 with MDL=<65 ppt. PCB's (total) is the sum of PCB-1242 (Arochlor 1242), PCB-1254 (Arochlor 1254), PCB-1221 (Arochlor 1221), PCB-1232 (Arochlor 1232), PCB-1248 (Arochlor 1248), PCB-1260 (Arochlor 1260) and PCB-1016 (Arochlor 1016).

4. For discharge ≥ 10,000 gpd, the TSS limit is 350 mg/l. For discharge < 10,000gpd, the limit is determined on a case by case basis.

5. Analysis for Carbonaceous Biochemical Oxygen Demand (CBOD), Chloride, Total Solids and Total Nitrogen are required if proposed discharge ≥ 10,000 gpd. Total Nitrogen = Total Kjeldahl Nitrogen (TKN) + Nitrite (NO_2) + Nitrate (NO_3).

ATTACHMENT H
Waste Characterization Sampling

Table H-1
262 Green Street, Brooklyn New York
Waste Characterization Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NJ Residential Soil Cleanup Objectives	GREEN GRAB										PURPLE GRAB									
				(0-3')		(3-6')		(6-9')		(9-11')		(12-15')		(0-3')		(3-6')		(6-9')		(9-12')		(12-15')	
				3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 24	24	< 1400	1,400	< 26	26	< 26	26	< 36	36	< 25	25	< 1700	1,700	< 1700	1,700	< 3600	3,600	< 24	24
1,1,1-Trichloroethane	680	100,000	290,000	< 360	360	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 680	680	< 5.9	5.9
1,1,2,2-Tetrachloroethane			1,000	< 360	360	< 360	360	< 410	410	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
1,1,2-Trichloroethane			2,000	< 360	360	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
1,1-Dichloroethane	270	26,000	8,000	< 270	270	< 270	270	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 270	270	< 270	270	< 270	270	< 5.9	5.9
1,1-Dichloroethene	330	100,000	11,000	< 330	330	< 330	330	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 330	330	< 330	330	< 330	330	< 5.9	5.9
1,2,3-Trichlorobenzene				< 6.0	6.0	< 360	360	< 410	410	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
1,2,4-Trichlorobenzene			73,000	< 6.0	6.0	< 360	360	< 410	410	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
1,2-Dibromo-3-chloropropane			80	< 6.0	6.0	< 80	80	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 87	87	< 83	83	< 180	180	< 5.9	5.9
1,2-Dibromoethane			8	< 6.0	6.0	< 36	36	< 6.6	6.6	< 6.6	6.6	< 8.0	8.0	< 6.1	6.1	< 44	44	< 42	42	< 91	91	< 5.9	5.9
1,2-Dichlorobenzene	1,100	100,000	5,300,000	< 6.0	6.0	< 360	360	< 410	410	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
1,2-Dichloroethane	20	3,100	900	< 6.0	6.0	< 36	36	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 44	44	< 42	42	< 91	91	< 5.9	5.9
1,2-Dichloropropane			2,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
1,3-Dichlorobenzene	2,400	4,900	5,300,000	< 6.0	6.0	< 360	360	< 410	410	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
1,4-Dichlorobenzene	1,800	13,000	5,000	< 6.0	6.0	< 360	360	< 410	410	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
1,4-Dioxane	100	13,000		< 90	90	< 2900	2,900	< 99	99	< 99	99	< 100	100	< 92	92	< 3500	3,500	< 3300	3,300	< 7300	7,300	< 89	89
2-Hexanone (Methyl Butyl Ketone)				< 30	30	< 1800	1,800	< 33	33	< 33	33	< 45	45	< 31	31	< 2200	2,200	< 2100	2,100	< 4600	4,600	< 30	30
4-Methyl-2-Pentanone				< 30	30	< 1800	1,800	< 33	33	< 33	33	< 45	45	< 31	31	< 2200	2,200	< 2100	2,100	< 4600	4,600	< 30	30
Acetone	50	100,000	70,000,000	< 30	30	**410**	360	**8.5**	33	**64**	33	**230**	45	**10**	31	**800**	440	**430**	420	**1,100**	910	**63**	30
Acrolein			500	< 24	24	< 500	500	< 26	26	< 26	26	< 36	36	< 25	25	< 500	500	< 500	500	< 500	500	< 24	24
Acrylonitrile			900	< 24	24	< 900	900	< 26	26	< 26	26	< 36	36	< 25	25	< 900	900	< 900	900	< 900	900	< 24	24
Benzene	60	4,800	2,000	< 6.0	6.0	< 60	60	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 60	60	< 60	60	< 91	91	< 5.9	5.9
Bromochloromethane				< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Bromodichloromethane			1,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Bromoform			81,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Bromomethane			25,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Carbon Disulfide			7,800,000	< 6.0	6.0	< 360	360	< 6.6	6.6	**2.1**	6.6	**14**	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Carbon tetrachloride	760	2,400	600	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 600	600	< 5.9	5.9
Chlorobenzene	1,100	100,000	510,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Chloroethane			220,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Chloroform	370	49,000	600	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 370	370	< 370	370	< 370	370	< 5.9	5.9
Chloromethane			4,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
cis-1,2-Dichloroethene	250	100,000	230,000	< 6.0	6.0	< 250	250	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	**370**	250	< 250	250	< 250	250	< 5.9	5.9
cis-1,3-Dichloropropene				< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Cyclohexane				< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Dibromochloromethane			3,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Dichlorodifluoromethane			490,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Ethylbenzene	1,000	41,000	7,800,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Isopropylbenzene				< 6.0	6.0	< 360	360	< 410	410	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	**68**	420	< 910	910	< 5.9	5.9
m&p-Xylenes	260	100,000		< 6.0	6.0	< 360	360	< 6.6	6.6	**1.4**	6.6	**4.3**	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Methyl Ethyl Ketone (2-Butanone)	120	100,000	3,100,000	< 36	36	< 360	360	< 39	39	< 39	39	**37**	54	< 37	37	< 440	440	< 420	420	< 910	910	**21**	35
Methyl t-butyl ether (MTBE)	930	100,000	110,000	< 12	12	< 710	710	< 13	13	< 13	13	< 18	18	< 12	12	< 870	870	< 830	830	< 930	930	< 12	12
Methylacetate			78,000,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Methylcyclohexane				< 6.0	6.0	**190**	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	**490**	440	< 420	420	**9,300**	910	**7.8**	5.9
Methylene chloride	50	100,000	34,000	< 6.0	6.0	< 360	360	< 6.6	6.6	**10**	6.6	**27**	9.0	**9.6**	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
o-Xylene	260	100,000		< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Styrene			90,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Tert-butyl alcohol			1,400,000	< 120	120	< 7100	7,100	< 130	130	< 130	130	< 180	180	< 120	120	< 8700	8,700	< 8300	8,300	< 18000	18,000	< 120	120
Tetrachloroethene	1,300	19,000	2,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Toluene	700	100,000	6,300,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	**0.91**	9.0	< 6.1	6.1	< 440	440	< 420	420	< 700	700	< 5.9	5.9
Total Xylenes			12,000,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
trans-1,2-Dichloroethene	190	100,000	300,000	< 6.0	6.0	< 190	190	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 190	190	< 190	190	< 190	190	< 5.9	5.9
trans-1,3-Dichloropropene				< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Trichloroethene	470	21,000	7,000	**0.91**	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	**74**	440	< 420	420	< 470	470	< 5.9	5.9
Trichlorofluoromethane			23,000,000	< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Trichlorotrifluoroethane				< 6.0	6.0	< 360	360	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	< 440	440	< 420	420	< 910	910	< 5.9	5.9
Vinyl Chloride	20	900	700	< 6.0	6.0	< 36	36	< 6.6	6.6	< 6.6	6.6	< 9.0	9.0	< 6.1	6.1	**51**	44	< 42	42	< 91	91	< 5.9	5.9

Notes:

** - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

ND - Not-detected

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NJ Residential Guidance Value

Table H-1
262 Green Street, Brooklyn New York
Waste Characterization Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NJ Residential Soil Cleanup Objectives	TEAL GRAB													
				(0-2')		(2-4')		(4-6')		(6-8')		(8-10')		(10-12')		(12-14')	
				3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/3/2017		3/4/2017	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1,1,2-Tetrachlorothane				< 24	24	< 25	25	< 26	26	< 25	25	< 26	26	< 25	25	< 28	28
1,1,1-Trichloroethane	680	100,000	290,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,1,2,2-Tetrachloroethane			1,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,1,2-Trichloroethane			2,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,1-Dichloroethane	270	26,000	8,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,1-Dichloroethene	330	100,000	11,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,2,3-Trichlorobenzene				< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,2,4-Trichlorobenzene			73,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,2-Dibromo-3-chloropropane			80	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,2-Dibromoethane			8	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,2-Dichlorobenzene	1,100	100,000	5,300,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,2-Dichloroethane	20	3,100	900	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,2-Dichloropropane			2,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,3-Dichlorobenzene	2,400	4,900	5,300,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,4-Dichlorobenzene	1,800	13,000	5,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
1,4-Dioxane	100	13,000		< 90	90	< 95	95	< 98	98	< 93	93	< 97	97	< 93	93	< 100	100
2-Hexanone (Methyl Butyl Ketone)				< 30	30	< 32	32	< 33	33	< 31	31	< 32	32	< 31	31	< 35	35
4-Methyl-2-Pentanone				< 30	30	< 32	32	< 33	33	< 31	31	< 32	32	< 31	31	< 35	35
Acetone	50	100,000	70,000,000	**14**	30	**150**	32	**9**	33	**71**	31	**70**	32	**91**	31	**97**	35
Acrolein			500	< 24	24	< 25	25	< 26	26	< 25	25	< 26	26	< 25	25	< 28	28
Acrylonitrile			900	< 24	24	< 25	25	< 26	26	< 25	25	< 26	26	< 25	25	< 28	28
Benzene	60	4,800	2,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Bromochloromethane				< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Bromodichloromethane			1,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Bromoform			81,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Bromomethane			25,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Carbon Disulfide			7,800,000	< 6.0	6.0	**2.4**	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	**1.3**	6.2	< 7.0	7.0
Carbon tetrachloride	760	2,400	600	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Chlorobenzene	1,100	100,000	510,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Chloroethane			220,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Chloroform	370	49,000	600	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Chloromethane			4,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
cis-1,2-Dichloroethene	250	100,000	230,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
cis-1,3-Dichloropropene				< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Cyclohexane				< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Dibromochloromethane			3,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Dichlorodifluoromethane			490,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Ethylbenzene	1,000	41,000	7,800,000	**0.75**	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Isopropylbenzene				< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
m&p-Xylenes	260	100,000		**3.2**	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Methyl Ethyl Ketone (2-Butanone)	120	100,000	3,100,000	< 36	36	**27**	38	< 39	39	**8**	37	**10**	39	**23**	37	**18**	42
Methyl t-butyl ether (MTBE)	930	100,000	110,000	< 12	12	< 13	13	< 13	13	< 12	12	< 13	13	< 12	12	< 14	14
Methylacetate			78,000,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Methylcyclohexane				< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Methylene chloride	50	100,000	34,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
o-Xylene	260	100,000		**1.9**	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Styrene			90,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Tert-butyl alcohol			1,400,000	< 120	120	< 130	130	< 130	130	< 120	120	< 130	130	< 120	120	< 140	140
Tetrachloroethene	1,300	19,000	2,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Toluene	700	100,000	6,300,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Total Xylenes			12,000,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
trans-1,2-Dichloroethene	190	100,000	300,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
trans-1,3-Dichloropropene				< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Trichloroethene	470	21,000	7,000	**1.1**	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Trichlorofluoromethane			23,000,000	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Trichlorotrifluoroethane				< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0
Vinyl Chloride	20	900	700	< 6.0	6.0	< 6.3	6.3	< 6.5	6.5	< 6.2	6.2	< 6.4	6.4	< 6.2	6.2	< 7.0	7.0

Notes:

** - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

ND - Not-detected

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NJ Residential Guidance Value

