FORMER BOYLE AUTO WRECKERS SITE

1346 BLONDELL AVENUE
BRONX, NEW YORK 10461
Block 4134, Lot 1

REMEDIAL ACTION WORK PLAN

May 2019

Prepared for:

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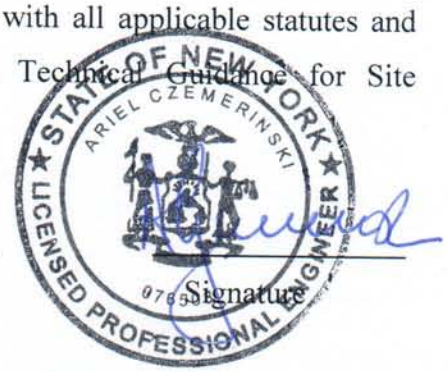
CERTIFICATIONS

I, Ariel Czemerinski, 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).



076508	5/23/2019	
NYS Professional Engineer #	Date	Signature

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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 Statement 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
RSCOs	Recommended Site 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 Blondell Equities LLC for the property known as the Former Boyle Auto Wreckers Site, located at 1346 Blondell Avenue in the Bronx, New York (hereafter referred to as the Site). In February 2017, Blondell Equities LLC filed an application with the New York State Department of Environmental Conservation (NYSDEC), to admit the Project Site into the New York State Brownfield Cleanup Program (BCP). The application was deemed complete by the NYSDEC on March 13, 2017. On March 13, 2017, the NYSDEC informed Blondell Equities LLC that the project (Site No. C203089) had been accepted into the BCP with Blondell Equities LLC classified as a "Volunteer". The Brownfield Cleanup Agreement was executed by NYSDEC on August 18, 2017.

An unrestricted use is proposed for the property. When completed, the Site will be redeveloped with a new nine story mixed-use building. The project will include 212 affordable housing apartment units, 22,000 square feet (sf) of retail space and underground parking for 90 cars. The developer is currently in the process of rezoning the property from M1-1 light manufacturing to R7A residential with a C2-4 commercial overlay. Refer to the Brownfield Cleanup Program (BCP) application for additional details.

The street address for the Site is 1346 Blondell Avenue in the Bronx, NY. The Site is located in the City of New York in the Pelham Bay neighborhood of the Borough of the Bronx. The Site is comprised of seven tax parcels which were recently merged into one lot (Block 4134 Lot 1). The former seven lots are identified as Block 4133, Lot 12 and Block 4134 Lots 1, 2, 4, 62, 63 and 70 totaling 46,360 sq. ft (1.064 acres). The Site consists of approximately 206 feet of street frontage on Blondell Avenue. Currently the property is improved with a 1-story 2,920 square foot (footprint) masonry commercial building constructed in 1920, a 1-3/4-story 684 square foot (footprint) wood frame shed building constructed in 1931 and a 1-1/2 story 490 square foot (footprint) wood frame house constructed in 1930. The buildings are currently unoccupied, but the property has historically been used as an auto wrecking yard, auto repair shop, motorcycle repair shop, auto body shop and as a truck / equipment yard.

The Site is currently owned by Blondell Realty Corp. The property is currently vacant. The Volunteer is under contract to purchase the property.

Summary of the Remedial Investigation

A Remedial Investigation was completed at the Site from February 26, 2018 through March 20, 2018 and documented in a Remedial Investigation Report dated September 2018. 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 16 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 8 soil gas sampling locations.

The results of sampling performed during this RI identified petroleum VOC contamination in the top 4 feet of soil the north-central and southeastern areas of the Site.

Historic fill material and / or soil with parameters exceeding unrestricted SCOs have been identified across the Site to depths of 7 feet below grade extending as deep as 15 feet in at least two of the borings. Depending on location, the historic fill material contains poly aromatic hydrocarbons (PAHs), pesticides and one or more metals including barium, chromium, copper, lead, mercury, nickel and zinc above unrestricted and / or restricted use SCOs.

Groundwater was detected between 3.30 to 5.49 feet below grade, and is impacted with petroleum VOCs in the north-central area in the vicinity of MW1 and MW2 with concentrations 62 ug/L to 3,817 ug/L. CVOCs were reported slightly above standards in two monitoring wells including chloroform in MW3 and MW4.

Low concentrations of chlorinated VOCs (CVOCs) were reported in all of the soil vapor samples with Trichloroethene (TCE) reported in 1 of the 8 soil vapor samples, and Tetrachloroethene (PCE) reported in 6 of the 8 soil vapor samples. TCE was detected at a concentration of 0.38 µg/m3 in SG7 located at the central portion of the Site. PCE concentrations ranged from 0.26 µg/m^3 in SG4 located at the north-central portion of the Site and Stewart Avenue to 1.71 µg/m^3 in SG2 located along the northern boundary of the Site adjacent to Ponton Avenue. Benzene was detected in 5 of the 8 soil vapor samples. Benzene concentrations ranged from 1.1 µg/m^3 in SG3 located at the central portion of the Site to 27.9 µg/m^3 in SG4 located at the north-central portion of the Site. Cis-1,2-Dichloroethene was detected at a concentration of 0.3 µg/m^3 in SG5 located at the northern corner of the Site. None of the detected soil vapor concentrations exceeded NYSDOH standards.

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, 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 VOCs 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 which would be reduced further following the removal of the identified source areas.

Potential environmental impacts through the groundwater to surface water discharge were considered unlikely based on the concentrations of VOCs in groundwater and the distance to the Westchester Creek.

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 UUSCOs and the remediation of petroleum impacted groundwater. It is expected that a Track 1 alternative will require excavation to a minimum depth of 7 feet across the Site with additional excavation to 15 feet below grade in the areas with deeper fill. All soil 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 petroleum hotpot areas located in the north-central and southeast areas of the Site to a depth of 5 ft and 4 ft respectively with excavation to a depth of 15 ft within a smaller portion of the north-central area;
2. Excavation of soil/fill exceeding Track 1 unrestricted use SCOs as listed in **Table 1** to a minimum depth of 7 feet across the Site with additional excavation to 15 feet in several areas as needed to meet SCOs;
3. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work;
4. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of Track 1 SCOs;
5. 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;
6. Dewatering and treatment of VOC impacted groundwater before discharging to the NYC sewer system under a NYCDEP sewer discharge permit;
7. Collection and analysis of groundwater samples following excavation to evaluate the performance of the remedy on groundwater quality;

8. 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;
9. .If Track 1 cleanup is not achieved implementation of a Site Management Plan (SMP) for long term maintenance of the Engineering Controls;
10. If Track 1 cleanup is not achieved, an Environmental Easement will be filed against the Site to ensure implementation of the SMP.

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 remedy may result.

REMEDIAL ACTION WORK PLAN

1.0 INTRODUCTION

This Remedial Action Work Plan (RAWP) was prepared on behalf of Blondell Equities LLC for the property known as the Former Boyle Auto Wreckers Site, located at 1346 Blondell Avenue in the Bronx, New York (hereafter referred to as the Site). In February 2017, Blondell Equities LLC filed an application with the New York State Department of Environmental Conservation (NYSDEC), to admit the Project Site into the New York State Brownfield Cleanup Program (BCP). The application was deemed complete by the NYSDEC on March 13, 2017. On March 13, 2017, the NYSDEC informed Blondell Equities LLC that the project (Site No. C203089) had been accepted into the BCP with Blondell Equities LLC classified as a "Volunteer". The Brownfield Cleanup Agreement was executed by NYSDEC on August 18, 2017.

This RAWP summarizes the nature and extent of contamination as determined from data gathered during the Remedial Investigation (RI), performed in February and March 2018. 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 1346 Blondell Avenue, Bronx, NY (**Figure 1**). The Site is located in the City of New York in the Pelham Bay neighborhood of the Borough of the Bronx. The Site is comprised of seven tax parcels which were recently merged into one lot (Block 4133 Lot 1). The former seven lots are identified as Block 4133, Lot 12 and Block 4134 Lots 1, 2, 4,

62, 63 and 70 totaling 46,360 sq. ft (1.064 acres). The Site consists of approximately 206 feet of street frontage on Blondell Avenue (**Figure 2**). Currently the property is improved with a 1-story 2,920 square foot (footprint) masonry commercial building constructed in 1920, a 1-3/4-story 684 square foot (footprint) wood frame shed building constructed in 1931 and a 1-1/2 story 490 square foot (footprint) wood frame house constructed in 1930. The buildings are currently unoccupied, but the property has historically been used as an auto wrecking yard, auto repair shop, motorcycle repair shop, auto body shop and as a truck / equipment yard.

The elevation of the Site is approximately 7 feet above the National Geodetic Vertical Datum (NGVD). The area topography gradually slopes to the east toward the rail yard. Groundwater occurs beneath the Site at a depth of approximately 3.3-5.49 feet below grade under water table conditions. Based on regional flow maps and the proximity to surface water, groundwater flow is expected to be to the southeast toward Westchester Creek.

1.2 CONTEMPLATED REDEVELOPMENT PLAN

The redevelopment project consists of the construction of a new nine story mixed-use building. The project will include 212 affordable housing apartment units, 22,000 square feet (sf) of retail space and underground parking for 90 cars. The developer is currently in the process of rezoning the property from M1-1 light manufacturing to R7A residential with a C2-4 commercial overlay. One hundred percent of the lot would be excavated to a depth of approximately 11 feet for the cellar level of the proposed building. It is estimated that a total of 19,268 cubic yards (28,331 tons) of soil will require excavation and off-Site disposal. With groundwater present at 3.3-5.49 feet below grade, dewatering will be required to complete excavation below the water table.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

The area surrounding the property is highly urbanized and is primarily industrial / commercial in accordance with the M1-1 which surrounds the property (**Figure 3**). Adjacent land use includes a NYC Transit Authority rail yard and related facilities to the east, commercial properties to the north and west consisting primarily of auto repair shops and warehouse buildings, and residential and commercial office buildings to the south.

2.0 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS

The field work portion of the Remedial Investigation was conducted by EBC in February and March 2018. The investigation is summarized in the sections below. Further details are provided in the Remedial Investigation Report (EBC September 2018).

2.1 SUMMARY OF REMEDIAL INVESTIGATIONS PERFORMED

2.1.1 Soil Borings

A total of ten soil borings were advanced between February 26 and March 1, 2018 to identify source areas and to obtain general soil quality information present at 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 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.

In accordance with the RI work plan a minimum of two soil samples were retained for laboratory analysis from each boring with the exception of 17SB8 in which only one sample was retained. Three samples were retained from borings 17SB2 and 17SB7.

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**. PFAS?

2.1.2 Monitoring Wells

Six monitoring wells (MW1 through MW6) were installed at the Site from March 15 through March 20, 2018.

All of the wells were installed with a track mounted Geoprobe™ Model 6712DT drilling machine to a depth of approximately 12 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. Monitoring well locations are identified in **Figure 5.**

Prior to sampling, a synoptic round of depth-to-groundwater (DTW) measurements were obtained from wells MW1-MW6 on March 16, 2018 to determine the water table elevation and to calculate the volume of standing water in the well. The depth to groundwater ranged from 3.30-5.49 feet below grade.

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 twenty-one (21) soil samples were collected from ten (10) 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 all six monitoring wells. All groundwater samples from the monitoring wells were analyzed for VOCs / SVOCs by EPA method 8260 / 8270, pesticides / PCBs by EPA method 8081 / 8082 and target analyte list (TAL) metals. In addition, three groundwater samples were analyzed for PFAS compounds and 1,4-dioxane.

2.1.3.3 Soil Gas Samples

To assess the presence of VOCs in soil gas beneath the site, eight soil vapor implants were installed at the Site and sampled on March 15, 2018. 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 2 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 2.7 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 from the monitoring wells were analyzed for VOCs / SVOCs by EPA Method 8260 / 8270, target analyte list (TAL) metals by EPA Method 6010 and Pesticides/PCBs by EPA Method 8081/8082. Three of the groundwater samples were analyzed for PFAS compounds and 1,4-dioxane by EPA Method 537. Soil gas samples were analyzed for VOCs by USEPA Method TO-15.

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 **13**. Below is a summary of the RI findings.

The results of sampling performed during the RI, identified petroleum VOC contamination in shallow soil in the north-central and southeastern corner of the property. Impact was generally limited to the upper 4 feet of the soil column.

Historic fill and / or soil with parameters above unrestricted SCOs has been identified across the Site to depths 7 feet below grade extending as deep as 15 feet in at least two of the borings. Depending on location, the historic fill material contains PAHS, pesticides and one or more metals including barium, chromium, copper, lead, mercury, nickel and zinc, above unrestricted and / or restricted use SCOs.

Groundwater is impacted with petroleum VOCs in the north-central area in the vicinity of MW1 and MW2 with concentrations 62 ug/L to 3,817 ug/L. CVOCs were reported slightly above standards in two monitoring wells including chloroform in MW3 and MW4.

No soil vapor concentrations above NYSDOH standards were identified during the RI.

2.2 SIGNIFICANT THREAT

The NYSDEC and NYSDOH have determined that 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 in the Decision Document.

2.3 SITE HISTORY

2.3.1 Past Uses and Ownership

The Site is currently owned by Blondell Realty Corp. The property is currently developed with a 1-story 2,920 square foot (footprint) masonry commercial building constructed in 1920, a 1-3/4-

story 684 square foot (footprint) wood frame shed building constructed in 1931 and a 1-1/2 story 490 square foot (footprint) wood frame house constructed in 1930. The buildings are currently unoccupied, but the property has historically been used as an auto wrecking yard, auto repair shop, motorcycle repair shop, auto body shop and as a truck / equipment yard. The Site is comprised of seven tax parcels which were recently merged into one lot (Block 4133 Lot 1). The former seven lots are identified as Block 4133, Lot 12 and Block 4134 Lots 1, 2, 4, 62, 63 and 70 totaling 46,360 sq. ft (1.064 acres). The property boundary can be found in Appendix A – Metes and Bounds.