Table H-2
262 Green Street, Brooklyn, New York
Waste Characterization Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NJ Residential Soil Cleanup Objectives	GREEN COMP										PURPLE COMP									
				(0-3')		(3-6')		(6-9')		(9-12')		(12-15')		(0-3')		(3-6')		(6-9')		(9-12')		(12-15')	
				3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1'-Biphenyl			3,100,000	**330**	270	**1,800**	300	< 300	300	< 340	340	< 340	340	**410**	280	< 290	290	< 300	300	< 310	310	< 320	320
1,2,4,5-Tetrachlorobenzene				< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
2,3,4,6-Tetrachlorobenzene				< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
2,4,5-Trichlorophenol			6,100,000	< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
2,4,6-Trichlorophenol			19,000	< 160	160	< 170	170	< 170	170	< 190	190	< 190	190	< 160	160	< 170	170	< 170	170	< 180	180	< 190	190
2,4-Dichlorophenol			180,000	< 160	160	< 170	170	< 170	170	< 190	190	< 190	190	< 160	160	< 170	170	< 170	170	< 180	180	< 190	190
2,4-Dimethylphenol			1,200,000	< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	**140**	280	< 290	290	< 300	300	< 310	310	< 320	320
2,4-Dinitrophenol			120,000	< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
2,4-Dinitrotoluene			700	< 160	160	< 170	170	< 170	170	< 190	190	< 190	190	< 160	160	< 170	170	< 170	170	< 180	180	< 190	190
2,6-Dinitrotoluene			700	< 160	160	< 170	170	< 170	170	< 190	190	< 190	190	< 160	160	< 170	170	< 170	170	< 180	180	< 190	190
2-Chloronaphthalene				< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
2-Chlorophenol			310,000	< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
2-Methylnaphthalene			230,000	**1,100**	270	**4,300**	300	**400**	300	< 340	340	**160**	340	**1,200**	280	< 290	290	< 300	300	< 310	310	< 320	320
2-Methylphenol (o-cresol)	330	100,000	310,000	< 270	270	< 300	300	< 300	300	< 330	330	< 330	330	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
2-Nitroaniline			39,000	< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
2-Nitrophenol				< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
3&4-Methylphenol (m&p-cresol)				< 270	270	**290**	300	< 300	300	< 340	340	< 340	340	**260**	280	< 290	290	< 300	300	< 310	310	**190**	320
3,3'-Dichlorobenzidine			1,000	< 160	160	< 170	170	< 170	170	< 190	190	< 190	190	< 160	160	< 170	170	< 170	170	< 180	180	< 190	190
3-Nitroaniline				< 2000	2,000	< 2100	2,100	< 2200	2,200	< 2400	2,400	< 2400	2,400	< 2000	2,000	< 2100	2,100	< 2100	2,100	< 2200	2,200	< 2300	2,300
4,6-Dinitro-2-methylphenol			6,000	< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
4-Bromophenyl phenyl ether				< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
4-Chloro-3-methylphenol				< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
4-Chloroaniline				< 780	780	< 850	850	< 860	860	< 960	960	< 960	960	< 790	790	< 830	830	< 850	850	< 880	880	< 930	930
4-Chlorophenyl phenyl ether				< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
4-Nitroaniline				< 2000	2,000	< 2100	2,100	< 2200	2,200	< 2400	2,400	< 2400	2,400	< 2000	2,000	< 2100	2,100	< 2100	2,100	< 2200	2,200	< 2300	2,300
4-Nitrophenol				< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Acenaphthene	20,000	100,000	3,400,000	**2,400**	270	**11,000**	3,000	**1,500**	300	< 340	340	**410**	340	**3,000**	280	**230**	290	**160**	300	< 310	310	< 320	320
Acenaphthylene	100,000	100,000		**810**	160	**1,900**	170	**200**	170	< 190	190	< 190	190	**1,800**	160	**130**	170	< 170	170	< 180	180	< 190	190
Acetophenone			2,000	< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Anthracene	100,000	100,000	17,000,000	**5,200**	270	**20,000**	3,000	**2,600**	300	< 340	340	**540**	340	**7,200**	280	**660**	290	**280**	300	< 310	310	< 320	320
Atrazine			210,000	< 160	160	< 170	170	< 170	170	< 190	190	< 190	190	< 160	160	< 170	170	< 170	170	< 180	180	< 190	190
Benz(a)anthracene	1,000	1,000	600	**12,000**	1,300	**28,000**	1,400	**5,600**	300	**530**	340	**920**	340	**15,000**	1,300	**2,200**	290	**720**	300	**170**	310	**230**	320
Benzaldehyde				< 270	270	**250**	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Benzo(a)pyrene	1,000	1,000	200	**10,000**	1,300	**24,000**	1,400	**6,700**	170	**2,700**	190	**2,300**	190	**13,000**	1,300	**2,700**	170	**680**	170	**190**	180	**180**	190
Benzo(b)fluoranthene	1,000	1,000	600	**9,100**	1,300	**19,000**	1,400	**7,300**	300	**2,000**	340	**1,700**	340	**11,000**	1,300	**2,500**	290	**630**	300	**160**	310	**160**	320
Benzo(ghi)perylene	100,000	100,000	380,000,000	**5,400**	270	**12,000**	3,000	**3,100**	300	**1,200**	340	**1,300**	340	**7,500**	280	**1,600**	290	**380**	300	**210**	310	< 320	320
Benzo(k)fluoranthene	800	3,900	6,000	**5,200**	270	**5,700**	300	**4,500**	300	**2,300**	340	**1,500**	340	**4,600**	280	**2,100**	290	**630**	300	**180**	310	**180**	320
Benzyl butyl phthalate			1,200,000	**310**	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Bis(2-chloroethoxy)methane				< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Bis(2-chloroethyl)ether			400	< 160	160	< 170	170	< 170	170	< 190	190	< 190	190	< 160	160	< 170	170	< 170	170	< 180	180	< 190	190
Bis(2-chloroisopropyl)ether				< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Bis(2-ethylhexyl)phthalate			35,000	**12,000**	2,700	< 300	300	< 300	300	< 340	340	< 340	340	**850**	280	< 290	290	< 300	300	< 310	310	< 320	320
Caprolactam				< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Carbazole			24,000	**2,100**	270	**6,700**	300	**1,200**	300	< 340	340	< 340	340	**3,000**	280	**370**	290	< 300	300	< 310	310	< 320	320
Chrysene	1,000	3,900	62,000	**13,000**	1,300	**28,000**	1,400	**6,400**	300	**630**	340	**1,100**	340	**15,000**	1,300	**2,600**	290	**830**	300	**180**	310	**240**	320
Dibenz(a,h)anthracene	330	330	200	**1,800**	160	**4,400**	170	**510**	170	**310**	190	**340**	190	**2,000**	160	**370**	170	< 170	170	< 180	180	< 190	190
Dibenzofuran	7,000	59,000		**2,100**	270	**8,500**	300	**1,000**	300	< 340	340	**240**	340	**2,900**	280	**240**	290	< 300	300	< 310	310	< 320	320
Diethyl phthalate			49,000,000	< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Dimethylphthalate				< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Di-n-butylphthalate			6,100,000	**160**	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Di-n-octylphthalate			2,400,000	< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Fluoranthene	100,000	100,000	2,300,000	**27,000**	2,700	**68,000**	3,000	**11,000**	1,500	**670**	340	**2,100**	340	**38,000**	2,800	**4,500**	290	**1,400**	300	**380**	310	**530**	320
Fluorene	30,000	100,000	2,300,000	**2,700**	270	**14,000**	3,000	**1,600**	300	< 340	340	**380**	340	**4,000**	280	**330**	290	< 300	300	< 310	310	< 320	320
Hexachlorobenzene			300	< 160	160	< 170	170	< 170	170	< 190	190	< 190	190	< 160	160	< 170	170	< 170	170	< 180	180	< 190	190
Hexachlorobutadiene			6,000	< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Hexachlorocyclopentadiene			45,000	< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Hexachloroethane			35,000	< 160	160	< 170	170	< 170	170	< 190	190	< 190	190	< 160	160	< 170	170	< 170	170	< 180	180	< 190	190
Indeno(1,2,3-cd)pyrene	500	500	600	**6,300**	270	**13,000**	1,400	**3,500**	300	**1,300**	340	**1,500**	340	**7,900**	1,300	**1,800**	290	**390**	300	**190**	310	< 320	320
Isophorone			510,000	< 160	160	< 170	170	< 170	170	< 190	190	< 190	190	< 160	160	< 170	170	< 170	170	< 180	180	< 190	190
Naphthalene	12,000	100,000	6,000	**2,800**	270	**9,900**	3,000	**700**	300	**170**	340	**540**	340	**2,400**	280	**230**	290	**230**	300	< 310	310	**160**	320
Nitrobenzene			31,000	< 160	160	< 170	170	< 170	170	< 190	190	< 190	190	< 160	160	< 170	170	< 170	170	< 180	180	< 190	190
N-Nitrosodimethylamine			700	< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
N-Nitrosodi-n-propylamine			200	< 160	160	< 170	170	< 170	170	< 190	190	< 190	190	< 160	160	< 170	170	< 170	170	< 180	180	< 190	190
N-Nitrosodiphenylamine			99,000	< 160	160	< 170	170	< 170	170	< 190	190	< 190	190	< 160	160	< 170	170	< 170	170	< 180	180	< 190	190
Pentachlorophenol	800	6,700	3,000	< 270	270	< 300	300	< 300	300	< 340	340	< 340	340	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Phenanthrene	100,000	100,000		**24,000**	1,600	**75,000**	1,700	**11,000**	860	**580**	190	**2,200**	190	**34,000**	1,600	**3,900**	170	**1,200**	170	**380**	180	**690**	190
Phenol	330	100,000	18,000,000	< 270	270	< 300	300	< 300	300	< 330	330	< 330	330	< 280	280	< 290	290	< 300	300	< 310	310	< 320	320
Pyrene	100,000	100,000	1,700,000	**23,000**	2,700	**61,000**	3,000	**9,800**	1,500	**670**	340	**2,100**	340	**32,000**	2,800	**4,100**	290	**1,400**	300	**400**	310	**530**	320

Notes:

** - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

ND - Not-detected

RL - Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NJ Residential Guidance Value

Table H-2
262 Green Street, Brooklyn, New York
Waste Characterization Analytical Results
Semi-Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NJ Residential Soil Cleanup Objectives	TEAL GRAB													
				(0-2')		(2-4')		(4-6')		(6-8')		(8-10')		(10-12')		(12-14')	
				3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/3/2017		3/4/2017	
				µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1,1'-Biphenyl			3,100,000	**450**	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
1,2,4,5-Tetrachlorobenzene				< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
2,3,4,6-Tetrachlorobenzene				< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
2,4,5-Trichlorophenol			6,100,000	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
2,4,6-Trichlorophenol			19,000	< 160	160	< 160	160	< 150	150	< 250	250	< 150	150	< 150	150	< 200	200
2,4-Dichlorophenol			180,000	< 160	160	< 160	160	< 150	150	< 250	250	< 150	150	< 150	150	< 200	200
2,4-Dimethylphenol			1,200,000	**120**	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
2,4-Dinitrophenol			120,000	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	**1,100**	360
2,4-Dinitrotoluene			700	< 160	160	< 160	160	< 150	150	< 250	250	< 150	150	< 150	150	< 200	200
2,6-Dinitrotoluene			700	< 160	160	< 160	160	< 150	150	< 250	250	< 150	150	< 150	150	< 200	200
2-Chloronaphthalene				< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
2-Chlorophenol			310,000	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
2-Methylnaphthalene			230,000	**1,400**	280	**240**	280	**210**	260	< 430	430	< 260	260	< 260	260	< 360	360
2-Methylphenol (o-cresol)	330	100,000	310,000	< 280	280	< 280	280	< 260	260	< 330	330	< 260	260	< 260	260	< 330	330
2-Nitroaniline			39,000	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
2-Nitrophenol				< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
3&4-Methylphenol (m&p-cresol)				< 280	280	< 280	280	**300**	260	**390**	430	**260**	260	**180**	260	< 360	360
3,3'-Dichlorobenzidine			1,000	< 160	160	< 160	160	< 150	150	< 250	250	< 150	150	< 150	150	< 200	200
3-Nitroaniline				< 2000	2,000	< 2000	2,000	< 1900	1,900	< 3100	3,100	< 1900	1,900	< 1900	1,900	< 2600	2,600
4,6-Dinitro-2-methylphenol			6,000	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	**1,300**	360
4-Bromophenyl phenyl ether				< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
4-Chloro-3-methylphenol				< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
4-Chloroaniline				< 790	790	< 800	800	< 740	740	< 1200	1,200	< 760	760	< 750	750	< 1000	1,000
4-Chlorophenyl phenyl ether				< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
4-Nitroaniline				< 2000	2,000	< 2000	2,000	< 1900	1,900	< 3100	3,100	< 1900	1,900	< 1900	1,900	< 2600	2,600
4-Nitrophenol				< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Acenaphthene	20,000	100,000	3,400,000	**3,900**	280	**740**	280	**910**	260	**340**	430	**150**	260	**120**	260	**220**	360
Acenaphthylene	100,000	100,000		**1,000**	160	**250**	160	**230**	150	**210**	250	< 150	150	< 150	150	< 200	200
Acetophenone			2,000	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Anthracene	100,000	100,000	17,000,000	**9,800**	2,800	**1,600**	280	**2,400**	260	**1,000**	430	**230**	260	**210**	260	**540**	360
Atrazine			210,000	< 160	160	< 160	160	< 150	150	< 250	250	< 150	150	< 150	150	< 200	200
Benz(a)anthracene	1,000	1,000	600	**13,000**	1,300	**4,200**	280	**4,000**	260	**2,600**	430	**590**	260	**390**	260	**1,200**	360
Benzaldehyde				< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	**130**	260	< 360	360
Benzo(a)pyrene	1,000	1,000	200	**11,000**	1,300	**5,300**	160	**4,000**	150	**3,300**	200	**1,400**	150	**740**	150	**1,000**	200
Benzo(b)fluoranthene	1,000	1,000	600	**8,800**	1,300	**5,400**	280	**4,000**	260	**2,800**	430	**1,100**	260	**490**	260	**800**	360
Benzo(ghi)perylene	100,000	100,000	380,000,000	**5,500**	280	**3,000**	280	**2,000**	260	**1,800**	430	**930**	260	**550**	260	**440**	360
Benzo(k)fluoranthene	800	3,900	6,000	**6,200**	280	**3,600**	280	**2,700**	260	**2,500**	430	**1,100**	260	**550**	260	**810**	360
Benzyl butyl phthalate			1,200,000	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Bis(2-chloroethoxy)methane				< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Bis(2-chloroethyl)ether			400	< 160	160	< 160	160	< 150	150	< 250	250	< 150	150	< 150	150	< 200	200
Bis(2-chloroisopropyl)ether				< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Bis(2-ethylhexyl)phthalate			35,000	**310**	280	**140**	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Caprolactam				< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Carbazole			24,000	**3,600**	280	**720**	280	**860**	260	**530**	430	< 260	260	< 260	260	< 360	360
Chrysene	1,000	3,900	62,000	**13,000**	1,300	**4,900**	280	**4,300**	260	**2,900**	430	**670**	260	**430**	260	**1,300**	360
Dibenz(a,h)anthracene	330	330	200	**1,900**	160	**1,100**	160	**340**	150	**490**	200	**230**	150	**160**	150	< 200	200
Dibenzofuran	7,000	59,000		**3,200**	280	**510**	280	**710**	260	**350**	430	< 260	260	< 260	260	**200**	360
Diethyl phthalate			49,000,000	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Dimethylphthalate				< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Di-n-butylphthalate			6,100,000	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Di-n-octylphthalate			2,400,000	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Fluoranthene	100,000	100,000	2,300,000	**33,000**	2,800	**9,500**	1,400	**11,000**	1,300	**5,600**	430	**1,100**	260	**840**	260	**2,600**	360
Fluorene	30,000	100,000	2,300,000	**4,800**	280	**730**	280	**1,200**	260	**500**	430	< 260	260	< 260	260	**380**	360
Hexachlorobenzene			300	< 160	160	< 160	160	< 150	150	< 250	250	< 150	150	< 150	150	< 200	200
Hexachlorobutadiene			6,000	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Hexachlorocyclopentadiene			45,000	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Hexachloroethane			35,000	< 160	160	< 160	160	< 150	150	< 250	250	< 150	150	< 150	150	< 200	200
Indeno(1,2,3-cd)pyrene	500	500	600	**6,600**	280	**3,100**	280	**2,500**	260	**2,200**	430	**1,100**	260	**640**	260	**530**	360
Isophorone			510,000	< 160	160	< 160	160	< 150	150	< 250	250	< 150	150	< 150	150	< 200	200
Naphthalene	12,000	100,000	6,000	**3,100**	280	**480**	280	**390**	260	**250**	430	**190**	260	< 260	260	< 360	360
Nitrobenzene			31,000	< 160	160	< 160	160	< 150	150	< 250	250	< 150	150	< 150	150	< 200	200
N-Nitrosodimethylamine			700	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
N-Nitrosodi-n-propylamine			200	< 160	160	< 160	160	< 150	150	< 200	200	< 150	150	< 150	150	< 200	200
N-Nitrosodiphenylamine			99,000	< 160	160	< 160	160	< 150	150	< 250	250	< 150	150	< 150	150	< 200	200
Pentachlorophenol	800	6,700	3,000	< 280	280	< 280	280	< 260	260	< 430	430	< 260	260	< 260	260	< 360	360
Phenanthrene	100,000	100,000		**35,000**	1,600	**7,400**	160	**10,000**	740	**5,200**	250	**840**	150	**910**	150	**3,000**	200
Phenol	330	100,000	18,000,000	< 280	280	< 280	280	< 260	260	< 330	330	< 260	260	< 260	260	< 330	330
Pyrene	100,000	100,000	1,700,000	**28,000**	2,800	**8,300**	1,400	**9,500**	1,300	**5,200**	430	**1,000**	260	**800**	260	**2,500**	360

Notes:

** - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

ND - Not-detected

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Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NJ Residential Guidance Value

Table H-3
262 Green Street, Brooklyn New York
Waste Characterization Analytical Results
Pesticides/PCBs

	PCBs	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NJ Residential Soil Cleanup Objectives	GREEN COMP										PURPLE COMP									
					(0-3')		(3-6')		(6-9')		(9-12')		(12-15')		(0-3')		(3-6')		(6-9')		(9-12')		(12-15')	
					3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017	
					µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
					Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Pesticides	4,4' -DDD	3.3	2,600	3,000	< 9.8	9.8	< 11	11	< 2.6	2.6	< 2.9	2.9	< 2.9	2.9	< 9.8	9.8	< 2.4	2.4	< 2.5	2.5	< 2.6	2.6	< 2.8	2.8
	4,4' -DDE	3.3	1,800	2,000	< 12	12	< 11	11	< 2.6	2.6	< 2.9	2.9	< 2.9	2.9	**160**	12	< 2.4	2.4	< 2.5	2.5	< 2.6	2.6	< 2.8	2.8
	4,4' -DDT	3.3	1,700	2,000	< 9.8	9.8	< 11	11	< 2.6	2.6	< 2.9	2.9	< 2.9	2.9	**20**	12	< 2.4	2.4	< 2.5	2.5	< 2.6	2.6	< 2.8	2.8
	a-BHC	20	97	100	< 20	20	< 11	11	< 8.5	8.5	< 9.5	9.5	< 9.8	9.8	< 20	20	< 8.1	8.1	< 8.3	8.3	< 8.7	8.7	< 9.2	9.2
	A-Chlordane				< 20	20	< 21	21	< 4.3	4.3	< 4.8	4.8	< 4.9	4.9	< 20	20	< 4.1	4.1	< 4.2	4.2	< 4.3	4.3	< 4.6	4.6
	Aldrin	5	19	40	< 9.8	9.8	< 11	11	< 4.3	4.3	< 4.8	4.8	< 4.9	4.9	< 20	20	< 4.1	4.1	< 4.2	4.2	< 4.3	4.3	< 4.6	4.6
	b-BHC	36	72	400	< 20	20	< 11	11	< 8.5	8.5	< 9.5	9.5	< 9.8	9.8	< 20	20	< 8.1	8.1	< 8.3	8.3	< 8.7	8.7	< 9.2	9.2
	Chlordane			200	< 200	200	< 210	210	< 43	43	< 48	48	< 49	49	< 200	200	< 41	41	< 42	42	< 43	43	< 46	46
	d-BHC	40	100,000		< 39	39	< 21	21	< 8.5	8.5	< 9.5	9.5	< 9.8	9.8	< 39	39	< 8.1	8.1	< 8.3	8.3	< 8.7	8.7	< 9.2	9.2
	Dieldrin	5	39	40	< 9.8	9.8	< 11	11	< 4.3	4.3	< 4.8	4.8	< 4.9	4.9	< 9.8	9.8	< 4.1	4.1	< 4.2	4.2	< 4.3	4.3	< 4.6	4.6
	Endosulfan I	2,400	4,800		< 20	20	< 43	43	< 8.5	8.5	< 9.5	9.5	< 9.8	9.8	< 39	39	< 8.1	8.1	< 8.3	8.3	< 8.7	8.7	< 9.2	9.2
	Endosulfan II	2,400	4,800		< 39	39	< 21	21	< 8.5	8.5	< 9.5	9.5	< 9.8	9.8	< 39	39	< 8.1	8.1	< 8.3	8.3	< 8.7	8.7	< 9.2	9.2
	Endosulfan sulfate	2,400	4,800	470,000	< 39	39	< 21	21	< 8.5	8.5	< 9.5	9.5	< 9.8	9.8	< 39	39	< 8.1	8.1	< 8.3	8.3	< 8.7	8.7	< 9.2	9.2
	Endrin	14	2,200	23,000	< 20	20	< 21	21	< 8.5	8.5	< 9.5	9.5	< 9.8	9.8	< 20	20	< 8.1	8.1	< 8.3	8.3	< 8.7	8.7	< 9.2	9.2
	Endrin aldehyde				< 39	39	< 21	21	< 8.5	8.5	< 9.5	9.5	< 9.8	9.8	< 39	39	< 8.1	8.1	< 8.3	8.3	< 8.7	8.7	< 9.2	9.2
	Endrin ketone				< 39	39	< 43	43	< 8.5	8.5	< 9.5	9.5	< 9.8	9.8	< 39	39	< 8.1	8.1	< 8.3	8.3	< 8.7	8.7	< 9.2	9.2
	g-BHC	100	280	400	< 7.9	7.9	< 8.5	8.5	< 1.7	1.7	< 1.9	1.9	< 2.0	2.0	< 7.9	7.9	< 1.6	1.6	< 1.7	1.7	< 1.7	1.7	< 1.8	1.8
	g-Chlordane				< 20	20	< 21	21	< 4.3	4.3	< 4.8	4.8	< 4.9	4.9	< 20	20	< 4.1	4.1	< 4.2	4.2	< 4.3	4.3	< 4.6	4.6
	Heptachlor	42	420	100	< 39	39	< 21	21	< 8.5	8.5	< 9.5	9.5	< 9.8	9.8	< 39	39	< 8.1	8.1	< 8.3	8.3	< 8.7	8.7	< 9.2	9.2
	Heptachlor epoxide			70	< 39	39	< 43	43	< 8.5	8.5	< 9.5	9.5	< 9.8	9.8	< 39	39	< 8.1	8.1	< 8.3	8.3	< 8.7	8.7	< 9.2	9.2
	Methoxychlor			390,000	< 200	200	< 210	210	< 43	43	< 48	48	< 49	49	< 200	200	< 41	41	< 42	42	< 43	43	< 46	46
	Toxaphene			600	< 790	790	< 850	850	< 170	170	< 190	190	< 200	200	< 790	790	< 160	160	< 170	170	< 170	170	< 180	180
PCBs	PCB-1016	100	1,000		< 79	79	< 85	85	< 85	85	< 95	95	< 98	98	< 79	79	< 81	81	< 83	83	< 87	87	< 92	92
	PCB-1221	100	1,000		< 79	79	< 85	85	< 85	85	< 95	95	< 98	98	< 79	79	< 81	81	< 83	83	< 87	87	< 92	92
	PCB-1232	100	1,000		< 79	79	< 85	85	< 85	85	< 95	95	< 98	98	< 79	79	< 81	81	< 83	83	< 87	87	< 92	92
	PCB-1242	100	1,000	200	< 79	79	< 85	85	< 85	85	< 95	95	< 98	98	< 79	79	< 81	81	< 83	83	< 87	87	< 92	92
	PCB-1248	100	1,000	200	< 79	79	< 85	85	< 85	85	< 95	95	< 98	98	**380**	79	< 81	81	< 83	83	< 87	87	< 92	92
	PCB-1254	100	1,000	200	**410**	79	< 85	85	< 85	85	< 95	95	< 98	98	< 79	79	< 81	81	< 83	83	< 87	87	< 92	92
	PCB-1260	100	1,000	200	< 79	79	< 85	85	< 85	85	< 95	95	< 98	98	< 79	79	< 81	81	< 83	83	< 87	87	< 92	92
	PCB-1262	100	1,000		< 79	79	< 85	85	< 85	85	< 95	95	< 98	98	< 79	79	< 81	81	< 83	83	< 87	87	< 92	92
	PCB-1268	100	1,000		< 79	79	< 85	85	< 85	85	< 95	95	< 98	98	< 79	79	< 81	81	< 83	83	< 87	87	< 92	92

Notes:

** - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

Dash - Not Analyzed

ND - Non-Detect

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NJ Residential Guidance Value

Table H-3
262 Green Street, Brooklyn New York
Waste Characterization Analytical Results
Pesticides/PCBs