The Site was originally developed with several small residential homes in the late 1800's. It was converted to commercial use around 1929-1930 when the current commercial building was constructed. Use as an automobile junk yard and equipment storage were identified from 1966 through 2013 through Sanborn Fire Insurance maps, aerial photographs and city directory listings. Other uses which overlapped this period included an instrument company (1971-1983), a contracting company (1965-2000), a boiler plate erecting company (1976), a carting company (2013) and a motorcycle repair shop (2005-2015).A listing of previous owners and operators for the property is as follows:

Previous Owners Block 4133, Lot 12 and Block 4134, Lots 62 and 63

Dates	Name	Comments	Contact Info
Prior to 6/30/1969	George J. Tilger	Deed	Unknown
From 6/30/1969 to 5/24/2011	Boyle Auto Wreckers Inc.	Deed	1346 Bryant Avenue, Bronx NY 10474
From 5/24/2011 to 3/10/2016	Blondell Realty Corp.	Deed	411 Bryant Avenue, Bronx, NY 10474
From 3/10/2016 to 8/23/2016	NYC Partnership Housing Development Fund Company	Deed	242 West 36th Street, Third Floor, New York, NY 10018
From 8/23/2016 to present	HP MJM Housing Development Fund Company, Inc.	Deed	242 West 36th Street, Third Floor, New York, NY 10018

Previous Owners Block 4134, Lot 1

Dates	Name	Comments	Contact Info
Prior to 11/16/1971	Albert S. Baxter, Jr.	Deed	Unknown
From 11/16/1971 to 5/24/2011	Boyle Auto Wreckers Inc.	Deed	1346 Blondell Avenue, Bronx, NY 10474
From 5/24/2011 to 3/10/2016	Blondell Realty Corp.	Deed	411 Bryant Avenue, Bronx, NY 10474
From 3/10/2016 to 8/23/2016	NYC Partnership Housing Development Fund Co.	Deed	242 West 36th Street, New York, NY 10018
From 8/23/2016 to present	HP MJM Housing Development Fund Co.	Deed	242 West 36th Street, New York, NY 10018

Previous Owners Block 4134, Lot 2

Dates	Name	Comments	Contact Info
Prior to 8/7/1978	Thomas D. and Mary E. Cormick	Deed	Unknown
From 8/7/1978 to 5/24/2011	Boyle Auto Wreckers Inc.	Deed	1346 Blondell Avenue, Bronx, NY 10474
From 5/24/2011 to 3/10/2016	Blondell Realty Corp.	Deed	411 Bryant Avenue, Bronx, NY 10474
From 3/10/2016 to 8/23/2016	NYC Partnership Housing Development Fund Company	Deed	242 West 36th Street, New York, NY 10018
From 8/23/2016 to present	HP MJM Housing Development Fund Company, Inc.	Deed	242 West 36th Street, New York, NY 10018

Previous Owners Block 4134, Lot 4

Dates	Name	Comments	Contact Info
Prior to 8/29/1967	Nicholas Annette	Deed	Unknown
From 8/29/1967 to 5/24/2011	Boyle Auto Wreckers Inc.	Deed	1346 Blondell Avenue, Bronx, NY 10474
From 5/24/2011 to 3/10/2016	Blondell Realty Corp.	Deed	411 Bryant Avenue, Bronx, NY 10474
From 3/10/2016 to 8/23/2016	NYC Partnership Housing Development Fund Company	Deed	242 West 36th Street, New York, NY 10018
From 8/23/2016 to present	HP MJM Housing Development Fund Company, Inc.	Deed	242 West 36th Street, New York, NY 10018

Previous Owners Block 4134, Lot 70

Dates	Name	Comments	Contact Info
Prior to 6/23/1969	City of New York	Deed	Unknown
From 8/7/1978 to 5/24/2011	Boyle Auto Wreckers Inc.	Deed	1346 Blondell Avenue, Bronx, NY 10474
From 5/24/2011 to 3/10/2016	Blondell Realty Corp.	Deed	411 Bryant Avenue, Bronx, NY 10474
From 3/10/2016 to 8/23/2016	NYC Partnership Housing Development Fund Co.	Deed	242 West 36th Street, New York, NY 10018
From 8/23/2016 to present	HP MJM Housing Development Fund Co.	Deed	242 West 36th Street, New York, NY 10018

Previous Operators

Dates	Name	Comments	Contact Info
Sometime between 1893 to 1965	Residential development and private garages	Sanborn Maps City Directory	1338-1346 Blondell Avenue and 1342-1348 Cooper Avenue, Bronx , NY 10461
Sometime between 1965 to 1977	McCormick Contracting Co. Inc. (1965-1976) Atlantic Instrument Co. (1971-1976) Boyle Auto Wreckers Inc. (1971-1976) Branch Beiler & Plate Erectors Inc. (1976) Residential tenants (1965-1971)	City Directory	1338-1346 Blondell Avenue, Bronx, NY 10461 1348 Cooper Avenue, Bronx, NY 10461

Sometime between 1977 and 1988	Residential development, two storage buildings, an office, a photo store Atlantic Instrument Co. (1983) Boyle Auto Wreckers Inc. (1983)	Sanborn Maps City Directory	1338-1346 Blondell Avenue and 1342-1348 Cooper Avenue, Bronx, NY 10461
Sometime between 1988 and 2000	An auto junk yard, residential development, two storage buildings, and an auto repair shop Boyle Auto Wreckers Inc. (1993)	Sanborn Maps City Directory	1338-1346 Blondell Avenue and 1342-1348 Cooper Avenue, Bronx, NY 10461
Sometime between 2000 to the present	Blutec Construction (2000) NCL (2005) Glen's Custom Auto Repair (2005) Boyle Auto Wreckers Inc. (2008-present) Caveman Cycles Inc. (2008-present) New City Carting Corp. (2013-present)	Sanborn Maps City Directory	13440-1346 Blondell Avenue, Bronx, NY 10461

2.3.2 Summary of Previous Reports

Environmental investigations performed at the Site include the following:

- Phase II Subsurface Investigation Report - AKRF, Inc. July 2006
- Phase II Environmental Site Assessment Report - HydroTech Environmental Corp., December 2015
- Subsurface Investigation Data Summary - Environmental Business Consultants, May 2016
- NYSDEC Spill Files – NYSDEC, Multiple Dates

July 2006 - Phase II Subsurface Investigation Report (AKRF)

A Phase II Subsurface Investigation Report was prepared by AKRF Inc. in July 2006. The report included a summary of a Phase I Environmental Site Assessment which was prepared by AKRF in February 2006.

AKRF identified the following environmental conditions:

- The subject property was listed twice on the closed status New York State Department of Environmental Protection (NYSDEC) spills database in connection with Spill Numbers 9708308 and 9710270. On October 8, 1997, Spill No. 9708308 was opened when an

unknown quantity of gasoline and waste oil was reported spilled onto the ground surface. The listing reported that spills from vehicles were a regular occurrence at the site and that tires were burned on a daily basis. This spill was closed in March 1998. Spill No. 9710270 was reported on December 8, 1997 in which an unknown material and quantity was spilled at the property. The spill was closed in July 2003. According to John Mercorella, a representative of the property owner, an oil and gasoline spill had occurred in the northeastern portion of the site several years ago. Based on the details provided, this spill may be associated with the database listed on-site spill reported in October 1997, though this could not be positively confirmed. The surface pavement at the site was observed to be in poor condition and a portion of the site was surfaced with gravel. Surficial oil staining was observed by AKRF on visible exterior portions of the paved and gravel surfaces. These reported spills or releases from vehicles could have affected subsurface soil and groundwater.

- A 275-gallon storage tank was located in the basement of the northernmost dwelling at the site. Based on observations made during the site visit by AKRF, this tank may be a used oil tank operated by the south-adjacent motorcycle repair shop. A 275-gallon used oil aboveground storage tank was listed on the New York State Department of Environmental Conservation (NYSDEC) Petroleum Bulk Storage (PBS) database for Boyle Auto Wreckers, Inc., a previous tenant of the 1346 Blondell Avenue property. It is possible that this listing represents the 275-gallon aboveground storage tank located in the basement of the residential dwelling. However, AKRF did not have access to the motorcycle repair shop building. Other petroleum storage tanks may be present inside this structure that could be related to the PBS listing for the subject site. In addition, a violation for an unregistered waste oil tank at the site was issued by the NYSDEC, as noted in the December 1997 spill listing for the site.

- The study site was labeled as an "Auto Junk Yard" on historic Sanborn maps from 1977 to 1996. Historic operations as a junk yard may have affected the subsurface soil and/or groundwater at the property.

- Historical land use maps, the regulatory database search, and results of the site reconnaissance indicated that the surrounding area has a long history of auto-related, manufacturing and light industrial operations. Such land use included the presence of historic gasoline filling stations directly across Ponton Avenue to the north and across Blondell Avenue to the southwest. Several fuel oil spills were noted in the NY SPILLS database in the area surrounding the subject site. Known and potential releases from these sites may have affected the local groundwater quality.

The Phase II investigation completed by AKRF included the installation of 8 soil borings and the collection and analysis of 8 soil samples and 5 groundwater samples. Overburden soil consisted entirely of fill material to the groundwater surface which was encountered at a depth of approximately six feet below grade.

AKRF concluded the following:

"Laboratory analytical results indicated that volatile organic compounds (VOCs) were detected in soil samples S-2, S-3, and S-4 that are typically associated with gasoline, including benzene, ethylbenzene, toluene, and xylenes (BTEX), as well as naphthalene and several benzene-related compounds. The laboratory results and the field screening results, which included the detection of petroleum-like odors and elevated photoionization detector (PID) readings, suggest that releases of gasoline and/or other petroleum products in these areas have affected soil and groundwater."

"The results of the analyses for VOCs and SVOCs in groundwater suggest potential gasoline contamination to groundwater in samples collected from borings S-2, S-3, S-4, and to a lesser extent in S-8, where only methyl tert butyl ether (MTBE) was detected. The concentration of gasoline-related contaminants on the northern portion of the site may suggest that contaminated groundwater could have migrated on-site from the historic gasoline station properties to the north identified by AKRF's Phase IESA dated February 2006. Specifically, one of these historic sites was identified directly across Ponton Avenue from the subject site. These historic gasoline station properties were located in a presumed upgradient groundwater flow direction. However,

similar compounds and petroleum-like odors and elevated PID readings were detected in the soil samples from these soil boring locations indicating that reported and/or unreported on-site petroleum spills may have been the main source of the groundwater impact."

"In addition, the site has a history of petroleum use related to automotive and motorcycle repair operations. The New York State Department of Environmental Conservation (NYSDEC) spill listings for the site note the repeated discharge of gasoline and oil to the ground surface. The detected concentrations of metals in the soil, including those above the TAGM guidelines and established eastern U.S. background levels, may be attributable to the urban fill at the site and not necessarily to environmental contamination from historic on-site operations. However, the elevated lead levels may be related to the past use and release of leaded gasoline or lead-containing batteries. Based on the results, elevated levels of lead may exceed the threshold for characterization as hazardous waste under Title 40 of the Code of Federal Regulations when reanalyzed for Toxicity Characteristic Leaching Procedure (TCLP), an analysis for the characterization of waste for disposal. Such soil may require management as hazardous waste if excavated as part of site development activities."

"Soil excavated as part of any future site development activities at the site should be managed in accordance with all applicable regulations. Soil intended for off-site disposal should be tested in accordance with the requirements of the receiving facility. Transportation of material leaving the site for off-site disposal should be in accordance with federal, state and local requirements covering licensing of haulers and trucks, placarding, truck routes, and manifesting, etc. If dewatering is necessary for construction and development purposes, groundwater may require treatment as part of the dewatering handling and discharge process. Prior to initiating any dewatering activities, a groundwater sample should be analyzed to insure it meets the New York City Department of Environmental Protection (NYCDEP) criteria for effluent to municipal sewers, should these be the selected course of action for development."

December 2015 – Phase II Environmental Site Assessment Report (HydroTech)

A Phase II investigation consisting of six soil borings and the collection and analysis of six soil samples and three groundwater samples. Based on the results obtained during the investigation, HydroTech concluded the following:

- Petroleum related VOCs were detected in soil samples beneath the northern portion of the Site at concentrations exceeding their respective Unrestricted SCOs and a petroleum odor was also detected in these samples during soil screening;

- SVOCs characterized as PAHs and metals most likely related to urban fill materials were detected in soil throughout the Site at concentrations greater than their respective regulatory standards.

- No VOCs or SVOCs were identified in the groundwater above their respective GQS.

- Three dissolved metals including magnesium, manganese and sodium were identified in the groundwater at concentrations exceeding their respective GQS.

- The impacts identified during this investigation appear to the effects of the closed NYSDEC spill incident.

May 2016 – Subsurface Investigation Data Summary (EBC)

A supplemental subsurface investigation consisting of 11 borings with analysis of 7 soil and 5 groundwater samples was completed in May 2016.

Laboratory analysis included VOCs, PAHs, pesticides / PCBs and metals for all soil samples and VOCs for the groundwater samples. The results of the investigation identified petroleum contamination (VOCs) in four of seven samples collected with petroleum SVOC contamination reported in one of the four samples with elevated VOCs. Fill material and / or soil with parameters above unrestricted SCOs was reported to be present to 7 ft below the surface. One or more metals and /or SVOCs were reported above restricted residential SCOs in the fill samples.

Groundwater at the Site was present at a depth of approximately 5-6 feet below surface grade. Petroleum VOCs were reported above groundwater standards in one of the samples with Chlorinated VOCs (CVOCs) reported in another sample.

NYSDEC Spill Files

Two NYSDEC spill cases are associated with the property and are identified as Spill Numbers 9708308 and 9710270. Spill Number 9708308 was reported on October 15, 1997. According to the NYSDEC, a former automobile junk yard at the property was spilling oil from used vehicles onto the ground. The NYSDEC investigated the spill incident and did not observe any oil-stained pavement at the property. This Spill case was closed by the NYSDEC on March 3, 1998. Spill Number 9710270 was reported on December 8, 1997. According to the NYSDEC, a former automobile junk yard at the property was burning used automobile tires and spilling oil onto on the ground. The NYSDEC investigated the spill incident and a full site remediation was conducted. This Spill case was closed by the NYSDEC on July 14, 2003. No other spill cases were reported by the NYSDEC.

2.4 GEOLOGICAL CONDITIONS

According to geologic maps of the area created by the United States Geologic Survey (USGS), the bedrock in this area of the Bronx is the Pelham Bay Member of the Hartland formation which consists of middle Ordovician to lower Cambrian age metamorphic plagioclase-sillimanite-biotite gneisses of middle Ordovician to lower Cambrian age. The depth to bedrock in this area of the Bronx is approximately 20 ft below surface grade. Unconsolidated sediments overlie the bedrock and consist of Pleistocene aged sand, gravel and silty clays, deposited by glacial-fluvial activity. Non-native artificial fill materials consisting of dredge spoils, rubble and / or other materials have historically been used to raise and improve the drainage of low lying areas and reclaim land and marsh areas associated with Westchester Creek.

Subsurface soils at the Site consist of historic fill materials and / or soil with parameters above unrestricted SCOs to a depth of approximately 7 feet below grade with some areas extending to 15 feet below grade. Silty sand is present immediately below this layer.

Groundwater at the Site is present under water table conditions at a depth of 3.3 to 5.49 feet below grade. Based upon on-site measurements, groundwater flow is to the northeast and east (**Figure 6**).

Considering the poor quality of groundwater in the area, including high levels of iron, 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 consists of petroleum related contaminants in the top 4 feet of soil in the north-central and southeastern corner.

It has been previously established that two spills occurred as a result of gasoline and/or waste oil spilling from used vehicles onto the ground. According to AKRF's Phase II report, one of those spills most likely occurred in the northeastern portion of the Site. Released gasoline in these spill areas would have encountered the shallow water table almost immediately and then migrated northeast-east with groundwater flow in free phase form resulting in residually impacted soil. Gasoline constituents then dissolved into the groundwater which was in contact with the contaminated soil or which passed through the contaminated soil zone and migrated north.

The historic use of the property as an auto junk yard, combined with automobile and motorcycle repair, resulted in surface spillage of automotive fluids (primarily gasoline) entering the exposed ground and impacting shallow soil. For the most part this was limited to the top 2 to 4 feet of soil.

Dissolved petroleum VOCs originated from residually impacted soils in contact with groundwater during high water table periods / flooding, which then migrated from these areas northeast-east. It is also likely that surface runoff passing through the shallow contaminated soils

across the Site picked up VOC contaminants and then transported them to the water table as dissolved constituents.

2.5.2 Description of Areas of Concern

Source areas identified during the RI include the north-central and southeastern corner of the Site. These areas were most likely impacted by surface spills which occurred through the use of the Site as an auto junk yard and for automobile and motorcycle repair. Shallow petroleum contamination in these areas was limited to the top 2 to 4' and is likely related to surface spillage.

2.5.3 Soil/Fill Contamination

VOC contamination at the Site consists of petroleum related contaminants in shallow soil in two main "hotspot" areas located in the north-central and southeast corner of the Site.

Historic fill material and / or soil with parameters above unrestricted SCOs has been identified across the Site to depths of 7 feet below grade and extending as deep as 15 feet in at least two of the borings. Depending on location, the historic fill material contains pesticides, PAHs and one or more metals including barium, chromium, copper, lead, mercury, nickel and zinc 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 9/18).

2.5.3.2 Comparison of Soil/Fill with SCGs

Table 14 shows sample results above Track 1 Unrestricted SCOs for all overburden soil at the Site. **Figure 7** is a 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

Petroleum VOCs above NYSDEC Ambient Water Quality Standards (AWQS) were reported in the north-central area of the Site In the vicinity of impacted soil. Groundwater is impacted with

petroleum VOCs in the north-central area in the vicinity of MW1 and MW2 with concentrations 62 ug/L to 3,817 ug/L.

CVOCs were reported slightly above standards in two monitoring wells including chloroform in MW3 and MW4.

Non-petroleum related SVOC detections above part per trillion groundwater standards were reported in most of the groundwater samples.

Several dissolved metals were detected above standards including iron, manganese and sodium in most of the wells. These metals are consistent with general groundwater quality throughout the area. Magnesium was also reported above standards at the MW1 location.

2.5.4.1 Summary of Groundwater Data

The results of groundwater samples collected during the RI are summarized in **Tables 7-12**. Further information on groundwater sample collection, handling and analysis can be found in the RI Report (EBC 9/18).

2.5.4.2 Comparison of Groundwater with SCGs

Sample results above groundwater standards in monitor wells prior to the remedy are shown in **Table 15**. 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 low in the eight soil vapor samples, and chlorinated VOCs (CVOCs) were also low.

2.5.5.1 Summary of Soil Vapor Data

A table of soil vapor data collected prior to the remedy is shown in **Table 13**. Further information on soil gas sample collection, handling and analysis can be found in the RI Report (EBC 9/18). 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 petroleum VOCs in soil in the north-central and southeastern areas of the Site. Elevated levels of metals, PAHs and pesticides are also present in fill materials.

Contaminant Release and Transport Mechanism

Petroleum contamination is present in soil at depths which may put it in direct contact with the groundwater during periods of high water elevation or flooding. Contaminants in shallow soil can also be affecting groundwater quality as surface runoff infiltrates the exposed impacted zone and acts as transport water for dissolved constituents.

Dissolved components migrating from the source area or infiltrating through surface runoff would travel northeast to east with groundwater flow.

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, pesticides and heavy metals through several routes. Workers excavating

impacted soil may be exposed through 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 vapor intrusion is a concern for residents of the planned construction in the north-central area of the Site, however remediation of the source areas is expected to greatly reduce if not eliminate this potential.

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. This potential will be further reduced following the removal of the source are under the planned redevelopment of the Site.

2.6.2 Fish & Wildlife Remedial Impact Analysis

Since petroleum VOCs in groundwater may be migrating beneath the Site at low concentrations in a northeasterly direction, the groundwater to surface water discharge pathway was evaluated. The nearest surface water to the Site is Westchester Creek located approximately 925 feet to the southeast. 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.

no

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.

nope

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. This would include excavation to a minimum depth of 7 feet across the Site with excavation to 15 feet in some areas to meet unrestricted use SCOs. The Alternative includes dewatering / treatment of groundwater beneath the Site to remediate impacted groundwater and to facilitate the excavation of fill / soil 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. Based on the results of the RI, vapor intrusion is not expected to be an issue for this Site.

- Alternative 2 - Track 2, remediation of all soils to restricted residential criteria to a depth of 15 feet if soils below 15 feet do not represent a source of contamination. This alternative would require a slightly lesser degree of excavation than Alternative 1 to meet SCOs, however, the excavation depth planned for the new building will likely exceed the excavation depth needed to meet this alternative in most areas of the Site. As with Alternative 1, some areas will required over-excavation to depths of 15 feet to meet restricted residential SCOs. 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. This alternative is provided as a contingency in the event that Track 1 SCOs cannot be met. Since the planned excavation depth for the new building along with the over excavation of hotspot areas is expected to satisfy SCOs for both Alternative 1 and

Alternative 2, Alterative 2 has been added as a contingency in the event that Alternative 1 cannot be achieved.

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 and historic fill and remediating groundwater. 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 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 sub-slab depressurization 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 5.5.9). 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.

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 $ 2,260,346. This cost estimate includes the following elements and assumptions:

- Excavate to 5 ft in the north-central and south east petroleum hotspot areas;
- Excavate to a minimum depth of 7 feet across the Site with over excavation in several areas to 15 ft or more as needed to achieve Track 1.
- Disposal of approximately 11,106 cy of historic fill / soil as non-hazardous with lead levels <1500 ppm;
- Disposal of approximately 2,480 cy of petroleum contaminated soil as non-hazardous with lead levels <1,500 ppm;
- Disposal of approximately 8,222 cy of clean native soil for beneficial reuse;
- Groundwater dewatering and treatment during foundation construction; 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 not compatible with its current M1-1 zoning; however, the developer is currently in the process of rezoning the property to R7A residential with a C2-4 commercial overlay. Following remediation, the Site will meet unrestricted use objectives which will exceed the objectives for its planned commercial-retail and residential 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 and remediating groundwater. 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 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 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 residential cleanup levels for the top 11 feet. 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 by removal of all impacted soil and groundwater and through the building's construction which will place the cellar level foundation 5.5 to 7.7 ft below the water table.

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 residential objectives to a depth of 15 feet and by remediating groundwater. 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 residential objectives in the upper 11 feet and from on-site groundwater by extraction, treatment and off-site discharge (sewer system) of groundwater beneath the Site during construction.

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 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.

3.5.7 Cost

Costs associated with Alternative 2 are almost identical to Alternative 1 adding only those costs associated with preparation of a Site Management Plan and Environmental Easement package and are estimated at approximately $ 2,287,946. This cost estimate includes the following elements and assumptions:

- Excavate to 5 ft in the north-central and southeast petroleum hot spot areas;
- Excavate to a minimum depth of 7 feet across the Site with over excavation in several areas to 15 ft or more as needed to achieve Track 1.
- Disposal of approximately 11,689 cy of historic fill / soil as non-hazardous with lead levels <1500 ppm;
- Disposal of approximately 711 cy of petroleum contaminated soil as non-hazardous with lead levels <1,500 ppm;
- Disposal of approximately 6,868 cy of clean native soil for beneficial reuse;
- Groundwater dewatering and treatment during foundation construction; and
- HASP and CAMP monitoring for the duration of the remedial activities.
- Groundwater dewatering and treatment during excavation;

- 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.

3.5.8 Compatibility with Land Use

The proposed redevelopment of the Site is not compatible with its current M1-1 zoning; however, the developer is currently in the process of rezoning the property to R7A residential with a C2-4 commercial overlay. Following remediation, the Site will meet restricted-residential use objectives which will meet objectives for its planned mixed commercial-retail and hotel 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 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 contaminated soil and historic fill / soils 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.

3.6.1 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 property is currently zoned M1-1. M1 districts are often buffers between M2 or M3 districts and adjacent residential or commercial districts. M1 districts typically include light industrial uses, such as woodworking shops, repair shops, and wholesale service and storage facilities. Nearly all industrial uses are allowed in M1 districts if they meet the stringent M1 performance standards. Offices, hotels and most retail uses are also permitted. Certain community facilities, such as hospitals, are allowed in M1 districts only by special permit, but houses of worship are allowed as-of-right.

The proposed project, which includes a nine story mixed-use building, which will include affordable housing units, retail space and underground parking, is compatible with the surrounding land use and will be in compliance with zoning once the rezoning (currently underway) from M1-1 light manufacturing to R7A residential with a C2-4 commercial overlay is completed.

Applicable Comprehensive Community Master Plans or Land Use Plans

The developer is currently in the process of rezoning the property from M1-1 light manufacturing to R7A residential with a C2-4 commercial overlay. The zoning change was certified to begin the Uniform Land Use Review Procedure (ULURP) on October 29, 2018.

R7 districts are medium-density apartment house districts mapped in much of the Bronx as well as the Upper West Side in Manhattan and Brighton Beach in Brooklyn. The height factor regulations for R7 districts encourage lower apartment buildings on smaller zoning lots and, on larger lots, taller buildings with less lot coverage. As an alternative, developers may choose the optional Quality Housing regulations to build lower buildings with greater lot coverage.

C1-1 through C1-5 and C2-1 through C2-5 districts are commercial overlays mapped within residence districts. Mapped along streets that serve local retail needs, they are found extensively throughout the city's lower- and medium-density areas and occasionally in higher-density districts.

Typical retail uses include neighborhood grocery stores, restaurants and beauty parlors. C2 districts permit a slightly wider range of uses, such as funeral homes and repair services. In mixed buildings, commercial uses are limited to one or two floors and must always be located below the residential use.

Overlay districts differ from other commercial districts in that residential bulk is governed by the residence district within which the overlay is mapped. All other commercial districts that permit residential use are assigned a specific residential district equivalent. Unless otherwise indicated on the zoning maps, the depth of overlay districts ranges from 100 to 200 feet.

The project is currently going through the ULURP process to assure it is compatible with land use plans.

Surrounding Property Uses

The land use in the immediate vicinity of the Site (**Figure 3**) is primarily industrial / commercial in accordance with the M1-1, M1-2 and M3-1 zoning which surrounds the property. Adjacent land use includes a NYC Transit Authority rail yard and related facilities to the east, commercial properties to the north and west consisting primarily of auto repair shops and warehouse buildings, and residential and commercial office buildings to the south.

There are no schools or daycare centers in the immediate area (500 ft) of the Site, however there are three schools (The Stephen D. McSweeney School, Herbert H Lehman High School and the Lewis and Clark School) located further to the east and west of the Site.

The proposed project is compatible with the surrounding land use and will be in compliance with the R7A residential / C2-4 commercial overlay rezoning which is currently underway.

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 (New York Public Library - Pelham Bay Branch, Bronx 11 Community District).

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.

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 location of the Site on Blondell Avenue 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 6 line with a subway stop on Westchester Avenue

and Ferris Place (3 blocks to the southwest). 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

A majority the Site is located within Zone X, the 0.2 Percent Annual Chance Flood Hazard zone. The nearest high risk flood zone is located 690 feet to the east.

Geography and geology of the Site

The selected remedy will excavate historic fill materials and soil with parameters in excess of unrestricted SCOs across the Site to a depth of 7 feet with over excavation in some areas to 15 feet as needed to achieve Track 1. Redevelopment will also remove soils to a depth of 11 feet for the cellar level of the new building. The selected alternative and development have considered the geography and geology of the Site.

Current Institutional Controls

There are no institutional controls presently assigned to the Site.

3.7 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 and the remediation of petroleum impacted groundwater. It is expected that a Track 1 alternative will require excavation to a minimum depth of 7 feet across the Site with additional excavation in several areas to 15 feet as needed to meet unrestricted SCOs. All soil 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 petroleum hotpot areas located in the north-central and southeast areas of the Site to a depth of 5 ft and 4 ft respectively with excavation to a depth of 15 ft within a smaller portion of the north-central area;
2. Excavation of soil/fill exceeding Track 1 unrestricted use SCOs as listed in **Table 1** to a minimum depth of 7 feet across the Site with additional excavation to 15 feet in several areas as needed to meet SCOs;
3. Screening for indications of contamination (by visual means, odor, and monitoring with PID) of all excavated soil during any intrusive Site work;
4. Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of Track 1 SCOs;
5. 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;
6. Dewatering and treatment of VOC impacted groundwater before discharging to the NYC sewer system under a NYCDEP sewer discharge permit;
7. Collection and analysis of groundwater samples following excavation to evaluate the performance of the remedy on groundwater quality;
8. 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;
9. .If Track 1 cleanup is not achieved implementation of a Site Management Plan (SMP) for long term maintenance of the Engineering Controls;

10. If Track 1 cleanup is not achieved, an Environmental Easement will be filed against the Site to ensure implementation of the SMP.

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 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 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 Thomas Gallo. His 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 A.**

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 B**.

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 C**.

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 prepared for this project is provided in **Attachment D**. The public will be 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:

New York Public Library- Pel
3060 Middletown Road, Bronx
Phone: 718-792-6744

Westchester Square Branch
2521 Glebe Ave
Bronx 10461

Hours
Mon 10:00 am – 7:00 pm
Tue 10:00 am – 7:00 pm
Wed 10:00 am – 7:00 pm
Thu 10:00 am – 7:00 pm
Fri 10:00 am – 5:00 pm
Sat 10:00 am – 5:00 pm
Sun Closed

Bronx Community District 11
1741 Colden Avenue, Bronx NY 10462
Phone: 718-892-6262

4.2 GENERAL REMEDIAL ACTION INFORMATION

4.2.1 Project Organization

The Project Manager for the Remedial Activity will be Ms. Maggie Ellis. 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 will be 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 Stewart Avenue on a daily basis during soil excavation activity. The soil disposal transport route will be as follows:

> ENTERING SITE - from the Cross Bronx Expressway heading east; take the Castle Hill Avenue Exit and turn left, heading north on Castle Hill Road. Turn right heading northeast on Westchester Avenue. Turn left on Blondell Avenue to the Site entrance on the right.
>
> EXITING SITE – Turn left onto Blondell Avenue heading southeast to Westchester Avenue. Turn right on to Westchester Avenue heading southwest to Zerega Avenue. Turn left on to Zerega Avenue, heading south. Turn right onto the Cross Island Expressway service road heading west and continue to the Cross Island Expressway on-ramp (bearing left).

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 (minimum 24 hr OSHA) is required to perform the removal of the petroleum impacted soil, historic fill and uncontaminated native soil. The excavation contractor's on-site personnel engaged in this work will all 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 16**. 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 or teleconference call 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 17**. 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 $ 2,585,300. An itemized and detailed summary of estimated costs for all remedial activity is attached as **Attachment F**.

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 construction fence is present around the portions of the Site which are not bordered by adjacent buildings (west) with entrance / exit gates located on Blondell Avenue. 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;
- Quantities of oxidant material applied at specific injection locations of the Site;
- A summary of any and all complaints with relevant details (names, phone numbers);
- A summary of CAMP finding, including excursions;
- 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;
- Sampling results received following internal data review and validation, 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 as needed, 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 petroleum impacted soil do a depth of 5 feet in the north-central and southeastern areas of the Site and fill materials present in the top 7 feet of soil across the Site with additional excavation of several areas to a depth of approximately 15, or as needed to meet 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 soils will be performed by an excavation contractor using appropriately trained personnel (24 hr HAZWOPER). Historic fill materials and native soils will also be performed by the excavation contractor for the construction project using personnel with 24 hr HAZWOPER training.

Historic fill materials and soil with parameters above unrestricted SCOs will be excavated to a depth of approximately 7 feet (sitewide) with additional excavation in several areas to 15 ft or as needed to meet unrestricted SCOs. Excavation for the cellar level of the new building will continue sitewide to a depth of approximately 11 feet. Over excavated areas will be backfilled using clean native soil excavated from other areas of the Site or imported material meeting 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 (See Section 5.5.9)

5.1 CONTINGENCY

5.1.1 UST Removal Methods

Any USTs 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 licensed waste transported. 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 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 14** 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 bottom of excavation endpoint soil samples will be collected following removal of all soil needed for construction of the buildings cellar level 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.

(2) Sidewall endpoint soil samples will be collected from those petroleum hotspot areas in which the excavation extends beyond the site-wide excavation depth of 11 ft. Sidewall samples collected from the petroleum hotspot areas will be analyzed for VOCs and SVOCs.

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 collected when the excavation extends to the Site boundaries. Sidewall samples only be collected from the petroleum hotspot areas if the excavation extends beyond the site-wide excavation depth of 11 ft.

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 site-wide 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. Post-excavation soil samples from the petroleum hotspot areas will be analyzed for VOCs by EPA Method 8260B, SVOCs by EPA method 8270.

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 12,400 cubic yards (18,600 tons) of petroleum impacted and historic fill soil will be generated by excavating the site to a depth 7 ft with over excavation to approximately 15 ft in two locations. An additional 6,868 cubic yards (10,302 tons) of clean native soil will be excavated to 11 feet below grade from the Site for construction of the proposed building's cellar. A portion of the clean native soil will be reused, if found to be suitable, to backfill any over

excavated areas. The remainder of clean soil will be transported off-Site for disposal at a beneficial reuse facility or other approved destination.

5.5 SOIL/MATERIALS MANAGEMENT PLAN

Excavated soil will be secured and temporarily stored on-site until arrangements can be made for off-site disposal. As an alternative, pre-characterization samples may be collected to allow the soil to be loaded directly on to trucks for transport to the disposal facility. All excavated soil and historic fill is expected to be classified as non-hazardous.

The final determination on classification will be based on the results of waste characterization analysis and the NYSDEC.