PCBs	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	TEAL GRAB													
			(0-2')		(2-4')		(4-6')		(6-8')		(8-10')		(10-12')		(12-14')	
			3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/3/2017		3/4/2017	
			µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
			Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
4,4' -DDD	3.3	2,600	< 9.7	9.7	< 2.4	2.4	< 2.2	2.2	< 3.1	3.1	< 2.3	2.3	< 2.3	2.3	< 3.1	3.1
4,4' -DDE	3.3	1,800	< 9.7	9.7	< 2.4	2.4	< 2.2	2.2	< 3.1	3.1	< 2.3	2.3	< 2.3	2.3	< 3.1	3.1
4,4' -DDT	3.3	1,700	< 9.7	9.7	< 2.4	2.4	< 2.2	2.2	< 3.1	3.1	< 2.3	2.3	< 2.3	2.3	< 3.1	3.1
a-BHC	20	97	< 9.7	9.7	< 8.0	8.0	< 7.4	7.4	< 12	12	< 7.5	7.5	< 7.7	7.7	< 10	10
A-Chlordane			< 19	19	< 4.0	4.0	< 3.7	3.7	< 6.1	6.1	< 3.8	3.8	< 3.9	3.9	< 5.1	5.1
Aldrin	5	19	< 9.7	9.7	< 4.0	4.0	< 3.7	3.7	< 3.1	3.1	< 3.8	3.8	< 3.9	3.9	< 2.6	2.6
b-BHC	36	72	< 19	19	< 8.0	8.0	< 7.4	7.4	< 12	12	< 7.5	7.5	< 7.7	7.7	< 10	10
Chlordane			< 190	190	< 40	40	< 37	37	< 61	61	< 38	38	< 39	39	< 51	51
d-BHC	40	100,000	< 39	39	< 8.0	8.0	< 7.4	7.4	< 12	12	< 7.5	7.5	< 7.7	7.7	< 10	10
Dieldrin	5	39	< 9.7	9.7	< 4.0	4.0	< 3.7	3.7	< 3.1	3.1	< 3.8	3.8	< 3.9	3.9	< 2.6	2.6
Endosulfan I	2,400	4,800	< 39	39	< 8.0	8.0	< 7.4	7.4	< 12	12	< 7.5	7.5	< 7.7	7.7	< 10	10
Endosulfan II	2,400	4,800	< 39	39	< 8.0	8.0	< 7.4	7.4	< 12	12	< 7.5	7.5	< 7.7	7.7	< 10	10
Endosulfan sulfate	2,400	4,800	< 39	39	< 8.0	8.0	< 7.4	7.4	< 12	12	< 7.5	7.5	< 7.7	7.7	< 10	10
Endrin	14	2,200	< 19	19	< 8.0	8.0	< 7.4	7.4	< 12	12	< 7.5	7.5	< 7.7	7.7	< 10	10
Endrin aldehyde			< 39	39	< 8.0	8.0	< 7.4	7.4	< 12	12	< 7.5	7.5	< 7.7	7.7	< 10	10
Endrin ketone			< 39	39	< 8.0	8.0	< 7.4	7.4	< 12	12	< 7.5	7.5	< 7.7	7.7	< 10	10
g-BHC	100	280	< 7.7	7.7	< 3.0	3.0	< 1.5	1.5	< 2.5	2.5	< 1.5	1.5	< 1.5	1.5	< 2.0	2.0
g-Chlordane			< 19	19	< 4.0	4.0	< 3.7	3.7	< 6.1	6.1	< 3.8	3.8	< 3.9	3.9	< 5.1	5.1
Heptachlor	42	420	< 39	39	< 8.0	8.0	< 7.4	7.4	< 12	12	< 7.5	7.5	< 7.7	7.7	< 10	10
Heptachlor epoxide			< 39	39	< 8.0	8.0	< 7.4	7.4	< 12	12	< 7.5	7.5	< 7.7	7.7	< 10	10
Methoxychlor			< 190	190	< 40	40	< 37	37	< 61	61	< 38	38	< 39	39	< 51	51
Toxaphene			< 770	770	< 160	160	< 150	150	< 250	250	< 150	150	< 150	150	< 200	200
PCB-1016	100	1,000	< 77	77	< 80	80	< 74	74	< 61	61	< 75	75	< 77	77	< 100	100
PCB-1221	100	1,000	< 77	77	< 80	80	< 74	74	< 61	61	< 75	75	< 77	77	< 100	100
PCB-1232	100	1,000	< 77	77	< 80	80	< 74	74	< 61	61	< 75	75	< 77	77	< 100	100
PCB-1242	100	1,000	< 77	77	< 80	80	< 74	74	< 61	61	< 75	75	< 77	77	< 100	100
PCB-1248	100	1,000	< 77	77	< 80	80	< 74	74	< 61	61	< 75	75	< 77	77	< 100	100
PCB-1254	100	1,000	**210**	77	**140**	80	< 74	74	< 61	61	< 75	75	< 77	77	< 100	100
PCB-1260	100	1,000	< 77	77	< 80	80	< 74	74	< 61	61	< 75	75	< 77	77	< 100	100
PCB-1262	100	1,000	< 77	77	< 80	80	< 74	74	< 61	61	< 75	75	< 77	77	< 100	100
PCB-1268	100	1,000	< 77	77	< 80	80	< 74	74	< 61	61	< 75	75	< 77	77	< 100	100

ɪs:

NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

- Not Analyzed

Non-Detect

ighlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

ighlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

ighlighted- Indicated exceedance of the NJ Residential Guidance Value

Table H-4
262 Green Street, Brooklyn New York
Waste Characterization Analytical Results
Chlorinated Herbicides

Chlorinated Herbicides	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	GREEN COMP										PURPLE COMP									
			(0-3')		(3-6')		(6-9')		(9-12')		(12-15')		(0-3')		(3-6')		(6-9')		(9-12')		(12-15')	
			3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017	
			µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
			Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
2,4,5-T			< 100	100	< 110	110	< 110	110	< 120	120	< 120	120	< 99	99	< 100	100	< 110	110	< 110	110	< 120	120
2,4,5-TP (Silvex)	3,800	100,000	< 100	100	< 110	110	< 110	110	< 120	120	< 120	120	< 99	99	< 100	100	< 110	110	< 110	110	< 120	120
2,4-D			< 200	200	< 210	210	< 220	220	< 240	240	< 250	250	< 200	200	< 210	210	< 210	210	< 220	220	< 230	230
2,4-DB			< 2000	2,000	< 2100	2,100	< 2200	2,200	< 2400	2,400	< 2500	2,500	< 2000	2,000	< 2100	2,100	< 2100	2,100	< 2200	2,200	< 2300	2,300
Dalapon			< 100	100	< 110	110	< 110	110	< 120	120	< 120	120	< 99	99	< 100	100	< 110	110	< 110	110	< 120	120
Dicamba			< 100	100	< 110	110	< 110	110	< 120	120	< 120	120	< 99	99	< 100	100	< 110	110	< 110	110	< 120	120
Dichloroprop			< 200	200	< 210	210	< 220	220	< 240	240	< 250	250	< 200	200	< 210	210	< 210	210	< 220	220	< 230	230
Dinoseb			< 200	200	< 210	210	< 220	220	< 240	240	< 250	250	< 200	200	< 210	210	< 210	210	< 220	220	< 230	230

Notes:

** - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Table H-4
262 Green Street, Brooklyn New York
Waste Characterization Analytical Results
Chlorinated Herbicides

Chlorinated Herbicides	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	TEAL GRAB													
			(0-2')		(2-4')		(4-6')		(6-8')		(8-10')		(10-12')		(12-14')	
			3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/3/2017		3/4/2017	
			µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
			Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
2,4,5-T			< 99	99	< 100	100	< 94	94	< 150	150	< 97	97	< 97	97	< 130	130
2,4,5-TP (Silvex)	3,800	100,000	< 99	99	< 100	100	< 94	94	< 150	150	< 97	97	< 97	97	< 130	130
2,4-D			< 200	200	< 210	210	< 190	190	< 300	300	< 190	190	< 190	190	< 260	260
2,4-DB			< 2000	2,000	< 2100	2,100	< 1900	1,900	< 3000	3,000	< 1900	1,900	< 1900	1,900	< 2600	2,600
Dalapon			< 99	99	< 100	100	< 94	94	< 150	150	< 97	97	< 97	97	< 130	130
Dicamba			< 99	99	< 100	100	< 94	94	< 150	150	< 97	97	< 97	97	< 130	130
Dichloroprop			< 200	200	< 210	210	< 190	190	< 300	300	< 190	190	< 190	190	< 260	260
Dinoseb			< 200	200	< 210	210	< 190	190	< 300	300	< 190	190	< 190	190	< 260	260

Notes:

** - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Table H-5
262 Green Street, Brooklyn New York
Waste Characterization Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NJ Residential Soil Cleanup Objectives	GREEN COMP										PURPLE COMP									
				(0-3')		(3-6')		(6-9')		(9-12')		(12-15')		(0-3')		(3-6')		(6-9')		(9-12')		(12-15')	
				3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum			78,000	**5,830**	38	**5,680**	39	**8,320**	41	**7,220**	48	**9,310**	45	**4,260**	37	**6,850**	43	**7,240**	41	**7,020**	43	**6,640**	46
Antimony			31	**58.9**	1.9	**12.3**	1.9	< 2.0	2.0	< 2.4	2.4	< 2.2	2.2	**11.1**	1.8	**4.5**	2.2	< 2.1	2.1	< 2.2	2.2	< 2.3	2.3
Arsenic	13	16	19	**67.8**	0.75	**30.8**	0.77	**19**	0.81	**19.2**	0.97	**21.9**	0.90	**121**	0.73	**30.3**	0.87	**13.9**	0.82	**15.1**	0.87	**15.5**	0.93
Barium	350	400	16,000	**778**	0.8	**417**	0.8	**198**	0.8	**281**	1.0	**224**	0.9	**342**	0.7	**166**	0.9	**185**	0.8	**127**	0.9	**2,210**	8.7
Beryllium	7.2	14	16	**0.62**	0.30	**0.41**	0.31	**0.62**	0.32	**0.66**	0.39	**0.64**	0.36	**0.57**	0.29	**0.5**	0.35	**0.46**	0.33	**0.63**	0.35	**0.4**	0.37
Cadmium	2.5	4.3	78	**7.13**	0.38	**2.9**	0.39	**0.58**	0.41	**0.5**	0.48	**0.86**	0.45	**4.1**	0.37	**1.43**	0.43	**0.68**	0.41	< 0.43	0.43	**1.47**	0.46
Calcium				**20,300**	38	**14,300**	39	**9,580**	4.1	**49,300**	48	**9,320**	4.5	**18,300**	37	**6,380**	4.3	**11,800**	4.1	**14,400**	43	**33,700**	46
Chromium	30	180		**102**	0.38	**33.3**	0.39	**20.9**	0.41	**16.2**	0.48	**21.7**	0.45	**32.3**	0.37	**16**	0.43	**16.6**	0.41	**15.1**	0.43	**26.2**	0.46
Chromium, Hex	1	110		< 0.48	0.48	< 0.51	0.51	< 0.50	0.50	< 0.58	0.58	< 0.59	0.59	< 0.48	0.48	< 0.49	0.49	< 0.50	0.50	< 0.52	0.52	< 0.54	0.54
Cobalt			1,600	**22.1**	0.38	**24.6**	0.39	**8.89**	0.41	**7.19**	0.48	**8.27**	0.45	**13.8**	0.37	**9.78**	0.43	**8.42**	0.41	**9.32**	0.43	**7.37**	0.46
Copper	50	270	3,100	**849**	3.8	**307**	3.9	**111**	0.41	**308**	4.8	**68.4**	0.45	**628**	3.7	**120**	0.43	**60.4**	0.41	**43.7**	0.43	**43.5**	0.46
Iron				**156,000**	380	**64,300**	39	**17,900**	41	**13,000**	48	**23,100**	45	**66,500**	37	**28,500**	43	**19,500**	41	**15,500**	43	**23,200**	46
Lead	63	400	400	**2,420**	75	**2,920**	77	**984**	8.1	**2,220**	97	**505**	9.0	**1,680**	73	**651**	8.7	**735**	8.2	**314**	8.7	**3,180**	93
Magnesium				**2,280**	3.8	**1,610**	3.9	**1,480**	4.1	**1,110**	4.8	**1,610**	4.5	**1,980**	3.7	**1,480**	4.3	**2,730**	4.1	**1,480**	4.3	**2,010**	4.6
Manganese	1,600	2,000	11,000	**1,070**	3.8	**447**	3.9	**208**	4.1	**117**	0.48	**190**	4.5	**356**	3.7	**279**	4.3	**467**	4.1	**385**	4.3	**241**	4.6
Mercury	0.18	0.81	23	**4.23**	0.16	**14.4**	0.32	**1.58**	0.03	**0.87**	0.04	**4.87**	0.19	**2.41**	0.16	**8.46**	0.31	**3.81**	0.17	**0.43**	0.03	**0.63**	0.04
Molybdenum				**9.62**	0.38	**2.99**	0.39	**3.33**	0.41	**4.32**	0.48	**6.54**	0.45	**3.75**	0.37	**2.24**	0.43	**1.63**	0.41	**4.14**	0.43	**3.07**	0.46
Nickel	30	310	1,600	**57.6**	0.38	**111**	0.39	**20.2**	0.41	**15.7**	0.48	**17.2**	0.45	**33.6**	0.37	**20.9**	0.43	**18**	0.41	**18.2**	0.43	**15.5**	0.46
Potassium				**1,100**	8	**967**	8	**1,210**	8	**958**	10	**1,640**	9	**786**	7	**1,080**	9	**1,210**	8	**952**	9	**1,150**	9
Selenium	3.9	180	390	< 1.5	1.5	< 1.5	1.5	< 1.6	1.6	< 1.9	1.9	< 1.8	1.8	< 1.5	1.5	< 1.7	1.7	< 1.6	1.6	< 1.7	1.7	< 1.9	1.9
Silver	2	180	390	**2.77**	0.38	**0.52**	0.39	< 0.41	0.41	< 0.48	0.48	< 0.45	0.45	**0.93**	0.37	< 0.43	0.43	< 0.41	0.41	< 0.43	0.43	< 0.46	0.46
Sodium				**322**	75	**427**	77	**441**	81	**1,080**	97	**1,070**	90	**212**	73	**356**	87	**278**	82	**497**	9	**352**	9
Thallium			5	< 1.5	1.5	< 1.5	1.5	< 1.6	1.6	< 1.9	1.9	< 1.8	1.8	< 1.5	1.5	< 1.7	1.7	< 1.6	1.6	< 1.7	1.7	< 1.9	1.9
Vanadium			78	**33**	0.38	**27.1**	0.39	**30**	0.41	**29.1**	0.48	**27.2**	0.45	**19.4**	0.37	**24.1**	0.43	**22.7**	0.41	**31.8**	0.43	**24.2**	0.46
Zinc	109	10,000	23,000	**1,930**	75	**965**	7.7	**272**	8.1	**261**	9.7	**385**	9.0	**1,540**	73	**439**	8.7	**273**	8.2	**134**	0.9	**3,010**	93

Notes:

** - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

BRL - Below Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NJ Residential Guidance Value