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 petroleum 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 two areas of the Site to a depth of between 4 and 5 feet below grade. The petroleum impacted soil is present within the fill material found throughout the Site to depths of 7 feet below grade. The historic fill material contains SVOCs and metals above unrestricted and / or restricted commercial use SCOs. Soil with parameters above unrestricted SCOs is also present to a depth of 15 ft in at least two areas of the Site requiring excavation to meet a Track 1 cleanup.

Petroleum and historic fill soil will be segregated from non-contaminated native soils and disposed of off-Site at a permitted disposal facility.

Based on the results of the RI, it is not anticipated that any of the soil will be classified as hazardous. 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 petroleum impacted and historic fill soil 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 and will require excavation for basement areas and foundation components during construction of the new building. Since excavation of the cellar level will begin following removal of petroleum contaminated soil and historic fill, it is expected that native soils will not be contaminated. However, if evidence of contamination is discovered during the excavation of cellar level, the contamination will be removed to the extent possible and segregated from clean native soils for proper disposal. Clean native soils 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 or reused on-site if found to meet SCOs through testing and if acceptable to the structural engineer.

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 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 Cross Bronx Expressway heading east; take the Castle Hill Avenue Exit and turn left, heading north on Castle Hill Road. Turn right heading northeast on Westchester Avenue. Turn left on Blondell Avenue to the Site entrance on the right.

- EXITING SITE – Turn left onto Blondell Avenue heading southeast to Westchester Avenue. Turn right on to Westchester Avenue heading southwest to Zerega Avenue. Turn left on to Zerega Avenue, heading south. Turn right onto the Cross Island Expressway service road heading west and continue to the Cross Island Expressway on-ramp (bearing left).

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 residential neighborhoods around 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 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 facility acceptance letters will be provided to the NYSDEC Project Manager before the start of excavation activities. It is anticipated that the soil will be disposed of at up to 3 different facilities, based on the following classification:

- Non Hazardous - Contaminated (petroleum) Low Lead < 1,500 mg/kg
- Non Hazardous - Contaminated (historic fill) Low Lead < 1,500 mg/kg
- Uncontaminated Native Soil - meets NJDSC Criteria for beneficial Reuse

The total quantity of material expected to be disposed off-Site is 19,268 cubic yards, including 12,400 cubic yards of petroleum impacted soil / historic fill and 6,868 cubic yards of clean native soil.

Hazardous Soil Disposal and Transport

It is not expected that any soil will be classified as hazardous, however if any soil is classified as hazardous it 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 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 / Reuse On-Site

Clean native soil removed from the Site for development purposes (i.e. basement levels) 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. Confirmation testing of clean soils will be in accordance with Part 360.13 Section e as follows:

Minimum Analysis Frequency for Fill Material

Fill Material Quantity (cubic yards)	**Minimum Number of Analyses for Volatile Organic Compounds, if Required**	**Minimum Number of Analyses for all other parameters**
0-300	2	1
301-1000	4	2
1001-10,000	6	3
10,001+	Two for every additional 10,000 cubic yards or fraction thereof	One per every additional 10,000 cubic yards or fraction thereof

Fill material samples must be analyzed for:
(i) the Metals, PCBs/Pesticides, and Semivolatile organic compounds listed in section 375-6.8(b) of this Title;
(ii) asbestos if demolition of structures has occurred on the site;
(iii) volume of physical contaminants, if present, based on visual observation; and
(iv) volatile organic compounds listed in section 375-6.8(b) of this Title, if their presence is possible based on site events such as an historic petroleum spill, odors, photoionization detector meter or other field instrument readings.

Uncontaminated native soil confirmed by the above testing program and removed from the site, will be disposed of as C&D material or sent to a beneficial re-use facility. Note that clean soils disposed of at an out-of-state facility will be subject to the testing requirements of that facility in lieu of testing program outlined above the final destination of soils whether classified as contaminated or uncontaminated must be approved by the Remedial Engineer.

Clean native soil to be re-used on Site as backfill will be required to meet the SCOs for the cleanup track achieved (Unrestricted –Track 1, Restricted Residential – Track 2). 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		

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. 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 soil 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 5 to 6 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. 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 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. A supplemental dewatering work plan will be submitted to the NYSDEC, which will include elements such as the quantity of dewatering expected, equipment specifications, pumping, storage, and discharge locations, and the dewatering treatment required. The supplemental dewatering work plan will be approved by the NYSDEC prior to the start of work.

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 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 regulations at the time the RCA is acquired. RCA imported from compliant facilities does not require additional testing unless required by NYS DEC under its terms of operations for the facility. Documentation of part 360-16 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. Gravel or stone material from a virgin mined source may be imported to the Site without 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. As per DER-10, if soil from sourced from a virgin mine or pit is imported, at least one round of characterization sampling for the first 100 cubic yards is required in accordance with Table 4 of CP-51/Table 5.4(e)10 of DER-10.
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. Any soil imported to the site needs to be tested in accordance with 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 full scan parameters (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs). These analyses will not be limited to STARS parameters where tanks are identified without prior approval by NYSDEC. Analyses will not be otherwise limited without NYSDEC approval.

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 C**.

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, no residual contamination will remain 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 unrestricted use remedy. If a Track 1 Cleanup cannot be achieved, then a Track 2 restricted residential cleanup is proposed.

If a Track 1 remedy is not achieved, the Site will be restricted to restricted-residential, 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 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 Draft DER-10 Technical Guidance for Site Investigation and Remediation, dated [month, year], and the guidelines provided by NYSDEC.

Site management activities, reporting, and EC/IC certification will be scheduled on a certification period basis. The certification period will be annually. 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) and Certificate of Completion (COC) 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 FER 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 FER 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).

Additionally, I certify that:

- *All documents generated in support of this report have been submitted in accordance with the DER's electronic submission protocols and have been accepted by the Department;*
- *All data generated in support of this report have been submitted in accordance with the Department's electronic data deliverable and have been accepted by the Department;*
- *All information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as Owner's Designated Site Representative: [and I have been authorized and designated by all site owners to sign this certification] for this site.*

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 following RAWP approval, the issuance of NYCDOB Building permits and within 10 days of the distribution of the Construction Fact Sheet. Mobilization will be followed by the installation of shoring structures, installation and operation of dewatering equipment, excavation and disposal of petroleum impacted soil, historic fill materials and native soil and by confirmation soil sampling. Excavation work may proceed in several stages as needed to accommodate pile or sheet driving equipment, underpinning and other components related to the support of excavation (SOE). The work is expected to take approximately 12 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 3 weeks of RAWP approval, and issuance of SOE and new Building permits
Mobilize equipment to the site and construct truck pad and other designated areas	Within 3 weeks following the pre-construction meeting and issuance of Pre-Construction Fact Sheet
Mobilize shoring contractor and equipment to the Site	Within 3 weeks following the pre-construction meeting
Mobilize excavation contractor and equipment to the Site	Within 3 weeks following the installation of shoring or as shoring proceeds
Begin excavation of USTs (if present)	Upon discovery during initial excavation cut (top six feet of soil).
Mobilize dewatering contractor and equipment to the Site	Within 3 weeks following the installation of shoring or as shoring proceeds
Complete excavation and disposal of historic fill material and clean native soil.	Within 12 months of mobilization
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	Rationale for Sampling	Laboratory Analysis
Subsurface soil (0 to 5 feet bgs)	from 5 of the borings throughout the site.	5	To assess quality of historic fill across the Site.	VOCs EPA Method 8260B, SVOCs EPA Method 8270, pesticide / PCBs EPA Method 8081/8082, TAL metals EPA 6010. .
Subsurface soil (Water table)	From 10-20 borings throughout the site.	10-20	To evaluate the extent of soil impact and delineate petroleum source areas	VOCs EPA Method 8260B, SVOCs EPA Method 8270.
Subsurface soil (12.5-15 feet below grade)	From 5 borings throughout the site.	5	To assess quality of native soil at the site with respect to Unrestricted SCOs at the Site.	VOCs EPA Method 8260B, SVOCs EPA Method 8270, EPA Method 8270, pesticide / PCBs EPA Method 8081/8082, TAL metals EPA 6010.
Total (Soils)		20-30		
Groundwater (water table)	From 6 monitoring wells across the Site.	6	To assess groundwater quality at the Site.	VOCs EPA Method 8260B, SVOCs EPA Method 8270, pesticide / PCBs EPA Method 8081/8082, TAL metals EPA 6010 dissolved and total.
Total (Groundwater)		6		
Soil Gas (14 ft below existing grade)	8 soil gas implants to be installed across the Site.	8	Evaluate soil gas across the Site.	VOCs EPA Method TO15
Total (Soil Gas)		8		
MS/MSD	Matrix spike and Matrix spike duplicates at the rate 5%	3	To meet requirements of QA / QC program	1 soil and 1 groundwater MS/MSD for VOCs EPA Method 8260B, SVOCs EPA Method 8270, pesticide / PCBs EPA Method 8081/8082, TAL metals. Soil for VOCs EPA Method 8260B, SVOCs EPA Method 8270 and TAL metals EPA 6010.
Trip Blanks	One laboratory prepared trip blank to accompany samples each time they are delivered to the laboratory.	3	To meet requirements of QA / QC program	VOCs EPA Method 8260B
Total (QA / QC Samples)		6		

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 3
Soil Analytical Results
Volatile Organic Compounds

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	Phase II Results - May 2016												RIR Results - February 2018																	
			B1		B2		B3		B4		B5				B10		17SB1								17SB2							
			(4-5') 5/26/2016 µg/Kg		(1-3') 5/26/2016 µg/Kg		(3-5') 5/26/2016 µg/Kg		(3-5') 5/26/2016 µg/Kg		(0-2') 5/26/2016 µg/Kg		(5-7') 5/26/2016 µg/Kg		(6-8') 5/26/2016 µg/Kg		(5-7') 2/26/2018 µg/Kg				(12.5-15') 2/26/2018 µg/Kg				(2-4') 2/26/2018 µg/Kg				(5-7') 2/26/2018 µg/Kg				(12.5-15') 2/26/2018 µg/Kg			
			Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
1,1,1,2-Tetrachlorothane			<1400	1400	<880	880	<1300	1300	<4.8	4.8	<800	800	<24	24	<17	17	<24	24	U	77	<19	19	U	0.94	<24000	24000	U	1200	< 18	18	U	0.88	<6.0	6.0	U	1.2
1,1,1-Trichloroethane	680	100,000	< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 680	680	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
1,1,2,2-Tetrachloroethane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
1,1,2-Trichloroethane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
1,1-Dichloroethane	270	26,000	< 270	270	< 220	220	< 270	270	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 270	270	U	77	< 4.7	4.7	U	0.94	< 1200	1,200	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
1,1-Dichloroethene	330	100,000	< 330	330	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 330	330	U	38	< 4.7	4.7	U	0.47	< 600	600	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
1,1-Dichloropropene			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
1,2,3-Trichlorobenzene			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
1,2,3-Trichloropropane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
1,2,4-Trichlorobenzene			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
1,2,4-Trimethylbenzene	3,600	52,000	**4,000**	350	**3,900**	220	**720**	330	**230**	320	**6,300**	200	**1.8**	5.9	< 4.2	4.2	< 380	380	U	38	**120**	4.7	-	0.47	**1400000**	60000	D	6000	**5.4**	4.4	-	0.44	< 6.0	6.0	U	0.60
1,2-Dibromo-3-chloropropane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
1,2-Dibromomethane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
1,2-Dichlorobenzene	1,100	100,000	< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 1100	1,100	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
1,2-Dichloroethane	20	3,100	< 35	35	< 22	22	< 33	33	< 4.8	4.8	< 20	20	< 5.9	5.9	< 4.2	4.2	< 38	38	U	38	< 4.7	4.7	U	0.47	< 600	600	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
1,2-Dichloropropane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
1,3,5-Trimethylbenzene	8,400	52,000	**2,000**	350	**740**	220	**350**	330	**47**	320	**2,600**	200	**1.2**	5.9	< 4.2	4.2	< 380	380	U	38	**55**	4.7	-	0.47	**520,000**	60000	D	6000	**2.4**	4.4	J	0.44	< 6.0	6.0	U	0.60
1,3-Dichlorobenzene	2,400	4,900	< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 2400	2,400	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
1,3-Dichloropropane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
1,4-Dichlorobenzene	1,800	13,000	< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 1800	1,800	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
2,2-Dichloropropane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
2-Chlorotoluene			< 350	350	< 220	220	**110**	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
2-Hexanone (Methyl Butyl Ketone)			< 1800	1,800	< 1100	1,100	< 1600	1,600	< 24	24	< 1000	1,000	< 29	29	< 21	21	< 1900	1,900	U	380	< 24	24	U	4.7	< 30000	30000	U	6000	< 22	22	U	4.4	< 30	30	U	6.0
2-Isopropyltoluene			**58**	350	**1,500**	220	< 330	330	**0.96**	4.8	**120**	200	**0.92**	5.9	< 4.2	4.2	**48**	380	J	38	**0.68**	4.7	J	0.47	**7,800**	6,000		600	**5.7**	4.4	-	0.44	**1.1**	6.0	J	0.60
4-Chlorotoluene			< 350	350	< 220	220	**49**	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
4-Methyl-2-Pentanone			< 1800	1,800	< 1100	1,100	< 1600	1,600	< 24	24	< 1000	1,000	< 29	29	< 21	21	< 1900	1,900	U	380	< 24	24	U	4.7	< 30000	30000	U	6000	< 22	22	U	4.4	< 30	30	U	6.0
Acetone	50	100,000	**360**	3,500	< 220	220	**440**	3,200	**68**	48	< 200	200	**62**	50	**40**	42	< 380	380	U	380	**19**	24	JS	4.7	< 6000	6,000	U	6000	**82**	22	S	4.4	**38**	30	S	6.0
Acrolein			<1400	1,400	<880	880	<1300	1,300	<19	19	<800	800	<24	24	<17	17	<380	380	U	77	<4.7	4.7	U	0.94	<6000	6,000	U	1200	<4.4	4.4	U	0.88	<6.0	6.0	U	1.2
Acrylonitrile			<1400	1,400	< 880	880	<1300	1,300	<9.5	9.5	< 800	800	<24	24	<17	17	<1500	1,500	U	38	<19	19	U	0.47	< 24000	24000	U	600	<18	18	U	0.44	<24	24	U	0.6
Benzene	60	4,800	**480**	350	**860**	220	**430**	330	< 4.8	4.8	**21**	60	< 5.9	5.9	< 4.2	4.2	< 60	60	U	38	**34**	4.7	-	0.47	**1,500**	6,000	J	600	< 4.4	4.4	U	0.44	**3.3**	6.0	J	0.60
Bromobenzene			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
Bromochloromethane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
Bromodichloromethane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
Bromoform			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
Bromomethane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	150	< 4.7	4.7	U	1.9	< 6000	6,000	U	2400	< 4.4	4.4	U	1.8	< 6.0	6.0	U	2.4
Carbon Disulfide			< 350	350	< 220	220	< 330	330	**3.5**	4.8	< 200	200	**1.7**	5.9	**1.5**	4.2	< 380	380	U	77	**1.3**	4.7	J	0.94	< 6000	6,000	U	1200	**1.8**	4.4	J	0.88	< 6.0	6.0	U	1.2
Carbon tetrachloride	760	2,400	< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 1200	1,200	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
Chlorobenzene	1,100	100,000	< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 1100	1,100	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
Chloroethane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
Chloroform	370	49,000	< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 370	370	U	38	< 4.7	4.7	U	0.47	< 600	600	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
Chloromethane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
cis-1,2-Dichloroethene	250	100,000	< 250	250	< 220	220	< 250	250	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 250	250	U	38	< 4.7	4.7	U	0.47	< 600	600	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
cis-1,3-Dichloropropene			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
Dibromochloromethane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
Dibromomethane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
Dichlorodifluoromethane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
Ethylbenzene	1,000	41,000	**510**	350	**11,000**	4,400	**230**	330	< 4.8	4.8	**350**	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	**330**	300	-	30	**34,000**	6,000	-	600	**17**	4.4	-	0.44	**1.8**	6.0	J	0.60
Hexachlorobutadiene			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
Isopropylbenzene			**110**	350	**2,800**	220	**53**	330	**40**	320	**270**	200	< 5.9	5.9	< 4.2	4.2	**230**	230	-	38	**43**	4.7	-	0.47	**9,700**	6,000	-	600	**52**	4.4	-	0.44	**27**	6.0	-	0.60
m&p-Xylenes	260	100,000	**3,000**	350	**8,000**	220	**1,800**	330	**91**	320	**1,300**	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	**740**	300	-	59	**930,000**	60000	D	12000	**27**	4.4	-	0.88	**2.1**	6.0	J	1.2
Methyl Ethyl Ketone (2-Butanone)	120	100,000	< 350	350	< 220	220	< 330	330	< 29	29	< 200	200	**15**	35	**8.4**	25	< 380	**380**	U	380	< 28	28	U	4.7	< 6000	6,000	U	6000	< 27	27	U	4.4	< 36	36	U	6.0
Methyl t-butyl ether (MTBE)	930	100,000	< 710	710	**280**	440	< 650	650	< 9.5	9.5	**130**	400	**9.7**	12	< 8.4	8.4	< 770	770	U	77	< 9.4	9.4	U	0.94	< 1200	1,200	U	1200	< 8.8	8.8	U	0.88	< 12	12	U	1.2
Methylene chloride	50	100,000	< 350	350	< 22	22	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	**380**	U	380	< 4.7	4.7	-	4.7	< 6000	6,000	U	6000	< 4.4	4.4	U	4.4	< 6.0	6.0	U	6.0
Naphthalene	12,000	100,000	**910**	350	**46,000**	4,400	**1,300**	330	< 4.8	4.8	**13,000**	4,000	**140**	360	< 4.2	4.2	< 380	380	U	77	**13**	4.7	-	0.94	**210,000**	6,000	-	1200	**2.8**	4.4	J	0.88	< 6.0	6.0	U	1.2
n-Butylbenzene	12,000	100,000	**210**	350	**7,400**	4,400	**60**	330	**96**	320	**880**	200	< 5.9	5.9	< 4.2	4.2	**760**	380	-	38	**3.4**	4.7	J	0.47	< 6000	6,000	U	600	**7.6**	4.4	-	0.44	**1.7**	6.0	J	0.60
n-Propylbenzene	3,900	100,000	**380**	350	**9,100**	4,400	**140**	330	**180**	320	**830**	200	< 5.9	5.9	< 4.2	4.2	**1,500**	380	-	77	**89**	4.7	-	0.94	**25,000**	6,000	-	1200	**140**	4.4	-	0.88	**47**	6.0	-	1.2
o-Xylene	260	100,000	**480**	350	**870**	220	**630**	330	< 4.8	4.8	**1,300**	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	**13**	4.7	-	0.94	**4,900**	6,000	J	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
p-Isopropyltoluene			**140**	350	**450**	220	**86**	330	< 4.8	4.8	**440**	200	**320**	300	< 4.2	4.2	**70**	380	J	38	**0.63**	4.7	J	0.47	**19,000**	6,000	-	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
sec-Butylbenzene	11,000	100,000	**88**	350	**2,700**	220	**38**	330	**79**	320	**600**	200	< 5.9	5.9	< 4.2	4.2	**470**	380	-	38	**4.2**	4.7	J	0.47	**12,000**	6,000	-	600	**30**	4.4	-	0.44	**3.7**	6.0	J	0.60
Styrene			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
Tert-butyl alcohol			<7100	7100	<4400	4400	<6500	6500	<95	95	<4000	4000	**120**	120	<84	84	<7700	7,700	U	1500	<94	94	U	19	< 120000	< 12000	U	24000	<88	88	U	18	<120	120	U	24
tert-Butylbenzene	5,900	100,000	< 350	350	**130**	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	**0.53**	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 5900	5,900	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
Tetrachloroethene	1,300	19,000	< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 1300	1,300	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
Tetrahydrofuran (THF)			< 710	710	< 440	440	< 650	650	< 9.5	9.5	< 400	400	< 12	12	< 8.4	8.4	< 770	770	U	190	< 9.4	9.4	U	2.4	< 12000	12,000	U	3000	< 8.8	8.8	U	2.2	**12**	12	J	3.0
Toluene	700	100,000	**1,200**	350	**7,500**	4,400	**790**	330	**1.1**	4.8	**260**	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	**29**	4.7	-	0.47	**1,800**	6,000	J	600	**0.61**	4.4	J	0.44	**2**	6.0	J	0.60
trans-1,2-Dichloroethene	190	100,000	< 190	190	< 190	190	< 190	190	< 4.8	4.8	< 190	190	< 5.9	5.9	< 4.2	4.2	< 190	190	U	38	< 4.7	4.7	U	0.47	< 600	600	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
trans-1,3-Dichloropropene			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
trabs-1,4-dichloro-2-butene			< 710	710	< 440	440	< 650	650	< 9.5	9.5	< 400	400	< 12	12	< 8.4	8.4	< 770	770	U	190	< 9.4	9.4	U	2.4	< 12000	12,000	U	3000	< 8.8	8.8	U	2.2	< 12	12	U	3.0
Trichloroethene	470	21,000	< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 600	600	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
Trichlorofluoromethane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	77	< 4.7	4.7	U	0.94	< 6000	6,000	U	1200	< 4.4	4.4	U	0.88	< 6.0	6.0	U	1.2
Trichlorotrifluoroethane			< 350	350	< 220	220	< 330	330	< 4.8	4.8	< 200	200	< 5.9	5.9	< 4.2	4.2	< 380	380	U	38	< 4.7	4.7	U	0.47	< 6000	6,000	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
Vinyl Chloride	20	900	< 35	35	< 22	22	< 33	33	< 4.8	4.8	< 20	20	< 5.9	5.9	< 4.2	4.2	< 38	38	U	38	< 4.7	4.7	U	0.47	< 600	600	U	600	< 4.4	4.4	U	0.44	< 6.0	6.0	U	0.60
1,4- dioxane	100	13,000	<7100	7100	<4400	4400	<6500	6500	<95	95	<4000	4000	<100	100	<84	84	<3100	3,100	U	3100	<71	71	U	35	<48000	48000	U	48000	<66	66	U	35	<91	91	U	48
Total BTEX Concentration			**140**		**450**		**86**		**0**		**440**		**335**		**8.4**		**0**				**1146.00**				**972200**				**45**				**9**			
Total VOCs Concentration			**13926**		**103230**		**7226**		**836.56**		**28401**		**552.32**		**50.43**		**3,078**				**1495.21**				**3175700**				**374.3**				**139.7**			