Table H-5
262 Green Street, Brooklyn New York
Waste Characterization Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	NJ Residential Soil Cleanup Objectives	TEAL GRAB													
				(0-2')		(2-4')		(4-6')		(6-8')		(8-10')		(10-12')		(12-14')	
				3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/3/2017		3/4/2017	
				mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Aluminum			78,000	5,770	38	6,770	43	7,210	37	14,000	59	6,990	38	10,200	40	11,200	46
Antimony			31	87.5	2.0	55.5	1.9	14.5	1.7	< 2.9	2.9	< 1.9	1.9	< 2.0	2.0	< 2.3	2.3
Arsenic	13	16	19	81.6	0.75	73.2	0.86	27	0.74	19.2	1.2	10.5	0.76	7.79	0.80	10.7	0.93
Barium	350	400	16,000	427	0.8	460	0.8	285	0.7	336	1.1	173	0.8	145	0.8	69.5	1.0
Beryllium	7.2	14	16	0.38	0.30	0.49	0.34	0.42	0.30	0.83	0.47	0.43	0.30	0.57	0.32	0.6	0.37
Cadmium	2.5	4.3	78	10	0.38	5.91	0.43	1.29	0.37	1.17	0.59	0.62	0.38	0.5	0.40	1.47	0.46
Calcium				10,600	3.8	10,300	4.3	12,100	37	12,600	5.9	7,930	3.8	8,940	4.0	13,100	4.6
Chromium	30	180		75	0.38	47.2	0.43	32.1	0.37	31.5	0.59	18.2	0.38	24.6	0.40	21.4	0.46
Chromium, Hex	1	110		< 0.48	0.48	< 0.49	0.49	< 0.45	0.45	< 0.72	0.72	< 0.45	0.45	< 0.46	0.46	< 0.60	0.60
Cobalt			1,600	28	0.38	23.4	0.43	7.47	0.37	15.2	0.59	8.47	0.38	10.1	0.40	15.1	0.46
Copper	50	270	3,100	642	3.8	769	4.3	1,170	3.7	91.6	0.59	106	0.38	42.9	0.40	68.6	0.46
Iron				189,000	410	155,000	430	24,600	37	46,700	59	19,400	38	21,000	40	62,800	46
Lead	63	400	400	3,540	82	2,990	86	1,880	74	1,110	12	574	7.6	366	8.0	3,100	93
Magnesium				1,470	3.8	1,710	4.3	1,410	3.7	3,250	5.9	1,710	3.8	3,140	4.0	3,340	4.6
Manganese	1,600	2,000	11,000	1,250	3.8	784	4.3	273	3.7	733	5.9	504	3.8	256	4.0	1,140	4.6
Mercury	0.18	0.81	23	2.46	0.31	3.25	0.32	5.1	0.29	1.21	0.05	1.46	0.03	3.81	0.30	1.29	0.04
Molybdenum				7.39	0.38	4.41	0.43	1.82	0.37	1.96	0.59	1.53	0.38	1.59	0.40	2.08	0.46
Nickel	30	310	1,600	91.1	0.38	57.5	0.43	16	0.37	27	0.59	14	0.38	16.9	0.40	27.7	0.46
Potassium				792	8	967	9	1,110	7	2,080	12	1,050	8	2,140	8	1,300	9
Selenium	3.9	180	390	< 1.6	1.6	< 1.5	1.5	< 1.5	1.5	< 2.3	2.3	< 1.5	1.5	< 1.6	1.6	< 1.9	1.9
Silver	2	180	390	4.68	0.41	2.42	0.38	1.1	0.34	< 0.59	0.59	< 0.38	0.38	< 0.40	0.40	< 0.46	0.46
Sodium				265	8	390	9	474	7	761	12	331	8	375	8	590	9
Thallium			5	< 1.5	1.5	< 1.7	1.7	< 1.5	1.5	< 2.3	2.3	< 1.5	1.5	< 1.6	1.6	< 1.9	1.9
Vanadium			78	42	0.38	35.4	0.43	22.5	0.37	42.6	0.59	23.2	0.38	30.9	0.40	34.9	0.46
Zinc	109	10,000	23,000	1,790	82	1,220	8.6	810	7.4	434	12	236	7.6	174	8.0	180	0.9

Notes:

** - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

BRL - Below Reporting Limit

Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Bold/highlighted- Indicated exceedance of the NJ Residential Guidance Value

Table H-6
262 Green Street, Brooklyn New York
Waste Characterization Analytical Results
TCLP Metals and SPLP Metals

TCLP METALS	TCLP Regulatory Limit*	GREEN COMP										PURPLE COMP									
		(0-3')		(3-6')		(6-9')		(9-12')		(12-15')		(0-3')		(3-6')		(6-9')		(9-12')		(12-15')	
		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017	
		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Arsenic	5.0	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	**0.06**	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
Barium	100	**0.65**	0.10	**0.92**	0.10	**0.52**	0.10	**0.97**	0.10	**1.42**	0.10	**1.21**	0.10	**1.34**	0.10	**0.97**	0.10	**1.22**	0.10	**1.82**	0.10
Cadmium	1.0	**0.026**	0.050	**0.019**	0.050	**0.009**	0.050	< 0.050	0.050	< 0.050	0.050	**0.044**	0.050	**0.015**	0.050	< 0.050	0.050	< 0.050	0.050	< 0.050	0.050
Chromium	5.0	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	**0.01**	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
Copper		**0.21**	0.10	**0.76**	0.10	**0.18**	0.10	**0.14**	0.10	**0.06**	0.10	**0.16**	0.10	**1.53**	0.10	**0.03**	0.10	< 0.10	0.10	< 0.10	0.10
Lead	5.0	**0.9**	0.10	**17.1**	0.10	**4.52**	0.10	**43.2**	1.0	**3**	0.10	**5.21**	0.10	**19.4**	0.10	**2.95**	0.10	**0.23**	0.10	**6.66**	0.10
Mercury	0.2	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002
Nickel		**0.13**	0.10	**0.21**	0.10	**0.08**	0.10	**0.07**	0.10	**0.09**	0.10	**0.12**	0.10	**0.13**	0.10	**0.07**	0.10	**0.05**	0.10	**0.05**	0.10
Selenium	1.0	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
Silver	5.0	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
Zinc		**5.99**	0.10	**10.8**	0.10	**9.64**	0.10	**8.17**	0.10	**9.21**	0.10	**7.79**	0.10	**6.72**	0.10	**4.34**	0.10	**1.99**	0.10	**7.38**	0.10

Notes:

** - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

BRL - Below Reporting Limit

Bold/highlighted- Indicated exceedance of theTCLP Regulatory Limit

Table H-6
262 Green Street, Brooklyn New York
Waste Characterization Analytical Results
TCLP Metals and SPLP Metals

TCLP METALS	TCLP Regulatory Limit*	TEAL GRAB													
		(0-2')		(2-4')		(4-6')		(6-8')		(8-10')		(10-12')		(12-14')	
		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/3/2017		3/4/2017	
		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	(mg/L)	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Arsenic	5.0	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	**0.05**	0.10	< 0.10	0.10	< 0.10	0.10
Barium	100	**0.8**	0.10	**0.67**	0.10	**0.96**	0.10	**0.86**	0.10	**1**	0.10	**1.12**	0.10	**0.85**	0.10
Cadmium	1.0	**0.06**	0.050	**0.027**	0.050	**0.015**	0.050	< 0.050	0.050	< 0.050	0.050	< 0.050	0.050	< 0.050	0.050
Chromium	5.0	**0.01**	0.10	**0.02**	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
Copper		**1.44**	0.10	**1.45**	0.10	**7.34**	0.10	**0.04**	0.10	**5.91**	0.10	**0.57**	0.10	< 0.10	0.10
Lead	5.0	**5.74**	0.10	**5.84**	0.10	**5.08**	0.10	**0.59**	0.10	**0.97**	0.10	**0.87**	0.10	**0.63**	0.10
Mercury	0.2	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002	< 0.0002	0.0002
Nickel		**0.17**	0.10	**0.22**	0.10	**0.11**	0.10	**0.08**	0.10	**0.06**	0.10	**0.05**	0.10	**0.06**	0.10
Selenium	1.0	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
Silver	5.0	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10	< 0.10	0.10
Zinc		**13.6**	0.10	**8.98**	0.10	**19.6**	0.10	**1.8**	0.10	**4.58**	0.10	**3.09**	0.10	**3.67**	0.10

Notes:

** - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives

BRL - Below Reporting Limit

Bold/highlighted- Indicated exceedance of theTCLP Regulatory Limit

Table H-7
262 Green Street, Brooklyn New York
Waste Characterization Analytical Results
RCRA Characteristics

Test/Procedure	GREEN GRAB										PURPLE GRAB									
	(0-3')		(3-6')		(6-9')		(9-11')		(12-15')		(0-3')		(3-6')		(6-9')		(9-12')		(12-15')	
	3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Percent Solid (%)	**84**	-	**82**	-	**76**	-	**76**	-	**55**	-	**83**	-	**73**	-	**75**	-	**71**	-	**82**	-

Test/Procedure	GREEN COMP										PURPLE COMP									
	(0-3')		(3-6')		(6-9')		(9-12')		(12-15')		(0-3')		(3-6')		(6-9')		(9-12')		(12-15')	
	3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Percent Solid (%)	**83**	-	**78**	-	**77**	-	**69**	-	**67**	-	**84**	-	**80**	-	**78**	-	**75**	-	**72**	-
Corrosivity	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-
Flash Point	**>200**	200	**>200**	200	**>200**	200	**>200**	200	**>200**	200	**>200**	200	**>200**	200	**>200**	200	**>200**	200	**>200**	200
Ignitability	Passed	140	Passed	140	Passed	140	Passed	140	Passed	140	Passed	140	Passed	140	Passed	140	Passed	140	Passed	140
pH - Soil	**9.04**	1.00	**7.04**	1.00	**7.51**	1.00	**7.4**	1.00	**8.1**	1.00	**8.67**	1.00	**7.73**	1.00	**7.97**	1.00	**8**	1.00	**7.95**	1.00
Pyridine	< 390	390	< 420	420	< 430	430	< 480	480	< 480	480	< 390	390	< 420	420	< 430	430	< 440	440	< 460	460
Reactivity Cyanide	< 5.8	5.8	< 5.9	5.9	< 6.5	6.5	< 7.0	7.0	< 7.5	7.5	< 6.0	6.0	< 6.3	6.3	< 6.0	6.0	< 6.4	6.4	< 6.8	6.8
Reactivity Sulfide	< 20	20	< 20	20	< 20	20	< 20	20	< 20	20	< 20	20	< 20	20	< 20	20	< 20	20	< 20	20
Reactivity	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-
Redox Potential	**111**	-	**111**	-	**82.9**	-	**60.7**	-	**-7.5**	-	**51.3**	-	**41.7**	-	**90.1**	-	**119**	-	**-36.2**	-
Total Cyanide (SW9010C Distill.)	**5.77**	0.60	**2.77**	0.64	**3.94**	0.65	**1**	0.66	**0.84**	0.75	**2.73**	0.60	**6.48**	0.57	**0.36**	0.58	< 0.67	0.67	< 0.69	0.69
Total EPH (C9-C40)	**490**	290	**1,400**	320	< 320	320	< 71	71	< 360	360	**690**	290	< 300	300	**400**	310	**2,400**	65	< 340	340

Test/Procedure	TEAL GRAB											
	(0-2')		(2-4')		(4-6')		(6-8')		(8-10')		(10-12')		(12-14')	
	3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/3/2017		3/4/2017	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Percent Solid (%)	**81**	-	**79**	-	**76**	-	**79**	-	**76**	-	**80**	-	**71**	-

Test/Procedure	TEAL COMP											
	(0-2')		(2-4')		(4-6')		(6-8')		(8-10')		(10-12')		(12-14')	
	3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/3/2017		3/4/2017	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Percent Solid (%)	**84**	-	**81**	-	**88**	-	**54**	-	**86**	-	**86**	-	**65**	-
Corrosivity	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-
Flash Point	**>200**	200	**>200**	200	**>200**	200	**>200**	200	**>200**	200	**>200**	200	**>200**	200
Ignitability	Passed	140	Passed	140	Passed	140	Passed	140	Passed	140	Passed	140	Passed	140
pH - Soil	**7.64**	1.00	**7.22**	1.00	**7.46**	1.00	**7.69**	1.00	**7.58**	1.00	**8.01**	1.00	**7.47**	1.00
Pyridine	< 390	390	< 400	400	< 370	370	< 620	620	< 380	380	< 380	380	< 510	510
Reactivity Cyanide	< 5.8	5.8	< 6.0	6.0	< 5.7	5.7	< 8.9	8.9	< 5.8	5.8	< 5.8	5.8	< 7.7	7.7
Reactivity Sulfide	< 20	20	< 20	20	< 20	20	< 20	20	< 20	20	< 20	20	< 20	20
Reactivity	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-	Negative	-
Redox Potential	**-124**	-	**228**	-	**99.7**	-	**113**	-	**-100**	-	**-40.1**	-	**-207**	-
Total Cyanide (SW9010C Distill.)	**4.03**	0.54	**5.24**	0.56	**0.77**	0.57	**0.77**	0.93	**1.25**	0.53	**0.3**	0.58	**0.41**	0.77
Total EPH (C9-C40)	< 290	290	< 310	310	< 280	280	< 91	91	< 57	57	**130**	56	< 380	380