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.

S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value
Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 3
Soil Analytical Results
Volatile Organic Compounds

RIR Results - Feburary and March 2018

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	17SB3 (5-7') 2/26/2018 µg/Kg				17SB3 (12.5-15') 2/26/2018 µg/Kg				17SB4 (5-7') 2/26/2018 µg/Kg				17SB4 (12.5-15') 2/26/2018 µg/Kg				17SB5 (2-4') 2/26/2018 µg/Kg				17SB5 (5-7') 2/26/2018 µg/Kg			
			Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
1,1,1,2-Tetrachlorothane			<24	24	U	1.2	<24	24	U	1.2	<37	37	U	1.8	<39	39	U	2.0	<22	22	U	1.1	<35	35	U	1.7
1,1,1-Trichloroethane	680	100,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
1,1,2,2-Tetrachloroethane			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
1,1,2-Trichloroethane			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
1,1-Dichloroethane	270	26,000	< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
1,1-Dichloroethene	330	100,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
1,1-Dichloropropene			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
1,2,3-Trichlorobenzene			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
1,2,3-Trichloropropane			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
1,2,4-Trichlorobenzene			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
1,2,4-Trimethylbenzene	3,600	52,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	**100**	400	J	40	< 8.7	8.7	U	0.87
1,2-Dibromo-3-chloropropane			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
1,2-Dibromomethane			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
1,2-Dichlorobenzene	1,100	100,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
1,2-Dichloroethane	20	3,100	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
1,2-Dichloropropane			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
1,3,5-Trimethylbenzene	8,400	52,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
1,3-Dichlorobenzene	2,400	4,900	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
1,3-Dichloropropane			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
1,4-Dichlorobenzene	1,800	13,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
2,2-Dichloropropane			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
2-Chlorotoluene			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
2-Hexanone (Methyl Butyl Ketone)			< 30	30	U	6.0	< 30	30	U	5.9	< 46	46	U	9.2	< 49	49	U	9.8	< 28	28	U	5.6	< 43	43	U	8.7
2-Isopropyltoluene			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	**2**	8.7	J	0.87
4-Chlorotoluene			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
4-Methyl-2-Pentanone			< 30	30	U	6.0	< 30	30	U	5.9	< 46	46	U	9.2	< 49	49	U	9.8	< 28	28	U	5.6	< 43	43	U	8.7
Acetone	50	100,000	**350**	30	E	6.0	**77**	30	S	5.9	**120**	46	S	9.2	**28**	49	JS	9.8	**56**	28	S	5.6	**210**	43	S	8.7
Acrolein			<6.0	6.0	U	1.2	<5.9	5.9	U	1.2	<9.2	9.2	U	1.8	<9.8	9.8	U	2.0	<5.6	5.6	U	1.1	<8.7	8.7	U	1.7
Acrylonitrile			<24	24	U	0.60	<24	24	U	0.59	<37	37	U	0.92	<39	39	U	0.98	<22	22	U	0.56	<35	35	U	0.87
Benzene	60	4,800	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	**63**	400	J	40	< 8.7	8.7	U	0.87
Bromobenzene			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Bromochloromethane			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Bromodichloromethane			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
Bromoform			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
Bromomethane			< 6.0	6.0	U	2.4	< 5.9	5.9	U	2.4	< 9.2	9.2	U	3.7	< 9.8	9.8	U	3.9	< 5.6	5.6	U	2.2	< 8.7	8.7	U	3.5
Carbon Disulfide			**1.8**	6.0	J	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
Carbon tetrachloride	760	2,400	< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
Chlorobenzene	1,100	100,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Chloroethane			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Chloroform	370	49,000	< 6.0	6.0	U	0.60	**1**	5.9	J	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Chloromethane			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
cis-1,2-Dichloroethene	250	100,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
cis-1,3-Dichloropropene			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Dibromochloromethane			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
Dibromomethane			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
Dichlorodifluoromethane			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Ethylbenzene	1,000	41,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Hexachlorobutadiene			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Isopropylbenzene			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
m&p-Xylenes	260	100,000	< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	**120**	400	J	81	< 8.7	8.7	U	1.7
Methyl Ethyl Ketone (2-Butanone)	120	100,000	**48**	36	-	6.0	< 35	35	U	5.9	**21**	55	J	9.2	< 59	59	U	9.8	< 34	34	U	5.6	< 52	52	U	8.7
Methyl t-butyl ether (MTBE)	930	100,000	**3.4**	12	J	1.2	< 12	12	U	1.2	< 18	18	U	1.8	< 20	20	U	2.0	< 11	11	U	1.1	**3.6**	17	J	1.7
Methylene chloride	50	100,000	< 6.0	6.0	U	6.0	< 5.9	5.9	U	5.9	< 9.2	9.2	U	9.2	< 9.8	9.8	U	9.8	< 5.6	5.6	U	5.6	< 8.7	8.7	U	8.7
Naphthalene	12,000	100,000	< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	**93**	400	J	81	< 8.7	8.7	U	1.7
n-Butylbenzene	12,000	100,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
n-Propylbenzene	3,900	100,000	< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
o-Xylene	260	100,000	< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
p-Isopropyltoluene			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
sec-Butylbenzene	11,000	100,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Styrene			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Tert-butyl alcohol			**69**	120	J	24	<120	120	U	24	<180	180	U	37	**<200**	200	U	39	<110	110	U	22	<170	170	U	35
tert-Butylbenzene	5,900	100,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Tetrachloroethene	1,300	19,000	< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
Tetrahydrofuran (THF)			< 12	12	U	3.0	< 12	12	U	3.0	**10**	18	J	4.6	**8**	20	J	4.9	**5.9**	11	J	2.8	**7.4**	17	J	4.3
Toluene	700	100,000	< 6.0	6.0	U	0.60	**0.62**	5.9	J	0.59	**1**	9.2	J	0.92	< 9.8	9.8	U	0.98	**47**	400	J	40	**0.92**	8.7	J	0.87
trans-1,2-Dichloroethene	190	100,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
trans-1,3-Dichloropropene			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
trabs-1,4-dichloro-2-butene			< 12	12	U	3.0	< 12	12	U	3.0	< 18	18	U	4.6	< 20	20	U	4.9	< 11	11	U	2.8	< 17	17	U	4.3
Trichloroethene	470	21,000	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Trichlorofluoromethane			< 6.0	6.0	U	1.2	< 5.9	5.9	U	1.2	< 9.2	9.2	U	1.8	< 9.8	9.8	U	2.0	< 5.6	5.6	U	1.1	< 8.7	8.7	U	1.7
Trichlorotrifluoroethane			< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
Vinyl Chloride	20	900	< 6.0	6.0	U	0.60	< 5.9	5.9	U	0.59	< 9.2	9.2	U	0.92	< 9.8	9.8	U	0.98	< 5.6	5.6	U	0.56	< 8.7	8.7	U	0.87
1,4- dioxane	100	13,000	<90	90	U	48	<89	89	U	47	<100	100	U	73	<100	100	U	79	<84	84	U	45	<100	100	U	69
Total BTEX Concentration			**0.0**				**0.6**				**1.0**				**0**				**230.00**				**0.92**			
Total VOCs Concentration			**403.20**				**78.62**				**152.00**				**36.00**				**484.90**				**223.92**			

Notes:
* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.

S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value
Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 3
Soil Analytical Results
Volatile Organic Compounds

RIR Results - February 2018

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	17SB6 (0-2') 3/1/2018 µg/Kg				17SB6 (4-6') 3/1/2018 µg/Kg				17SB7 (2-4') 2/26/2018 µg/Kg				17SB7 (5-7') 2/26/2018 µg/Kg				17SB7 (12.5-15') 2/26/2018 µg/Kg				17SB8 (5-7') 2/26/2018 µg/Kg			
			Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
1,1,1,2-Tetrachlorothane			<28	28	U	1.4	<5.0	5.0	U	1.0	<18	18	U	0.89	<25	25	U	1.2	<32	32	U	1.6	<760	760	U	39
1,1,1-Trichloroethane	680	100,000	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
1,1,2,2-Tetrachloroethane			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
1,1,2-Trichloroethane			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
1,1-Dichloroethane	270	26,000	< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
1,1-Dichloroethene	330	100,000	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
1,1-Dichloropropene			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
1,2,3-Trichlorobenzene			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
1,2,3-Trichloropropane			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
1,2,4-Trichlorobenzene			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
1,2,4-Trimethylbenzene	3,600	52,000	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
1,2-Dibromo-3-chloropropane			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
1,2-Dibromomethane			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
1,2-Dichlorobenzene	1,100	100,000	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
1,2-Dichloroethane	20	3,100	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 20	20	U	19
1,2-Dichloropropane			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
1,3,5-Trimethylbenzene	8,400	52,000	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
1,3-Dichlorobenzene	2,400	4,900	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
1,3-Dichloropropane			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
1,4-Dichlorobenzene	1,800	13,000	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
2,2-Dichloropropane			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
2-Chlorotoluene			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
2-Hexanone (Methyl Butyl Ketone)			< 35	35	U	7.1	< 25	25	U	5.0	< 22	22	U	4.5	< 31	31	U	6.1	< 40	40	U	8.1	< 950	950	U	190
2-Isopropyltoluene			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	**190**	190	-	19
4-Chlorotoluene			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
4-Methyl-2-Pentanone			< 35	35	U	7.1	< 25	25	U	5.0	< 22	22	U	4.5	< 31	31	U	6.1	< 40	40	U	8.1	< 950	950	U	190
Acetone	50	100,000	**67**	35	S	7.1	**7**	25	JS	5.0	**5.7**	22	JS	4.5	**13**	31	JS	6.1	< 40	40	U	8.1	< 190	190	U	190
Acrolein			<7.1	7.1	U	1.4	<5.0	5.0	U	1.0	<4.5	5	U	0.89	<6.1	6.1	U	1.2	<8.1	8.1	U	1.6	<190	190	U	38
Acrylonitrile			<28	28	U	0.71	<10	10	U	1.0	<18	18	U	0.45	<25	25	U	0.61	<32	32	U	0.81	<760	760	U	19
Benzene	60	4,800	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 60	60	U	19
Bromobenzene			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
Bromochloromethane			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
Bromodichloromethane			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
Bromoform			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
Bromomethane			< 7.1	7.1	U	2.8	< 5.0	5.0	U	2.0	< 4.5	4.5	U	1.8	< 6.1	6.1	U	2.5	< 8.1	8.1	U	3.2	< 190	190	U	76
Carbon Disulfide			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
Carbon tetrachloride	760	2,400	< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
Chlorobenzene	1,100	100,000	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
Chloroethane			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
Chloroform	370	49,000	< 7.1	7.1	U	0.71	**2.1**	5.0	J	0.50	**3.7**	4.5	J	0.45	**1**	6.1	J	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
Chloromethane			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
cis-1,2-Dichloroethene	250	100,000	**1.4**	7.1	J	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
cis-1,3-Dichloropropene			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
Dibromochloromethane			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
Dibromomethane			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
Dichlorodifluoromethane			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
Ethylbenzene	1,000	41,000	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
Hexachlorobutadiene			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
Isopropylbenzene			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	**88**	190	J	19
m&p-Xylenes	260	100,000	< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
Methyl Ethyl Ketone (2-Butanone)	120	100,000	**8.2**	43	J	7.1	< 30	30	U	5.0	< 27	27	U	4.5	< 37	37	U	6.1	< 48	48	U	8.1	< 190	190	U	190
Methyl t-butyl ether (MTBE)	930	100,000	< 14	14	U	1.4	< 10	10	U	1.0	< 8.9	8.9	U	0.89	< 12	12	U	1.2	< 16	16	U	1.6	< 380	380	U	38
Methylene chloride	50	100,000	< 7.1	7.1	U	7.1	< 5.0	5.0	U	5.0	< 4.5	4.5	U	4.5	< 6.1	6.1	U	6.1	< 8.1	8.1	U	8.1	< 190	190	U	190
Naphthalene	12,000	100,000	< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	**160**	190	J	38
n-Butylbenzene	12,000	100,000	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	**230**	190	-	19
n-Propylbenzene	3,900	100,000	< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	**150**	190	J	38
o-Xylene	260	100,000	< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
p-Isopropyltoluene			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
sec-Butylbenzene	11,000	100,000	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	**370**	190	-	19
Styrene			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
Tert-butyl alcohol			<140	140	U	28	<100	100	U	20	<89	89	U	18	<120	120	U	25	<160	160	U	32	<3800	3,800	U	760
tert-Butylbenzene	5,900	100,000	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	**87**	190	J	19
Tetrachloroethene	1,300	19,000	**15**	7.1	-	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
Tetrahydrofuran (THF)			**9.7**	14	J	3.5	**6**	10	J	2.5	**2.5**	8.9	J	2.2	**6.2**	12	J	3.1	**4.7**	16	J	4.0	< 380	380	U	95
Toluene	700	100,000	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
trans-1,2-Dichloroethene	190	100,000	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
trans-1,3-Dichloropropene			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
trabs-1,4-dichloro-2-butene			< 14	14	U	3.5	< 10	10	U	2.5	< 8.9	8.9	U	2.2	< 12	12	U	3.1	< 16	16	U	4.0	< 380	380	U	95
Trichloroethene	470	21,000	**48**	350	J	35	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
Trichlorofluoromethane			< 7.1	7.1	U	1.4	< 5.0	5.0	U	1.0	< 4.5	4.5	U	0.89	< 6.1	6.1	U	1.2	< 8.1	8.1	U	1.6	< 190	190	U	38
Trichlorotrifluoroethane			< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 190	190	U	19
Vinyl Chloride	20	900	< 7.1	7.1	U	0.71	< 5.0	5.0	U	0.50	< 4.5	4.5	U	0.45	< 6.1	6.1	U	0.61	< 8.1	8.1	U	0.81	< 20	20	U	19
1,4- dioxane	100	13,000	<100	100	U	57	<75	75	U	40	<67	67	U	36	<92	92	U	49	<100	100	U	65	<100	100	U	1500
Total BTEX Concentration			**0**				**0**				**0**				**0.0**				**0.0**				**0**			
Total VOCs Concentration			**149**				**15.1**				**12**				**20.2**				**4.70**				**1,275**			

Notes:
* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.

S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value
Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 3
Soil Analytical Results
Volatile Organic Compounds

RIR Results - February 2018

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	17SB9 (2-4') 2/26/2018 µg/Kg				17SB9 (5-7') 2/26/2018 µg/Kg				17SB10 (2-4') 2/26/2018 µg/Kg				17SB10 (5-7') 2/26/2018 µg/Kg				Duplicate 1 17SB1 (12.5-15') 2/26/2018 µg/Kg				Duplicate 2 (17SB4) (12.5-15') 2/26/2018 µg/Kg			
			Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
1,1,1,2-Tetrachlorothane			<1300	1,300	U	37	<24	24	U	1.2	<20	20	U	1.0	<63	63	U	3.1	<5.2	5.2	U	1.0	<27	27	U	1.3
1,1,1-Trichloroethane	680	100,000	< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
1,1,2,2-Tetrachloroethane			< 330	330	U	67	< 6.0	6.0	U	1.2	< 350	350	U	70	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
1,1,2-Trichloroethane			< 330	330	U	67	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
1,1-Dichloroethane	270	26,000	< 270	270	U	67	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
1,1-Dichloroethene	330	100,000	< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
1,1-Dichloropropene			< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
1,2,3-Trichlorobenzene			< 330	330	U	67	< 6.0	6.0	U	1.2	< 350	350	U	70	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
1,2,3-Trichloropropane			< 330	330	U	33	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
1,2,4-Trichlorobenzene			< 330	330	U	67	< 6.0	6.0	U	1.2	< 350	350	U	70	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
1,2,4-Trimethylbenzene	3,600	52,000	**53,000**	3,300	D	330	< 6.0	6.0	U	0.60	< 350	350	U	35	**3.1**	16	J	1.6	**87**	5.2	-	0.52	< 6.6	6.6	U	0.66
1,2-Dibromo-3-chloropropane			< 330	330	U	67	< 6.0	6.0	U	1.2	< 350	350	U	70	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
1,2-Dibromomethane			< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
1,2-Dichlorobenzene	1,100	100,000	< 330	330	U	33	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
1,2-Dichloroethane	20	3,100	< 33	33	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
1,2-Dichloropropane			< 330	330	U	67	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
1,3,5-Trimethylbenzene	8,400	52,000	**18,000**	3,300	D	330	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	**38**	5.2		0.52	< 6.6	6.6	U	0.66
1,3-Dichlorobenzene	2,400	4,900	< 330	330	U	33	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
1,3-Dichloropropane			< 330	330	U	67	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
1,4-Dichlorobenzene	1,800	13,000	< 330	330	U	33	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
2,2-Dichloropropane			< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
2-Chlorotoluene			< 330	330	U	67	< 6.0	6.0	U	1.2	< 350	350	U	70	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
2-Hexanone (Methyl Butyl Ketone)			< 1700	1,700	U	330	< 30	30	U	6.0	< 26	26	U	5.1	< 78	78	U	16	< 26	26	U	5.2	< 33	33	U	6.6
2-Isopropyltoluene			**210**	330	J	33	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	**0.53**	5.2	J	0.52	< 6.6	6.6	U	0.66
4-Chlorotoluene			< 330	330	U	33	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
4-Methyl-2-Pentanone			< 1700	1,700	U	330	< 30	30	U	6.0	< 26	26	U	5.1	< 78	78	U	16	< 26	26	U	5.2	< 33	33	U	6.6
Acetone	50	100,000	< 330	330	U	330	**110**	30	S	6.0	**34**	26	S	5.1	**990**	78	E	16	**14**	26	JS	5.2	**15**	33	JS	6.6
Acrolein			<330	330	U	67	<6.0	6.0	U	1.2	<5.1	5.1	U	1.0	<16	16	U	3.1	<5.2	5.2	U	1.0	<6.6	6.6	U	1.3
Acrylonitrile			<1300	1,300	U	33	<24	24	U	0.60	<20	20	U	0.51	<63	63	U	1.6	<21	21	U	0.52	<27	27	U	0.66
Benzene	60	4,800	**190**	330	J	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	**27**	5.2	-	0.52	< 6.6	6.6	U	0.66
Bromobenzene			< 330	330	U	33	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
Bromochloromethane			< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
Bromodichloromethane			< 330	330	U	67	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
Bromoform			< 330	330	U	67	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
Bromomethane			< 330	330	U	130	< 6.0	6.0	U	2.4	< 5.1	5.1	U	2.0	< 16	16	U	6.3	< 5.2	5.2	U	2.1	< 6.6	6.6	U	2.7
Carbon Disulfide			< 330	330	U	67	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	**13**	16	J	3.1	**1.1**	5.2	J	1.0	< 6.6	6.6	U	1.3
Carbon tetrachloride	760	2,400	< 330	330	U	67	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
Chlorobenzene	1,100	100,000	< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
Chloroethane			< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
Chloroform	370	49,000	< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
Chloromethane			< 330	330	U	67	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
cis-1,2-Dichloroethene	250	100,000	< 250	250	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
cis-1,3-Dichloropropene			< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
Dibromochloromethane			< 330	330	U	67	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
Dibromomethane			< 330	330	U	67	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
Dichlorodifluoromethane			< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
Ethylbenzene	1,000	41,000	**14,000**	3,300	D	330	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	**280**	270	-	33	< 6.6	6.6	U	0.66
Hexachlorobutadiene			< 330	330	U	33	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
Isopropylbenzene			**3,200**	2,700	D	330	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	**30**	5.2	-	0.52	< 6.6	6.6	U	0.66
m&p-Xylenes	260	100,000	**62,000**	3,300	D	670	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	**390**	5.2	-	1.0	< 6.6	6.6	U	1.3
Methyl Ethyl Ketone (2-Butanone)	120	100,000	< 330	330	U	330	**28**	36	J	6.0	**5.4**	31	J	5.1	**340**	94	-	16	< 31	31	U	5.2	< 40	40	U	6.6
Methyl t-butyl ether (MTBE)	930	100,000	< 670	670	U	67	< 12	12	U	1.2	< 10	10	U	1.0	< 31	31	U	3.1	< 10	10	U	1.0	< 13	13	U	1.3
Methylene chloride	50	100,000	< 330	330	U	330	< 6.0	6.0	U	6.0	< 5.1	5.1	U	5.1	< 16	16	U	16	< 5.2	5.2	U	5.2	< 6.6	6.6	U	6.6
Naphthalene	12,000	100,000	**3,700**	330	-	67	< 6.0	6.0	U	1.2	< 350	350	U	70	**41**	16	-	3.1	**11**	5.2	-	1.0	< 6.6	6.6	U	1.3
n-Butylbenzene	12,000	100,000	**1,900**	1,300	D	330	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	**2.3**	5.2	J	0.52	< 6.6	6.6	U	0.66
n-Propylbenzene	3,900	100,000	**8,200**	3,300	D	670	< 6.0	6.0	U	1.2	< 350	350	U	70	< 16	16	U	3.1	**63**	5.2	-	1.0	< 6.6	6.6	U	1.3
o-Xylene	260	100,000	**23,000**	3,300	D	670	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	**9.8**	5.2	-	1.0	< 6.6	6.6	U	1.3
p-Isopropyltoluene			**570**	330	-	33	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
sec-Butylbenzene	11,000	100,000	**840**	330	-	33	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	**2.8**	5.2	J	0.52	< 6.6	6.6	U	0.66
Styrene			< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	**0.72**	5.2	J	0.52	< 6.6	6.6	U	0.66
Tert-butyl alcohol			<6700	6,700	U	1300	<120	120	U	24	<100	100	U	20	<310	310	U	63	<100	100	U	21	<130	130	U	27
tert-Butylbenzene	5,900	100,000	**39**	330	J	33	< 6.0	6.0	U	0.60	< 350	350	U	35	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
Tetrachloroethene	1,300	19,000	< 330	330	U	67	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
Tetrahydrofuran (THF)			< 670	670	U	170	**4.5**	12	J	3.0	**3.2**	10	J	2.6	**8.6**	31	J	7.8	**5.2**	10	J	2.6	**5.9**	13	J	3.3
Toluene	700	100,000	**13,000**	3,300	D	330	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	**22**	5.2	-	0.52	< 6.6	6.6	U	0.66
trans-1,2-Dichloroethene	190	100,000	< 190	190	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
trans-1,3-Dichloropropene			< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
trabs-1,4-dichloro-2-butene			< 670	670	U	170	< 12	12	U	3.0	< 700	700	U	180	< 31	31	U	7.8	< 10	10	U	2.6	< 13	13	U	3.3
Trichloroethene	470	21,000	< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
Trichlorofluoromethane			< 330	330	U	67	< 6.0	6.0	U	1.2	< 5.1	5.1	U	1.0	< 16	16	U	3.1	< 5.2	5.2	U	1.0	< 6.6	6.6	U	1.3
Trichlorotrifluoroethane			< 330	330	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
Vinyl Chloride	20	900	< 33	33	U	33	< 6.0	6.0	U	0.60	< 5.1	5.1	U	0.51	< 16	16	U	1.6	< 5.2	5.2	U	0.52	< 6.6	6.6	U	0.66
1,4- dioxane	100	13,000	<2700	2,700	U	2700	<90	90	U	48	<77	77	U	41	<100	100	U	100	<79	79	U	42	<99	99	U	53
Total BTEX Concentration			**112,190**				**0**				**0**				**0**				**729**				**0.00**			
Total VOCs Concentration			**201,849**				**142.5**				**43**				**1395.7**				**984**				**20.90**			

Notes:
* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.