Table H-8
262 Green Street, Brooklyn NY
Waste Characterization Analytical Results
VOA-TICs

COMPOUND	GREEN GRAB								PURPLE GRAB										TEAL GRAB			
	(3-6')		(6-9')		(9-11')		(12-15')		(0-3')		(3-6')		(6-9')		(9-12')		(12-15')		(0-2')		(2-4')	
	3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/3/2017		3/4/2017	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
1H-Indene, octahydro-, cis- (RT 5.018)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7,500**	500	-	-	-	-	-	-
2-Hexene, 3,4,4-trimethyl- (RT 4.872)	-	-	-	-	-	-	-	-	**12**	5	-	-	**3,800**	250	-	-	-	-	-	-	-	-
2H-Inden-2-one, octahydro-, cis- (RT 6.321)	-	-	-	-	-	-	-	-	-	-	**1,100**	250	-	-	-	-	-	-	-	-	-	-
2-Isopropyltoluene (RT 6.352)	-	-	**3**	5	-	-	**18**	5	-	-	-	-	**530**	250	**3,400**	500	**2.7**	5	-	-	-	-
4-Isopropyl-1,3-cyclohexanedione (RT 6.478)	-	-	-	-	**89**	5	-	-	-	-	-	-	-	-	**11,000**	500			-	-	-	-
Acenaphthene (RT 9.674)	**580**	250	-	-	-	-	-	-	-	-	-	-	-	-	**17,000**	500	**19**	5	-	-	-	-
Adamantane, 1,3-dimethyl- (RT 6.912)	-	-	-	-	**57**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene, 1,2,3,5-tetramethyl- (RT 7.388)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene, 1-methyl-2-(1-methylethyl)- (RT 6.734)	-	-	-	-	-	-	**170**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Biphenyl (RT 8.988)	**590**	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane, 1,1,2,3-tetramethyl- (RT 5.411)	-	-	-	-	-	-	-	-	**14**	5	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane, 1,1,3-trimethyl- (RT 4.192)	-	-	-	-	-	-	-	-	-	-	**2,700**	250	-	-	-	-	-	-	-	-	-	-
Cyclohexane, 1,1,3-trimethyl- (RT 4.197)	-	-	-	-	-	-	-	-	-	-	-	-	**3,500**	250	**9,200**	500	-	-	-	-	-	-
Cyclohexane, 1,1,3-trimethyl- (RT 4.198)	-	-	-	-	-	-	-	-	**18**	5	-	-	-	-	-	-	**40**	5	-	-	-	-
Cyclohexane, 1,1-dimethyl- (RT 5.552)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**52**	5	-	-	-	-
Cyclohexane, 1,2,3-trimethyl-, (1.alpha.,2.beta.,3 (RT 4.57	-	-	-	-	-	-	-	-	-	-	**950**	250	-	-	-	-	-	-	-	-	-	-
Cyclohexane, 1,2,4-trimethyl- (RT 4.328)	-	-	-	-	-	-	-	-	-	-	**1,200**	250	-	-	-	-	-	-	-	-	-	-
Cyclohexane, 1,2,4-trimethyl-, (1.alpha.,2.beta.,4 (RT 4.33	-	-	-	-	-	-	-	-	**13**	5	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane, 1,3-dimethyl-, cis- (RT 3.570)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**13,000**	500	-	-	-	-	-	-
Cyclohexane, 1-ethyl-2-methyl-, trans- (RT 4.872)	-	-	**8.9**	5	-	-	-	-	-	-	-	-	-	-	-	-	**29**	5	-	-	-	-
Cyclohexane, 2-butyl-1,1,3-trimethyl- (RT 7.634)	-	-	-	-	**78**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane, propyl- (RT 5.065)	-	-	-	-	-	-	-	-	-	-	-	-	**3,500**	250	-	-	-	-	-	-	-	-
Cyclohexane, propyl- (RT 5.066)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**50**	5	-	-	-	-
Cyclohexane, propyl- (RT 5.071)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12,000**	500	-	-	-	-	-	-
Ethyl ether (RT 1.415)	-	-	-	-	-	-	-	-	**19**	5	-	-	-	-	-	-	-	-	-	-	-	-
Indane (RT 6.394)	**470**	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
n-Amylcyclohexane (RT 6.854)	-	-	-	-	-	-	**85**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene (RT 7.9)	**18,000**	250	**27**	5	-	-	**11**	5	**90**	5	**880**	250	-	-	-	-	-	-	-	-	-	-
Naphthalene (RT 9.086)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6.1**	5	**13**	5
Naphthalene, 1,4-dimethyl- (RT 9.281)	**470**	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 1,7-dimethyl- (RT 9.208)	**470**	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 1-methyl- (RT 8.706)	**2,200**	250	-	-	-	-	-	-	**13**	5	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 2-ethyl- (RT 9.130)	**430**	250	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 2-methyl- (RT 8.607)	**3,000**	250	**11**	5	-	-	-	-	**12**	5	-	-	-	-	-	-	-	-	-	-	-	-
n-Butylbenzene (RT 6.477)	-	-	-	-	-	-	**4.7**	5	-	-	-	-	**250**	250	**1,400**	500	-	-	-	-	-	-
sec-Butylbenzene (RT 6.064)	-	-	-	-	-	-	**12**	5	-	-	-	-	**780**	250	**3,800**	500	-	-	-	-	-	-
tert-Butylbenzene (RT 5.938)	-	-	-	-	-	-	**40**	5	-	-	-	-	**530**	250	-	-	-	-	-	-	-	-
tert-Butylbenzene (RT 5.939)	-	-	**6.8**	5	**8.6**	5	-	-	-	-	-	-	-	-	**4,400**	500	**5.2**	5	-	-	-	-
Tricyclo[3.3.1.1(3,7)-]decane, 1-bromo- (RT 6.792)	-	-	-	-	**110**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 4.872)	-	-	-	-	-	-	-	-	-	-	**1,600**	250	-	-	-	-	-	-	-	-	-	-
unknown (RT 5.066)	-	-	-	-	-	-	-	-	-	-	**1,500**	250	-	-	-	-	-	-	-	-	-	-
unknown (RT 5.102)	-	-	-	-	-	-	-	-	-	-	**2,300**	250	-	-	-	-	**48**	5	-	-	-	-
unknown (RT 5.107)	-	-	-	-	-	-	**130**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 5.411)	-	-	**24**	5	-	-	**120**	5	-	-	**2,700**	250	-	-	-	-	**42**	5	-	-	-	-
unknown (RT 5.416)	-	-	-	-	-	-	-	-	-	-	-	-	**4,700**	250	-	-	-	-	-	-	-	-
unknown (RT 5.552)	-	-	**19**	5	-	-	**140**	5	-	-	**1,600**	250	-	-	-	-	-	-	-	-	-	-
unknown (RT 5.557)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10,000**	500	-	-	-	-	-	-
unknown (RT 5.589)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**25**	5	-	-	-	-
unknown (RT 5.662)	-	-	-	-	**47**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 5.672)	-	-	-	-	-	-	-	-	-	-	-	-	**2,700**	250	-	-	-	-	-	-	-	-
unknown (RT 5.704)	-	-	**19**	5	-	-	-	-	-	-	-	-	**3,300**	250	-	-	-	-	-	-	-	-
unknown (RT 5.709)	-	-	-	-	-	-	-	-	-	-	-	-	**2,400**	250	-	-	-	-	-	-	-	-
unknown (RT 5.756)	-	-	-	-	**48**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 5.824)	-	-	**14**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 5.829)	-	-	-	-	-	-	**97**	5	-	-	-	-	**3,900**	250	**8,000**	500			-	-	-	-
unknown (RT 5.850)	-	-	**14**	5	-	-	**90**	5	-	-	**1,200**	250	**3,800**	250	**6,600**	500	**22**	5	-	-	-	-
unknown (RT 5.855)	-	-	-	-	-	-	**88**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 5.860)	-	-	-	-	-	-	**73**	5	-	-	-	-	**2,400**	250	-	-	-	-	-	-	-	-
unknown (RT 5.991)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15,000**	500	-	-	-	-	-	-
unknown (RT 6.112)	-	-	-	-	**52**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.499)	-	-	**9.5**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.729)	-	-	-	-	**49**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.797)	-	-	**11**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.807)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11,000**	500	-	-	-	-	-	-
unknown (RT 6.902)	-	-	-	-	**46**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.917)	-	-	-	-	**120**	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table H-9
262 Green Street, Brooklyn NY
Waste Characterization Analytical Results
SVOA-TICs

COMPOUND	GREEN COMP										PURPLE COMP										TEAL GRAB													
	(0-3')		(3-6')		(6-9')		(9-12')		(12-15')		(0-3')		(3-6')		(6-9')		(9-12')		(12-15')		(0-2')		(2-4')		(4-6')		(6-8')		(8-10')		(10-12')		(12-14')	
	3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/3/2017		3/4/2017	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
[1,1'-Biphenyl]-4-carboxaldehyde (RT 5.700)	**1,300**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,400**	4	-	-	-	-	-	-	-	-	-	-	-	-
1,1'-Biphenyl, 2-methyl- (RT 5.625)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,400**	4	-	-	-	-	-	-	-	-	-	-	-	-
1,1'-Biphenyl, 2-methyl- (RT 5.635)	-	-	**2,700**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1'-Biphenyl, 2-methyl- Isomer (RT 5.657)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**730**	4	-	-	-	-	-	-	-	-	-	-	-	-
10,18-Bisnorabieta-5,7,9(10),11,13 (RT 7.489)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14,000**	4	-	-
10,18-Bisnorabieta-5,7,9(10),11,13-pentaene (RT 7.468)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**750**	4
10,18-Bisnorabieta-5,7,9(10),11,13-pentaene (RT 7.473)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**860**	4	-	-	-	-	-	-
10,18-Bisnorabieta-5,7,9(10),11,13-pentaene (RT 7.478)	-	-	-	-	**1,500**	4	-	-	-	-	-	-	**600**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10,18-Bisnorabieta-5,7,9(10),11,13-pentaene (RT 7.479)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,200**	4	-	-	-	-	-	-	-	-
11H-Benzo[b]fluorene (RT 7.927)	-	-	**1,700**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11H-Benzo[b]fluorene (RT 7.954)	-	-	-	-	**700**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11H-Benzo[b]fluorene (RT 7.959)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**890**	4	-	-	-	-	-	-	-	-	-	-	-	-
11H-Benzo[b]fluorene Isomer (RT 7.906)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,200**	4	-	-	-	-	-	-	-	-	-	-	-	-
11H-Benzo[b]fluorene Isomer (RT 7.981)	-	-	**1,400**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Norabietane (RT 7.083)	-	-	-	-	-	-	**440**	4	-	-	-	-	-	-	-	-	**5,200**	4	-	-	-	-	-	-	-	-	-	-	-	-	**1,200**	4	-	-
1H-Cyclopropa[l]phenanthrene,1a,9b-dihydro- (RT 6.843)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**530**	4	-	-	-	-	-	-	-	-	-	-
1H-Cyclopropa[l]phenanthrene,1a,9b-dihydro- Isomer (RT 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**940**	4	-	-	-	-	-	-	-	-	-	-
1-Ethyl-4-methylcyclohexane (RT 2.019)	-	-	-	-	-	-	-	-	-	-	-	-	**660**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1-Isopropenylnaphthalene (RT 5.662)	-	-	**1,200**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Pentanone, 4-hydroxy-4-methyl- (RT 1.661)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11,000**	4
2-Pentanone, 4-hydroxy-4-methyl- (RT 1.666)	-	-	-	-	-	-	-	-	**13,000**	4	-	-	-	-	-	-	-	-	-	-	-	-	**18,000**	4	**13,000**	4	-	-	-	-	-	-	-	-
2-Pentanone, 4-hydroxy-4-methyl- (RT 1.671)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11,000**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11,000**	4	-	-
2-Pentanone, 4-hydroxy-4-methyl- (RT 1.672)	-	-	-	-	-	-	**19,000**	4	-	-	-	-	-	-	-	-	-	-	**17,000**	4	-	-	-	-	-	-	**27,000**	4	-	-	-	-	-	-
2-Pentanone, 4-hydroxy-4-methyl- (RT 1.677)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14,000**	4	-	-	-	-
2-Pentanone, 4-hydroxy-4-methyl- (RT 1.682)	-	-	**39,000**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Pentanone, 4-hydroxy-4-methyl- (RT 1.687)	-	-	-	-	-	-	-	-	-	-	**40,000**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Pentanone, 4-hydroxy-4-methyl- (RT 1.688)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**30,000**	4	-	-	-	-	-	-	-	-	-	-	-	-
2-Pentanone, 4-hydroxy-4-methyl- (RT 1.693)	-	-	-	-	-	-	-	-	-	-	-	-	**41,000**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Pentanone, 4-hydroxy-4-methyl- (RT 1.698)	**55,000**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Pentanone, 4-hydroxy-4-methyl- (RT 1.709)	-	-	-	-	**63,000**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Penten-2-one, 4-methyl- (RT 1.436)	-	-	-	-	**1,400**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Penten-2-one, 4-methyl- (RT 1.437)	**700**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Phenylnaphthalene (RT 7.046)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**440**	4
2-Phenylnaphthalene (RT 7.051)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**720**	4	-	-	-	-	-	-	-	-	-	-
2-Phenylnaphthalene (RT 7.057)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,400**	4	-	-	-	-	-	-	-	-
4H-Cyclopenta[def]phenanthrene (RT 6.885)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**380**	4	-	-
4H-Cyclopenta[def]phenanthrene (RT 6.886)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,200**	4	-	-	-	-	-	-
4H-Cyclopenta[def]phenanthrene (RT 6.891)	-	-	-	-	**3,000**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2,800**	4	-	-	-	-	-	-	-	-
4H-Cyclopenta[def]phenanthrene (RT 6.896)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**820**	4	-	-	-	-	-	-	-	-	-	-	-	-
9,10-Anthracenedione (RT 7.073)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**980**	4	-	-	-	-	-	-
9,10-Anthracenedione (RT 7.078)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,000**	4	-	-	-	-	-	-	-	-	-	-
9,10-Anthracenedione (RT 7.083)	-	-	-	-	**860**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**880**	4	-	-	-	-	-	-	-	-
9,10-Anthracenedione (RT 7.088)	-	-	-	-	-	-	-	-	-	-	-	-	**1,100**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9,10-Anthracenedione (RT 7.094)	-	-	-	-	-	-	-	-	-	-	**8,800**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene, 1-methyl- (RT 6.902)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**630**	4	-	-	-	-	-	-	-	-	-	-
Anthracene, 2-methyl- (RT 6.789)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,100**	4	-	-	-	-	-	-	-	-
Anthracene, 2-methyl- (RT 6.811)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**770**	4	-	-	-	-	-	-
Anthracene, 2-methyl- (RT 6.816)	-	-	-	-	**1,500**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,400**	4	-	-	-	-	-	-	-	-
Anthracene, 2-methyl- (RT 6.907)	-	-	-	-	-	-	-	-	-	-	**37,000**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene, 2-methyl- Isomer (RT 6.795)	-	-	-	-	**1,200**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene, 2-methyl- Isomer (RT 6.848)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**820**	4	-	-	-	-	-	-	-	-
Anthracene, 9-methyl- (RT 6.859)	-	-	-	-	-	-	-	-	-	-	**11,000**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benz[e]acephenanthrylene (RT 10.235)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**920**	4	-	-	-	-	-	-
Benz[e]acephenanthrylene (RT 10.267)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,300**	4	-	-	-	-	-	-	-	-	-	-	-	-
Benz[e]acephenanthrylene (RT 10.748)	-	-	**26,000**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benz[e]acephenanthrylene Isomer (RT 10.556)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7,600**	4	-	-	-	-	-	-	-	-	-	-	-	-
Benz[e]acephenanthrylene Isomer (RT 10.866)	-	-	**5,100**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene, 1,2,4,5-tetramethyl- (RT 3.424)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,300**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene, 1,2,4,5-tetramethyl- (RT 3.429)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,200**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene, 1,2,4,5-tetramethyl- (RT 3.435)	-	-	-	-	-	-	-	-	**3,800**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene, 1,2,4,5-tetramethyl- (RT 3.451)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12,000**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo[e]pyrene (RT 10.251)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**330**	4	-	-	-	-
Benzo[e]pyrene (RT 10.257)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,100**	4	-	-	-	-	-	-	-	-
Benzo[e]pyrene (RT 10.283)	**2,800**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo[e]pyrene (RT 10.331)	-	-	**6,200**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo[e]pyrene (RT 10.481)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**760**	4
Benzo[e]pyrene (RT 10.508)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**440**	4	-	-
Benzo[e]pyrene (RT 10.524)	-	-	-	-	-	-	**1,600**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo[e]pyrene (RT 10.540)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,700**	4	-	-	-	-	-	-	-	-	-	-
Benzo[e]pyrene (RT 10.550)	-	-	-	-	**3,600**	4	-	-	-	-	-	-	**1,600**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo[e]pyrene Isomer (RT 10.246)	-	-	-	-	-	-	**670**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo[e]pyrene Isomer (RT 10.262)	-	-	-	-	**1,600**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane, (4-methylpentyl)- (RT 3.862)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,300**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane, 1-methyl-2-propyl- (RT 2.526)	-	-	-	-	-	-	-	-	-	-	-	-	**640**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclopenta(cd)pyrene, 3,4-dihydro- (RT 8.467)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**510**	4	-	-	-	-	-	-
Cyclopenta(cd)pyrene, 3,4-dihydro- (RT 8.478)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**730**	4	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzo[a,e]cyclooctene (RT 6.635)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**520**	4	-	-	-	-	-	-	-	-	-	-
Dibenzofuran, 4-methyl- (RT 5.705)	-	-	**2,600**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzothiophene (RT 6.260)	-	-	-	-	**720**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzothiophene (RT 6.261)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**710**	4	-	-	-	-	-	-	-	-
Dibenzothiophene (RT 6.266)	-	-	-	-	-	-	-	-	-	-	**9,200**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table H-9
262 Green Street, Brooklyn NY
Waste Characterization Analytical Results
SVOA-TICs

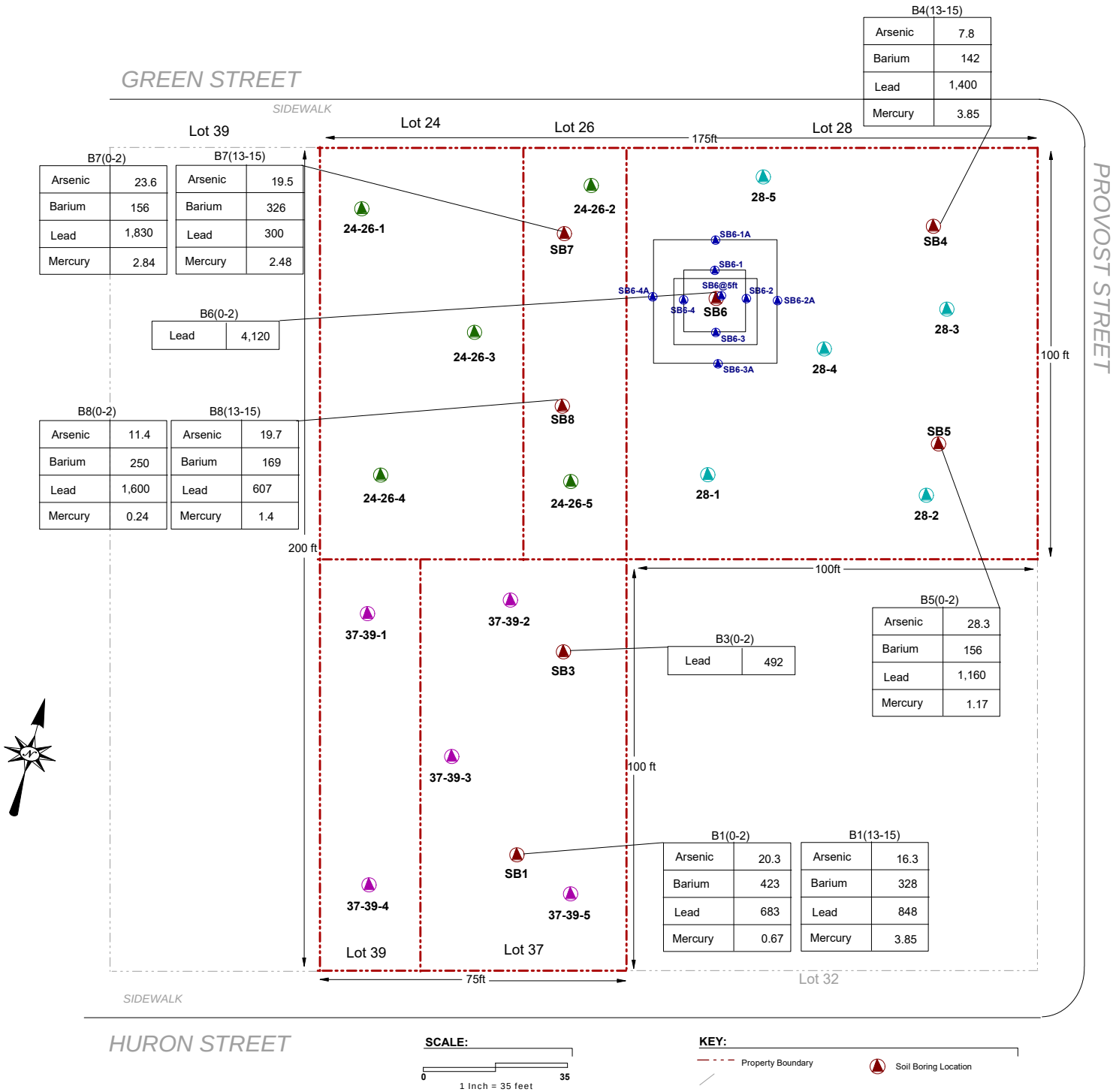
COMPOUND	GREEN COMP										PURPLE COMP									
	(0-3')		(3-6')		(6-9')		(9-12')		(12-15')		(0-3')		(3-6')		(6-9')		(9-12')		(12-15')	
	3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Dinaphtho[1,2-b:1',2'-d]furan (RT 10.406)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dinaphtho[1,2-b:1',2'-d]furan (RT 10.422)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphenylmethane (RT 5.630)	**650**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D-Limonene (RT 2.719)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene, 2-methyl- (RT 7.906)	**1,700**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexadecane (RT 10.422)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 1,4,6-trimethyl- (RT 5.449)	**610**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 1,6,7-trimethyl- (RT 5.374)	**600**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 1,6-dimethyl- (RT 4.802)	**810**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 1,6-dimethyl- (RT 4.898)	-	-	**1,300**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 1,7-dimethyl- (RT 4.818)	-	-	**1,000**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 1-methyl- (RT 4.284)	**1,400**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 1-methyl- (RT 4.289)	-	-	**1,100**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 1-phenyl- (RT 6.635)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 1-phenyl- (RT 6.645)	-	-	-	-	-	-	-	-	-	-	**14,000**	4	-	-	-	-	-	-	-	-
Naphthalene, 2,3,6-trimethyl- (RT 5.454)	-	-	**1,300**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 2,3-dimethyl- (RT 4.802)	-	-	**2,400**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 2,3-dimethyl- (RT 4.893)	**930**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 2,6-dimethyl- (RT 4.727)	**680**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 2,6-dimethyl- (RT 4.797)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 2,7-dimethyl- (RT 4.722)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 2,7-dimethyl- (RT 4.733)	-	-	**1,700**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 2-phenyl- (RT 7.051)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 2-phenyl- (RT 7.056)	-	-	-	-	**840**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene, 2-phenyl- (RT 7.067)	-	-	-	-	-	-	-	-	-	-	**14,000**	4	-	-	-	-	-	-	-	-
Naphthalene, decahydro-, trans- (RT 2.895)	-	-	-	-	-	-	-	-	-	-	-	-	**660**	4	-	-	-	-	**3,200**	4
Naphthalene, decahydro-, trans- (RT 2.900)	-	-	-	-	-	-	-	-	**9,300**	4	-	-	-	-	**8,100**	4	-	-	-	-
Naphthalene, decahydro-, trans- (RT 2.927)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,900**	4	-	-
Naphthalene, decahydro-2-methyl- (RT 3.210)	-	-	-	-	-	-	-	-	**3,200**	4	-	-	-	-	-	-	-	-	-	-
Perylene (RT 10.513)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perylene (RT 10.524)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perylene (RT 10.534)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perylene (RT 10.572)	**6,300**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perylene (RT 10.614)	-	-	-	-	-	-	-	-	-	-	**9,500**	4	-	-	-	-	-	-	-	-
Phenanthrene, 1-methyl- (RT 6.827)	-	-	-	-	-	-	-	-	-	-	**20,000**	4	-	-	-	-	-	-	-	-
Phenanthrene, 1-methyl-7-(1-methyl (RT 7.879)	-	-	-	-	-	-	**820**	4	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene, 1-methyl-7-(1-methyl (RT 7.884)	-	-	-	-	-	-	-	-	-	-	-	-	**590**	4	-	-	-	-	-	-
Phenanthrene, 1-methyl-7-(1-methyl (RT 7.901)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene, 1-methyl-7-(1-methylethyl)- (RT 7.874)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2,800**	4	**1,100**	4
Phenanthrene, 1-methyl-7-(1-methylethyl)- (RT 7.879)	-	-	-	-	-	-	-	-	**1,400**	4	-	-	-	-	-	-	-	-	-	-
Phenanthrene, 1-methyl-7-(1-methylethyl)- (RT 7.884)	-	-	-	-	**2,100**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene, 2,5-dimethyl- (RT 7.286)	-	-	-	-	**770**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene, 2-methyl- (RT 6.800)	-	-	-	-	-	-	-	-	-	-	**20,000**	4	-	-	-	-	-	-	-	-
Phenanthrene, 2-methyl- (RT 6.811)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene, 2-methyl- (RT 6.848)	-	-	-	-	**880**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene, 3-methyl- (RT 6.789)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene, 3,6-dimethyl- (RT 7.233)	-	-	-	-	-	-	-	-	-	-	**7,800**	4	-	-	-	-	-	-	-	-
Phenanthrene, 4-methyl- (RT 6.805)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene, 4,5-dimethyl- (RT 7.308)	-	-	-	-	-	-	-	-	-	-	**7,400**	4	-	-	-	-	-	-	-	-
Pyrene, 1-methyl- (RT 7.890)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene, 1-methyl- (RT 7.954)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene, 1-methyl- (RT 7.991)	**680**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene, 2-methyl- (RT 7.975)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene, 4-methyl- (RT 7.975)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-Decalin, 2-methyl- (RT 3.205)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,200**	4
trans-Decalin, 2-methyl- (RT 3.210)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,800**	4	-	-	-	-
trans-Decalin, 2-methyl- (RT 3.232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10,000**	4	-	-
unknown (RT 10.412)	-	-	-	-	-	-	**480**	4	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 12.730)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 14.610)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 15.946)	-	-	-	-	-	-	**970**	4	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 15.951)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 2.083)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,200**	4
unknown (RT 2.088)	-	-	-	-	-	-	-	-	-	-	-	-	**790**	4	-	-	-	-	-	-
unknown (RT 2.099)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,100**	4	-	-	-	-
unknown (RT 2.142)	-	-	-	-	-	-	-	-	-	-	-	-	**630**	4	-	-	-	-	-	-
unknown (RT 2.147)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**930**	4
unknown (RT 2.152)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,300**	4	-	-	-	-
unknown (RT 2.190)	-	-	-	-	-	-	-	-	-	-	-	-	**1,200**	4	-	-	-	-	-	-
unknown (RT 2.195)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2,000**	4
unknown (RT 2.200)	-	-	-	-	-	-	-	-	**4,500**	4	-	-	-	-	**5,000**	4	-	-	-	-
unknown (RT 2.265)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**870**	4
unknown (RT 2.270)	-	-	-	-	-	-	-	-	**1,900**	4	-	-	-	-	**2,000**	4	-	-	-	-
unknown (RT 2.312)	-	-	-	-	-	-	-	-	-	-	-	-	**980**	4	-	-	-	-	-	-
unknown (RT 2.313)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,700**	4
unknown (RT 2.318)	-	-	-	-	-	-	-	-	**3,400**	4	-	-	-	-	**4,200**	4	-	-	-	-
unknown (RT 2.526)	-	-	-	-	-	-	-	-	**2,600**	4	-	-	-	-	**3,300**	4	-	-	**1,400**	4
unknown (RT 2.692)	-	-	-	-	-	-	-	-	**2,700**	4	-	-	-	-	**2,300**	4	-	-	**1,300**	4
unknown (RT 2.729)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,900**	4
unknown (RT 2.745)	-	-	-	-	-	-	-	-	**15,000**	4	-	-	-	-	**12,000**	4	-	-	-	-