S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value
Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 4
Soil 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*	Phase II Results - May 2016														RIR Results - February 2018															
			B1		B2		B3		B4		B5				B10		17SB1								17SB2							
			(4-5') 5/26/2016		(1-3') 5/26/2016		(3-5') 5/26/2016		(3-5') 5/26/2016		(0-2') 5/26/2016		(5-7') 5/26/2016		(6-8') 5/26/2016		(5-7') 2/26/2018				(12.5-15') 2/26/2018				(2-4') 2/26/2018				(5-7') 2/26/2018			
			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	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
1,2,4,5-Tetrachlorobenzene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	120	< 250	250	U	130	< 260	260	U	130	< 270	270	U	130
1,2,4-Trichlorobenzene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	100	< 250	250	U	110	< 260	260	U	110	< 270	270	U	120
1,2-Dichlorobenzene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	97	< 250	250	U	100	< 260	260	U	110	< 270	270	U	110
1,2-Diphenylhydrazine			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	110	< 250	250	U	120	< 260	260	U	120	< 270	270	U	120
1,3-Dichlorobenzene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	100	< 250	250	U	110	< 260	260	U	110	< 270	270	U	110
1,4-Dichlorobenzene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	100	< 250	250	U	110	< 260	260	U	110	< 270	270	U	110
2,4,5-Trichlorophenol			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	190	< 250	250	U	200	< 260	260	U	210	< 270	270	U	210
2,4,6-Trichlorophenol			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 170	170	U	110	< 180	180	U	110	< 190	190	U	120	< 190	190	U	120
2,4-Dichlorophenol			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 170	170	U	120	< 180	180	U	130	< 190	190	U	130	< 190	190	U	130
2,4-Dimethylphenol			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	85	< 250	250	U	89	< 260	260	U	93	< 270	270	U	95
2,4-Dinitrophenol			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	240	< 250	250	U	250	< 260	260	U	260	< 270	270	U	270
2,4-Dinitrotoluene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 170	170	U	140	< 180	180	U	140	< 190	190	U	150	< 190	190	U	150
2,6-Dinitrotoluene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 170	170	U	110	< 180	180	U	110	< 190	190	U	120	< 190	190	U	120
2-Chloronaphthalene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	98	< 250	250	U	100	< 260	260	U	110	< 270	270	U	110
2-Chlorophenol			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	98	< 250	250	U	100	< 260	260	U	110	< 270	270	U	110
2-Methylnaphthalene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	100	< 250	250	U	110	**63,000**	5,300	D	2200	< 270	270	U	110
2-Methylphenol (o-cresol)	330	100,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	160	< 250	250	U	170	< 260	260	U	180	< 270	270	U	180
2-Nitroaniline			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	240	< 250	250	U	250	< 260	260	U	260	< 270	270	U	270
2-Nitrophenol			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	220	< 250	250	U	230	< 260	260	U	240	< 270	270	U	240
3&4-Methylphenol (m&p-cresol)	330	100,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	140	< 250	250	U	140	< 260	260	U	150	< 270	270	U	150
3,3'-Dichlorobenzidine			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 170	170	U	160	< 180	180	U	170	< 190	190	U	180	< 190	190	U	180
3-Nitroaniline			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 340	340	U	690	< 360	360	U	720	< 380	380	U	750	< 380	380	U	760
4,6-Dinitro-2-methylphenol			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 210	210	U	69	< 220	220	U	72	< 230	230	U	75	< 230	230	U	76
4-Bromophenyl phenyl ether			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	100	< 250	250	U	110	< 260	260	U	110	< 270	270	U	110
4-Chloro-3-methylphenol			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	120	< 250	250	U	130	< 260	260	U	130	< 270	270	U	130
4-Chloroaniline			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 270	270	U	160	< 290	290	U	170	< 300	300	U	170	< 310	310	U	180
4-Chlorophenyl phenyl ether			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	120	< 250	250	U	120	< 260	260	U	130	< 270	270	U	130
4-Nitroaniline			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 340	340	U	110	< 360	360	U	120	< 380	380	U	130	< 380	380	U	130
4-Nitrophenol			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 340	340	U	160	< 360	360	U	160	< 380	380	U	170	< 380	380	U	170
Acenaphthene	20,000	100,000	**2,500**	2,700	< 2500	2,500	< 260	260	< 270	270	**15,000**	2,400	**600**	270	< 280	280	< 240	240	U	100	< 250	250	U	110	**690**	260	-	110	< 270	270	U	120
Acenaphthylene	100,000	100,000	< 2700	2,700	< 2500	2,500	< 260	260	< 270	270	< 2400	2,400	**190**	270	< 280	280	< 240	240	U	96	< 250	250	U	100	**420**	260	-	110	< 270	270	U	110
Acetophenone			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	110	< 250	250	U	110	< 260	260	U	120	< 270	270	U	120
Aniline			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 270	270	U	270	< 290	290	U	290	< 300	300	U	300	< 310	310	U	310
Anthracene	100,000	100,000	**5,900**	2,700	< 2500	2,500	**150**	260	< 270	270	**19,000**	2,400	**2,000**	270	< 280	280	< 240	240	U	110	< 250	250	U	120	**630**	260	-	120	< 270	270	U	130
Benz(a)anthracene	1,000	1,000	**8,800**	2,700	< 1000	1,000	**270**	260	**240**	270	**38,000**	2,400	**3,600**	270	< 280	280	< 240	240	U	120	< 250	250	U	120	**640**	260	-	130	< 270	270	U	130
Benzidine			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 340	340	U	200	< 360	360	U	210	< 380	380	U	220	< 380	380	U	220
Benzo(a)pyrene	1,000	1,000	**6,100**	2,700	< 1000	1,000	**210**	260	**230**	270	**37,000**	2,400	**2,900**	270	< 280	280	< 170	170	U	110	< 180	180	U	120	**510**	190	-	120	< 190	190	U	120
Benzo(b)fluoranthene	1,000	1,000	**5,300**	2,700	< 1000	1,000	**310**	260	**250**	270	**36,000**	2,400	**2,700**	270	< 280	280	< 240	240	U	120	< 250	250	U	120	**610**	260	-	130	< 270	270	U	130
Benzo(ghi)perylene	100,000	100,000	**2,800**	2,700	< 2500	2,500	**190**	260	**230**	270	**21,000**	2,400	**1,200**	270	< 280	280	< 240	240	U	110	< 250	250	U	120	**410**	260	-	120	< 270	270	U	120
Benzo(k)fluoranthene	800	3,900	**6,200**	2,700	< 1000	1,000	**220**	260	**190**	270	**34,000**	2,400	**2,500**	270	< 280	280	< 240	240	U	110	< 250	250	U	120	**440**	260	-	120	< 270	270	U	130
Benzoic acid			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 1700	1,700	U	690	< 1800	1,800	U	720	< 1900	1,900	U	750	< 1900	1,900	U	760
Benzyl butyl phthalate			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	89	< 250	250	U	92	< 260	260	U	97	< 270	270	U	98
Bis(2-chloroethoxy)methane			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	95	< 250	250	U	99	< 260	260	U	100	< 270	270	U	110
Bis(2-chloroethyl)ether			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 170	170	U	93	< 180	180	U	97	< 190	190	U	100	< 190	190	U	100
Bis(2-chloroisopropyl)ether			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	95	< 250	250	U	100	< 260	260	U	100	< 270	270	U	110
Bis(2-ethylhexyl)phthalate			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	99	< 250	250	U	100	**4,000**	260	-	110	< 270	270	U	110
Carbazole			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 170	170	U	140	< 180	180	U	140	< 190	190	U	150	< 190	190	U	150
Chrysene	1,000	3,900	**8,300**	2,700	**1,000**	1,000	**370**	260	**280**	270	**40,000**	2,400	**3,500**	270	< 280	280	< 240	240	U	120	< 250	250	U	120	**690**	260	-	130	< 270	270	U	130
Dibenz(a,h)anthracene	330	330	< 2700	2,700	< 1000	1,000	< 260	260	< 270	270	**5,400**	2,400	**260**	270	< 280	280	< 170	170	U	110	< 180	180	U	120	< 190	190	U	120	< 190	190	U	120
Dibenzofuran	7,000	59,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	100	< 250	250	U	100	< 260	260	U	110	< 270	270	U	110
Diethyl phthalate			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	110	< 250	250	U	110	< 260	260	U	120	< 270	270	U	120
Dimethylphthalate			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	110	< 250	250	U	110	< 260	260	U	120	< 270	270	U	120
Di-n-butylphthalate			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	91	< 250	250	U	95	< 260	260	U	100	< 270	270	U	100
Di-n-octylphthalate			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	89	< 250	250	U	92	< 260	260	U	97	< 270	270	U	98
Fluoranthene	100,000	100,000	**21,000**	2,700	**1,800**	2,500	**810**	260	**540**	270	**85,000**	12,000	**7,900**	270	< 280	280	< 240	240	U	110	< 250	250	U	120	**1,500**	260	-	120	< 270	270	U	120
Fluorene	30,000	100,000	**4,100**	2,700	**1,700**	2,500	**150**	260	< 270	270	**12,000**	2,400	**1,100**	270	< 280	280	< 240	240	U	110	< 250	250	U	120	**1,600**	260	-	120	< 270	270	U	130
Hexachlorobenzene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 170	170	U	100	< 180	180	U	100	< 190	190	U	110	< 190	190	U	110
Hexachlorobutadiene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	120	< 250	250	U	130	< 260	260	U	140	< 270	270	U	140
Hexachlorocyclopentadiene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	110	< 250	250	U	110	< 260	260	U	110	< 270	270	U	120
Hexachloroethane			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 170	170	U	100	< 180	180	U	110	< 190	190	U	110	< 190	190	U	110
Indeno(1,2,3-cd)pyrene	500	500	**3,300**	2,700	< 1000	1,000	**190**	260	**240**	270	**24,000**	2,400	**1,600**	270	**140**	280	< 240	240	U	110	< 250	250	U	120	**440**	260	-	120	< 270	270	U	130
Isophorone			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 170	170	U	96	< 180	180	U	100	< 190	190	U	110	< 190	190	U	110
Naphthalene	12,000	100,000	**1,500**	2,700	**22,000**	2,500	**360**	260	< 270	270	**5,900**	2,400	**290**	270	< 280	280	< 240	240	U	99	< 250	250	U	100	**63,000**	5,300	D	2200	< 270	270	U	110
Nitrobenzene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 170	170	U	120	< 180	180	U	130	< 190	190	U	130	< 190	190	U	130
N-Nitrosodimethylamine			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	97	< 250	250	U	100	< 260	260	U	110	< 270	270	U	110
N-Nitrosodi-n-propylamine			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 170	170	U	110	< 180	180	U	120	< 190	190	U	120	< 190	190	U	120
N-Nitrosodiphenylamine			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	130	< 250	250	U	140	< 260	260	U	140	< 270	270	U	150
Pentachloronitrobenzene			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	130	< 250	250	U	130	< 260	260	U	140	< 270	270	U	140
Pentachlorophenol	800	6,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 210	210	U	130	< 220	220	U	140	< 230	230	U	140	< 230	230	U	140
Phenanthrene	100,000	100,000	**22,000**	2,700	**3,700**	2,500	**640**	260	**250**	270	**88,000**	12,000	**6,400**	270	< 280	280	< 240	240	U	98	< 250	250	U	100	**3,100**	260	-	110	< 270	270	U	110
Phenol	330	100,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	110	< 250	250	U	110	< 260	260	U	120	< 270	270	U	120
Pyrene	100,000	100,000	**17,000**	2,700	**2,500**	2,500	**880**	260	**480**	270	**70,000**	12,000	**6,400**	270	< 280	280	< 240	240	U	120	< 250	250	U	120	**1,600**	260	-	130	< 270	270	U	130
Pyridine			-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 240	240	U	84	< 250	250	U	88	< 260	260	U	92	< 270	270	U	94

Notes:
* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.

S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value
Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 4
Soil Analytical Results
Semi-Volatile Organic Compounds