COMPOUND	TEAL GRAB															
	(0-2')		(2-4')		(4-6')		(6-8')		(8-10')		(10-12')		(12-14')			
	3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/3/2017		3/4/2017			
	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg			
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL		
Dinaphtho[1,2-b:1',2'-d]furan (RT 10.406)	-	-	-	-	-	-	**680**	4	-	-	-	-	-	-		
Dinaphtho[1,2-b:1',2'-d]furan (RT 10.422)	**1,600**	4	-	-	-	-	-	-	-	-	-	-	-	-		
Diphenylmethane (RT 5.630)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
D-Limonene (RT 2.719)	-	-	-	-	-	-	**1,000**	4	-	-	-	-	-	-		
Fluoranthene, 2-methyl- (RT 7.906)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Hexadecane (RT 10.422)	-	-	-	-	**1,200**	4	-	-	-	-	-	-	-	-		
Naphthalene, 1,4,6-trimethyl- (RT 5.449)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 1,6,7-trimethyl- (RT 5.374)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 1,6-dimethyl- (RT 4.802)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 1,6-dimethyl- (RT 4.898)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 1,7-dimethyl- (RT 4.818)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 1-methyl- (RT 4.284)	**1,200**	4	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 1-methyl- (RT 4.289)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 1-phenyl- (RT 6.635)	-	-	-	-	**610**	4	-	-	-	-	-	-	-	-		
Naphthalene, 1-phenyl- (RT 6.645)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 2,3,6-trimethyl- (RT 5.454)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 2,3-dimethyl- (RT 4.802)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 2,3-dimethyl- (RT 4.893)	**930**	4	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 2,6-dimethyl- (RT 4.727)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 2,6-dimethyl- (RT 4.797)	**1,300**	4	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 2,7-dimethyl- (RT 4.722)	**840**	4	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 2,7-dimethyl- (RT 4.733)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 2-phenyl- (RT 7.051)	-	-	-	-	-	-	**520**	4	-	-	-	-	-	-		
Naphthalene, 2-phenyl- (RT 7.056)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, 2-phenyl- (RT 7.067)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, decahydro-, trans- (RT 2.895)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Naphthalene, decahydro-, trans- (RT 2.900)	-	-	-	-	-	-	-	-	**900**	4	-	-	-	-		
Naphthalene, decahydro-, trans- (RT 2.927)	-	-	-	-	**2,200**	4	-	-	-	-	-	-	-	-		
Naphthalene, decahydro-2-methyl- (RT 3.210)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Perylene (RT 10.513)	-	-	-	-	-	-	**2,100**	4	-	-	-	-	-	-		
Perylene (RT 10.524)	-	-	-	-	-	-	-	-	**1,100**	4	-	-	-	-		
Perylene (RT 10.534)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Perylene (RT 10.572)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Perylene (RT 10.614)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Phenanthrene, 1-methyl- (RT 6.827)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Phenanthrene, 1-methyl-7-(1-methyl (RT 7.879)	-	-	-	-	-	-	-	-	**1,100**	4	-	-	-	-		
Phenanthrene, 1-methyl-7-(1-methyl (RT 7.884)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Phenanthrene, 1-methyl-7-(1-methyl (RT 7.901)	-	-	-	-	-	-	-	-	-	-	**17,000**	4	-	-		
Phenanthrene, 1-methyl-7-(1-methylethyl)- (RT 7.874)	-	-	-	-	-	-	**850**	4	-	-	-	-	**3,500**	4		
Phenanthrene, 1-methyl-7-(1-methylethyl)- (RT 7.879)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Phenanthrene, 1-methyl-7-(1-methylethyl)- (RT 7.884)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Phenanthrene, 2,5-dimethyl- (RT 7.286)	-	-	**810**	4	-	-	-	-	-	-	-	-	-	-		
Phenanthrene, 2-methyl- (RT 6.800)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Phenanthrene, 2-methyl- (RT 6.811)	-	-	**1,100**	4	-	-	-	-	-	-	-	-	-	-		
Phenanthrene, 2-methyl- (RT 6.848)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Phenanthrene, 3-methyl- (RT 6.789)	-	-	-	-	-	-	**560**	4	-	-	-	-	-	-		
Phenanthrene, 3,6-dimethyl- (RT 7.233)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Phenanthrene, 4-methyl- (RT 6.805)	-	-	-	-	-	-	-	-	-	-	-	-	**510**	4		
Phenanthrene, 4,5-dimethyl- (RT 7.308)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Pyrene, 1-methyl- (RT 7.890)	-	-	**1,000**	4	-	-	-	-	-	-	-	-	-	-		
Pyrene, 1-methyl- (RT 7.954)	-	-	-	-	**610**	4	-	-	-	-	-	-	-	-		
Pyrene, 1-methyl- (RT 7.991)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Pyrene, 2-methyl- (RT 7.975)	-	-	-	-	-	-	**530**	4	-	-	-	-	-	-		
Pyrene, 4-methyl- (RT 7.975)	-	-	**620**	4	-	-	-	-	-	-	-	-	-	-		
trans-Decalin, 2-methyl- (RT 3.205)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
trans-Decalin, 2-methyl- (RT 3.210)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
trans-Decalin, 2-methyl- (RT 3.232)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 10.412)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 12.730)	-	-	-	-	-	-	-	-	-	-	-	-	**420**	4		
unknown (RT 14.610)	-	-	-	-	-	-	-	-	-	-	-	-	**620**	4		
unknown (RT 15.946)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 15.951)	-	-	-	-	**960**	4	-	-	-	-	-	-	-	-		
unknown (RT 2.083)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.088)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.099)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.142)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.147)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.152)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.190)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.195)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.200)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.265)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.270)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.312)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.313)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.318)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.526)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.692)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.729)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
unknown (RT 2.745)	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Table H-9
262 Green Street, Brooklyn NY
Waste Characterization Analytical Results
SVOA-TICs

COMPOUND	GREEN COMP										PURPLE COMP									
	(0-3')		(3-6')		(6-9')		(9-12')		(12-15')		(0-3')		(3-6')		(6-9')		(9-12')		(12-15')	
	3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017	
	µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg		µg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
unknown (RT 2.815)	-	-	-	-	-	-	-	-	-	-	-	-	**690**	4	-	-	-	-	**3,200**	4
unknown (RT 2.820)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8,200**	4	-	-	-	-
unknown (RT 2.825)	-	-	-	-	-	-	-	-	**10,000**	4	-	-	-	-	-	-	-	-	-	-
unknown (RT 2.852)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,000**	4	-	-
unknown (RT 3.002)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2,500**	4	-	-	-	-
unknown (RT 3.242)	-	-	-	-	-	-	-	-	**2,000**	4	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.264)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5,700**	4	-	-
unknown (RT 3.296)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,700**	4	-	-
unknown (RT 3.301)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,300**	4
unknown (RT 3.306)	-	-	-	-	-	-	-	-	**3,700**	4	-	-	-	-	**4,900**	4	-	-	-	-
unknown (RT 3.328)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14,000**	4	-	-
unknown (RT 3.365)	-	-	-	-	-	-	-	-	**1,500**	4	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.381)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,600**	4	-	-
unknown (RT 3.493)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2,600**	4	-	-
unknown (RT 3.547)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2,800**	4	-	-
unknown (RT 4.679)	**640**	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.707)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2,800**	4	-	-
unknown (RT 4.001)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,200**	4	-	-
unknown (RT 6.164)	-	-	-	-	-	-	-	-	-	-	**5,400**	4	-	-	-	-	-	-	-	-
unknown (RT 6.239)	-	-	-	-	-	-	-	-	-	-	**5,500**	4	-	-	-	-	-	-	-	-
unknown (RT 6.880)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.886)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.891)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.896)	-	-	-	-	-	-	**400**	4	-	-	-	-	**1,500**	4	-	-	-	-	-	-
unknown (RT 6.923)	-	-	-	-	-	-	-	-	-	-	**7,400**	4	-	-	-	-	-	-	-	-
unknown (RT 6.987)	-	-	-	-	-	-	**400**	4	-	-	-	-	**1,000**	4	-	-	-	-	-	-
unknown (RT 6.998)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 7.083)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 7.206)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 7.308)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 7.329)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 7.334)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 7.345)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 8.210)	-	-	-	-	-	-	**440**	4	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 8.216)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 8.221)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

COMPOUND	TEAL GRAB													
	(0-2')		(2-4')		(4-6')		(6-8')		(8-10')		(10-12')		(12-14')	
	3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/2/2017		3/3/2017		3/4/2017	
	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
unknown (RT 2.815)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 2.820)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 2.825)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 2.852)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.002)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.242)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.264)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.296)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.301)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.306)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.328)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.365)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.381)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.493)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.547)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 4.679)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 3.707)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 4.001)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.164)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.239)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.880)	-	-	-	-	-	-	-	-	-	-	-	-	**830**	4
unknown (RT 6.886)	-	-	**2,000**	4	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.891)	-	-	-	-	-	-	-	-	**610**	4	-	-	-	-
unknown (RT 6.896)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.923)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 6.987)	-	-	-	-	-	-	-	-	**460**	4	-	-	-	-
unknown (RT 6.998)	-	-	-	-	-	-	-	-	-	-	**1,100**	4	-	-
unknown (RT 7.083)	-	-	-	-	-	-	-	-	**460**	4	-	-	-	-
unknown (RT 7.206)	-	-	-	-	-	-	-	-	-	-	**2,400**	4	-	-
unknown (RT 7.308)	-	-	**520**	4	-	-	-	-	-	-	-	-	-	-
unknown (RT 7.329)	-	-	-	-	-	-	-	-	-	-	**980**	4	-	-
unknown (RT 7.334)	-	-	-	-	-	-	**770**	4	-	-	-	-	-	-
unknown (RT 7.345)	-	-	**1,200**	4	-	-	-	-	-	-	-	-	-	-
unknown (RT 8.210)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
unknown (RT 8.216)	-	-	-	-	-	-	-	-	**630**	4	-	-	-	-
unknown (RT 8.221)	-	-	-	-	-	-	-	-	-	-	**480**	4	-	-



- Form 5-point Composites from Green Soil Borings Representing the Intervals (0-3), (3-6), (6-9), (9-12), and (12-15)
- Form 5-point Composites from Purple Soil Borings Representing the Intervals (0-3), (3-6), (6-9), (9-12), and (12-15)
- Form 5-point Composites from Teal Soil Borings Representing the Intervals (0-2), (2-4), (4-6), (6-8), (8-10), (10-12) and (12-14)
- Collect delineation soil samples from (0-5t) intervals for Lead and TCLP Lead and SB6 grab samples at 5ft and 6 ft

EBC
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Figure No. 2

Site Name: Redevelopment Project
Site Address: 262 Green Street, Brooklyn, NY
Drawing Title: Site Sampling Locations