RIR Results - February and March 2018

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	17SB3 (5-7') 2/26/2018 µg/Kg				17SB3 (12.5-15') 2/26/2018 µg/Kg				17SB4 (5-7') 2/26/2018 µg/Kg				17SB4 (12.5-15') 2/26/2018 µg/Kg				17SB5 (2-4') 2/26/2018 µg/Kg				17SB5 (5-7') 2/26/2018 µg/Kg			
			Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
1,2,4,5-Tetrachlorobenzene			< 300	300	U	150	< 260	260	U	130	< 290	290	U	150	< 270	270	U	140	< 280	280	U	140	< 290	290	U	150
1,2,4-Trichlorobenzene			< 300	300	U	130	< 260	260	U	110	< 290	290	U	130	< 270	270	U	120	< 280	280	U	120	< 290	290	U	130
1,2-Dichlorobenzene			< 300	300	U	120	< 260	260	U	100	< 290	290	U	120	< 270	270	U	110	< 280	280	U	110	< 290	290	U	120
1,2-Diphenylhydrazine			< 300	300	U	140	< 260	260	U	120	< 290	290	U	140	< 270	270	U	130	< 280	280	U	130	< 290	290	U	140
1,3-Dichlorobenzene			< 300	300	U	130	< 260	260	U	110	< 290	290	U	120	< 270	270	U	110	< 280	280	U	120	< 290	290	U	120
1,4-Dichlorobenzene			< 300	300	U	130	< 260	260	U	110	< 290	290	U	120	< 270	270	U	110	< 280	280	U	120	< 290	290	U	120
2,4,5-Trichlorophenol			< 300	300	U	240	< 260	260	U	200	< 290	290	U	230	< 270	270	U	210	< 280	280	U	220	< 290	290	U	230
2,4,6-Trichlorophenol			< 220	220	U	140	< 180	180	U	120	< 210	210	U	130	< 190	190	U	120	< 200	200	U	130	< 210	210	U	130
2,4-Dichlorophenol			< 220	220	U	150	< 180	180	U	130	< 210	210	U	150	< 190	190	U	140	< 200	200	U	140	< 210	210	U	150
2,4-Dimethylphenol			< 300	300	U	110	< 260	260	U	92	< 290	290	U	100	< 270	270	U	96	< 280	280	U	99	< 290	290	U	100
2,4-Dinitrophenol			< 300	300	U	300	< 260	260	U	260	< 290	290	U	290	< 270	270	U	270	< 280	280	U	280	< 290	290	U	290
2,4-Dinitrotoluene			< 220	220	U	170	< 180	180	U	150	< 210	210	U	160	< 190	190	U	150	< 200	200	U	160	< 210	210	U	160
2,6-Dinitrotoluene			< 220	220	U	140	< 180	180	U	120	< 210	210	U	130	< 190	190	U	120	< 200	200	U	130	< 210	210	U	130
2-Chloronaphthalene			< 300	300	U	120	< 260	260	U	100	< 290	290	U	120	< 270	270	U	110	< 280	280	U	110	< 290	290	U	120
2-Chlorophenol			< 300	300	U	120	< 260	260	U	100	< 290	290	U	120	< 270	270	U	110	< 280	280	U	110	< 290	290	U	120
2-Methylnaphthalene			< 300	300	U	130	< 260	260	U	110	< 290	290	U	120	< 270	270	U	120	**130**	280	J	120	< 290	290	U	120
2-Methylphenol (o-cresol)	330	100,000	< 300	300	U	200	< 260	260	U	170	< 290	290	U	200	< 270	270	U	180	< 280	280	U	190	< 290	290	U	200
2-Nitroaniline			< 300	300	U	300	< 260	260	U	260	< 290	290	U	290	< 270	270	U	270	< 280	280	U	280	< 290	290	U	290
2-Nitrophenol			< 300	300	U	270	< 260	260	U	230	< 290	290	U	270	< 270	270	U	250	< 280	280	U	250	< 290	290	U	260
3&4-Methylphenol (m&p-cresol)	330	100,000	< 300	300	U	170	< 260	260	U	150	< 290	290	U	160	< 270	270	U	150	< 280	280	U	160	< 290	290	U	160
3,3'-Dichlorobenzidine			< 220	220	U	200	< 180	180	U	170	< 210	210	U	200	< 190	190	U	180	< 200	200	U	190	< 210	210	U	200
3-Nitroaniline			< 430	430	U	870	< 370	370	U	740	< 420	420	U	840	< 390	390	U	770	< 400	400	U	800	< 420	420	U	830
4,6-Dinitro-2-methylphenol			< 260	260	U	87	< 220	220	U	74	< 250	250	U	84	< 230	230	U	77	< 240	240	U	80	< 250	250	U	83
4-Bromophenyl phenyl ether			< 300	300	U	130	< 260	260	U	110	< 290	290	U	120	< 270	270	U	110	< 280	280	U	120	< 290	290	U	120
4-Chloro-3-methylphenol			< 300	300	U	150	< 260	260	U	130	< 290	290	U	150	< 270	270	U	140	< 280	280	U	140	< 290	290	U	150
4-Chloroaniline			< 350	350	U	200	< 300	300	U	170	< 330	330	U	200	< 310	310	U	180	< 320	320	U	190	< 330	330	U	190
4-Chlorophenyl phenyl ether			< 300	300	U	150	< 260	260	U	120	< 290	290	U	140	< 270	270	U	130	< 280	280	U	130	< 290	290	U	140
4-Nitroaniline			< 430	430	U	140	< 370	370	U	120	< 420	420	U	140	< 390	390	U	130	< 400	400	U	130	< 420	420	U	140
4-Nitrophenol			< 430	430	U	200	< 370	370	U	170	< 420	420	U	190	< 390	390	U	170	< 400	400	U	180	< 420	420	U	190
Acenaphthene	20,000	100,000	< 300	300	U	130	< 260	260	U	110	< 290	290	U	130	< 270	270	U	120	**150**	280	J	120	< 290	290	U	130
Acenaphthylene	100,000	100,000	< 300	300	U	120	< 260	260	U	100	< 290	290	U	120	< 270	270	U	110	**120**	280	J	110	< 290	290	U	120
Acetophenone			< 300	300	U	140	< 260	260	U	120	< 290	290	U	130	< 270	270	U	120	< 280	280	U	120	< 290	290	U	130
Aniline			< 350	350	U	350	< 300	300	U	300	< 330	330	U	330	< 310	310	U	310	< 320	320	U	320	< 330	330	U	330
Anthracene	100,000	100,000	< 300	300	U	140	< 260	260	U	120	< 290	290	U	140	< 270	270	U	130	**290**	280	-	130	< 290	290	U	140
Benz(a)anthracene	1,000	1,000	**210**	300	J	150	< 260	260	U	120	< 290	290	U	140	< 270	270	U	130	**750**	280	-	130	< 290	290	U	140
Benzidine			< 430	430	U	250	< 370	370	U	220	< 420	420	U	250	< 390	390	U	230	< 400	400	U	230	< 420	420	U	240
Benzo(a)pyrene	1,000	1,000	**200**	220	J	140	< 180	180	U	120	< 210	210	U	140	< 190	190	U	130	**710**	200	-	130	< 210	210	U	140
Benzo(b)fluoranthene	1,000	1,000	**220**	300	J	150	< 260	260	U	130	< 290	290	U	140	< 270	270	U	130	**770**	280	-	140	< 290	290	U	140
Benzo(ghi)perylene	100,000	100,000	**210**	300	J	140	< 260	260	U	120	< 290	290	U	140	< 270	270	U	130	**560**	280	-	130	< 290	290	U	130
Benzo(k)fluoranthene	800	3,900	**180**	300	J	140	< 260	260	U	120	< 290	290	U	140	< 270	270	U	130	**610**	280	-	130	< 290	290	U	140
Benzoic acid			< 2200	2,200	U	870	< 1800	1,800	U	740	< 2100	2,100	U	840	< 1900	1,900	U	770	< 2000	2,000	U	800	< 2100	2,100	U	830
Benzyl butyl phthalate			< 300	300	U	110	< 260	260	U	95	< 290	290	U	110	< 270	270	U	100	< 280	280	U	100	< 290	290	U	110
Bis(2-chloroethoxy)methane			< 300	300	U	120	< 260	260	U	100	< 290	290	U	120	< 270	270	U	110	< 280	280	U	110	< 290	290	U	110
Bis(2-chloroethyl)ether			< 220	220	U	120	< 180	180	U	100	< 210	210	U	110	< 190	190	U	100	< 200	200	U	110	< 210	210	U	110
Bis(2-chloroisopropyl)ether			< 300	300	U	120	< 260	260	U	100	< 290	290	U	120	< 270	270	U	110	< 280	280	U	110	< 290	290	U	120
Bis(2-ethylhexyl)phthalate			< 300	300	U	120	< 260	260	U	110	< 290	290	U	120	< 270	270	U	110	**770**	280	-	110	< 290	290	U	120
Carbazole			< 220	220	U	170	< 180	180	U	150	< 210	210	U	170	< 190	190	U	150	< 200	200	U	160	< 210	210	U	170
Chrysene	1,000	3,900	**240**	300	J	150	< 260	260	U	120	< 290	290	U	140	< 270	270	U	130	**800**	280	-	130	< 290	290	U	140
Dibenz(a,h)anthracene	330	330	< 220	220	U	140	< 180	180	U	120	< 210	210	U	140	< 190	190	U	130	**170**	200	J	130	< 210	210	U	130
Dibenzofuran	7,000	59,000	< 300	300	U	130	< 260	260	U	110	< 290	290	U	120	< 270	270	U	110	< 280	280	U	120	< 290	290	U	120
Diethyl phthalate			< 300	300	U	140	< 260	260	U	120	< 290	290	U	130	< 270	270	U	120	< 280	280	U	130	< 290	290	U	130
Dimethylphthalate			< 300	300	U	130	< 260	260	U	110	< 290	290	U	130	< 270	270	U	120	< 280	280	U	120	< 290	290	U	130
Di-n-butylphthalate			< 300	300	U	120	< 260	260	U	98	< 290	290	U	110	< 270	270	U	100	< 280	280	U	110	< 290	290	U	110
Di-n-octylphthalate			< 300	300	U	110	< 260	260	U	95	< 290	290	U	110	< 270	270	U	100	< 280	280	U	100	< 290	290	U	110
Fluoranthene	100,000	100,000	**350**	300	-	140	< 260	260	U	120	< 290	290	U	140	< 270	270	U	130	**1,400**	280	-	130	< 290	290	U	130
Fluorene	30,000	100,000	< 300	300	U	140	< 260	260	U	120	< 290	290	U	140	< 270	270	U	130	**150**	280	J	130	< 290	290	U	140
Hexachlorobenzene			< 220	220	U	130	< 180	180	U	110	< 210	210	U	120	< 190	190	U	110	< 200	200	U	120	< 210	210	U	120
Hexachlorobutadiene			< 300	300	U	160	< 260	260	U	130	< 290	290	U	150	< 270	270	U	140	< 280	280	U	140	< 290	290	U	150
Hexachlorocyclopentadiene			< 300	300	U	130	< 260	260	U	110	< 290	290	U	130	< 270	270	U	120	< 280	280	U	120	< 290	290	U	130
Hexachloroethane			< 220	220	U	130	< 180	180	U	110	< 210	210	U	130	< 190	190	U	120	< 200	200	U	120	< 210	210	U	120
Indeno(1,2,3-cd)pyrene	500	500	**220**	300	J	140	< 260	260	U	120	< 290	290	U	140	< 270	270	U	130	**630**	280	-	130	< 290	290	U	140
Isophorone			< 220	220	U	120	< 180	180	U	100	< 210	210	U	120	< 190	190	U	110	< 200	200	U	110	< 210	210	U	120
Naphthalene	12,000	100,000	< 300	300	U	120	< 260	260	U	110	< 290	290	U	120	< 270	270	U	110	**220**	280	J	110	< 290	290	U	120
Nitrobenzene			< 220	220	U	150	< 180	180	U	130	< 210	210	U	150	< 190	190	U	140	< 200	200	U	140	< 210	210	U	150
N-Nitrosodimethylamine			< 300	300	U	120	< 260	260	U	100	< 290	290	U	120	< 270	270	U	110	< 280	280	U	110	< 290	290	U	120
N-Nitrosodi-n-propylamine			< 220	220	U	140	< 180	180	U	120	< 210	210	U	140	< 190	190	U	130	< 200	200	U	130	< 210	210	U	130
N-Nitrosodiphenylamine			< 300	300	U	170	< 260	260	U	140	< 290	290	U	160	< 270	270	U	150	< 280	280	U	150	< 290	290	U	160
Pentachloronitrobenzene			< 300	300	U	160	< 260	260	U	140	< 290	290	U	160	< 270	270	U	140	< 280	280	U	150	< 290	290	U	150
Pentachlorophenol	800	6,700	< 260	260	U	160	< 220	220	U	140	< 250	250	U	160	< 230	230	U	150	< 240	240	U	150	< 250	250	U	160
Phenanthrene	100,000	100,000	**160**	300	J	120	< 260	260	U	110	< 290	290	U	120	< 270	270	U	110	**860**	280	-	110	< 290	290	U	120
Phenol	330	100,000	< 300	300	U	140	< 260	260	U	120	< 290	290	U	130	< 270	270	U	120	< 280	280	U	130	< 290	290	U	130
Pyrene	100,000	100,000	**310**	300	-	150	< 260	260	U	130	< 290	290	U	140	< 270	270	U	130	**1,300**	280	-	140	< 290	290	U	140
Pyridine			< 300	300	U	110	< 260	260	U	91	< 290	290	U	100	< 270	270	U	95	< 280	280	U	98	< 290	290	U	100

Notes:
* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.

S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value
Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 4
Soil Analytical Results
Semi-Volatile Organic Compounds

RIR Results - February 2018

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	17SB6 (0-2') 3/1/2018 µg/Kg				17SB6 (4-6') 3/1/2018 µg/Kg				17SB7 (2-4') 2/26/2018 µg/Kg				17SB7 (5-7') 2/26/2018 µg/Kg				17SB7 (12.5-15') 2/26/2018 µg/Kg				17SB8 (5-7') 2/26/2018 µg/Kg			
			Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
1,2,4,5-Tetrachlorobenzene			< 260	260	U	130	< 260	260	U	130	< 270	270	U	140	< 290	290	U	140	< 300	300	U	150	< 240	240	U	120
1,2,4-Trichlorobenzene			< 260	260	U	110	< 260	260	U	110	< 270	270	U	120	< 290	290	U	120	< 300	300	U	130	< 240	240	U	100
1,2-Dichlorobenzene			< 260	260	U	110	< 260	260	U	100	< 270	270	U	110	< 290	290	U	120	< 300	300	U	120	< 240	240	U	98
1,2-Diphenylhydrazine			< 260	260	U	120	< 260	260	U	120	< 270	270	U	130	< 290	290	U	130	< 300	300	U	140	< 240	240	U	110
1,3-Dichlorobenzene			< 260	260	U	110	< 260	260	U	110	< 270	270	U	120	< 290	290	U	120	< 300	300	U	130	< 240	240	U	100
1,4-Dichlorobenzene			< 260	260	U	110	< 260	260	U	110	< 270	270	U	120	< 290	290	U	120	< 300	300	U	130	< 240	240	U	100
2,4,5-Trichlorophenol			< 260	260	U	210	< 260	260	U	200	< 270	270	U	210	< 290	290	U	220	< 300	300	U	230	< 240	240	U	190
2,4,6-Trichlorophenol			< 190	190	U	120	< 190	190	U	120	< 200	200	U	130	< 200	200	U	130	< 210	210	U	140	< 170	170	U	110
2,4-Dichlorophenol			< 190	190	U	130	< 190	190	U	130	< 200	200	U	140	< 200	200	U	140	< 210	210	U	150	< 170	170	U	120
2,4-Dimethylphenol			< 260	260	U	93	< 260	260	U	92	< 270	270	U	97	< 290	290	U	100	< 300	300	U	110	< 240	240	U	86
2,4-Dinitrophenol			< 260	260	U	260	< 260	260	U	260	< 270	270	U	270	< 290	290	U	290	< 300	300	U	300	< 240	240	U	240
2,4-Dinitrotoluene			< 190	190	U	150	< 190	190	U	150	< 200	200	U	150	< 200	200	U	160	< 210	210	U	170	< 170	170	U	140
2,6-Dinitrotoluene			< 190	190	U	120	< 190	190	U	120	< 200	200	U	120	< 200	200	U	130	< 210	210	U	130	< 170	170	U	110
2-Chloronaphthalene			< 260	260	U	110	< 260	260	U	110	< 270	270	U	110	< 290	290	U	120	< 300	300	U	120	< 240	240	U	98
2-Chlorophenol			< 260	260	U	110	< 260	260	U	110	< 270	270	U	110	< 290	290	U	120	< 300	300	U	120	< 240	240	U	98
2-Methylnaphthalene			< 260	260	U	110	< 260	260	U	110	< 270	270	U	120	< 290	290	U	120	**740**	300	-	130	**2,200**	240	-	100
2-Methylphenol (o-cresol)	330	100,000	< 260	260	U	180	< 260	260	U	170	< 270	270	U	180	< 290	290	U	190	< 300	300	U	200	< 240	240	U	160
2-Nitroaniline			< 260	260	U	260	< 260	260	U	260	< 270	270	U	270	< 290	290	U	290	< 300	300	U	300	< 240	240	U	240
2-Nitrophenol			< 260	260	U	240	< 260	260	U	240	< 270	270	U	250	< 290	290	U	260	< 300	300	U	270	< 240	240	U	220
3&4-Methylphenol (m&p-cresol)	330	100,000	< 260	260	U	150	< 260	260	U	150	< 270	270	U	150	< 290	290	U	160	< 300	300	U	170	< 240	240	U	140
3,3'-Dichlorobenzidine			< 190	190	U	180	< 190	190	U	180	< 200	200	U	180	< 200	200	U	190	< 210	210	U	200	< 170	170	U	160
3-Nitroaniline			< 380	380	U	750	< 370	370	U	740	< 390	390	U	780	< 410	410	U	820	< 420	420	U	850	< 350	350	U	690
4,6-Dinitro-2-methylphenol			< 260	260	U	260	< 260	260	U	260	< 230	230	U	78	< 240	240	U	82	< 250	250	U	85	< 210	210	U	69
4-Bromophenyl phenyl ether			< 260	260	U	110	< 260	260	U	110	< 270	270	U	110	< 290	290	U	120	< 300	300	U	120	< 240	240	U	100
4-Chloro-3-methylphenol			< 260	260	U	130	< 260	260	U	130	< 270	270	U	140	< 290	290	U	140	< 300	300	U	150	< 240	240	U	120
4-Chloroaniline			< 300	300	U	180	< 300	300	U	170	< 310	310	U	180	< 330	330	U	190	< 340	340	U	200	< 280	280	U	160
4-Chlorophenyl phenyl ether			< 260	260	U	130	< 260	260	U	130	< 270	270	U	130	< 290	290	U	140	< 300	300	U	140	< 240	240	U	120
4-Nitroaniline			< 380	380	U	130	< 370	370	U	120	< 390	390	U	130	< 410	410	U	140	< 420	420	U	140	< 350	350	U	120
4-Nitrophenol			< 380	380	U	170	< 370	370	U	170	< 390	390	U	180	< 410	410	U	180	< 420	420	U	190	< 350	350	U	160
Acenaphthene	20,000	100,000	< 260	260	U	110	< 260	260	U	110	< 270	270	U	120	< 290	290	U	120	**880**	300	-	130	**330**	240	-	110
Acenaphthylene	100,000	100,000	< 260	260	U	110	< 260	260	U	100	< 270	270	U	110	< 290	290	U	110	**120**	300	J	120	< 240	240	U	97
Acetophenone			< 260	260	U	120	< 260	260	U	120	< 270	270	U	120	< 290	290	U	130	< 300	300	U	130	< 240	240	U	110
Aniline			< 300	300	U	300	< 300	300	U	300	< 310	310	U	310	< 330	330	U	330	< 340	340	U	340	< 280	280	U	280
Anthracene	100,000	100,000	< 260	260	U	120	< 260	260	U	120	< 270	270	U	130	< 290	290	U	130	**820**	300	-	140	**140**	240	J	110
Benz(a)anthracene	1,000	1,000	**240**	260	J	130	< 260	260	U	130	< 270	270	U	130	< 290	290	U	140	**2,200**	300	-	140	< 240	240	U	120
Benzidine			< 380	380	U	220	< 370	370	U	220	< 390	390	U	230	< 410	410	U	240	< 420	420	U	250	< 350	350	U	200
Benzo(a)pyrene	1,000	1,000	**300**	190	-	120	< 190	190	U	120	< 200	200	U	130	< 200	200	U	130	**1,800**	210	-	140	< 170	170	U	110
Benzo(b)fluoranthene	1,000	1,000	**270**	260	-	130	< 260	260	U	130	< 270	270	U	130	< 290	290	U	140	**1,300**	300	-	140	< 240	240	U	120
Benzo(ghi)perylene	100,000	100,000	**220**	260	J	120	< 260	260	U	120	< 270	270	U	130	< 290	290	U	130	**820**	300	-	140	< 240	240	U	110
Benzo(k)fluoranthene	800	3,900	**280**	260	-	120	< 260	260	U	120	< 270	270	U	130	< 290	290	U	140	**1,200**	300	-	140	< 240	240	U	110
Benzoic acid			< 1900	1,900	U	750	< 1900	1,900	U	740	< 2000	2,000	U	780	< 2000	2,000	U	820	< 2100	2,100	U	850	< 1700	1,700	U	690
Benzyl butyl phthalate			< 260	260	U	97	< 260	260	U	96	< 270	270	U	100	< 290	290	U	110	< 300	300	U	110	< 240	240	U	89
Bis(2-chloroethoxy)methane			< 260	260	U	100	< 260	260	U	100	< 270	270	U	110	< 290	290	U	110	< 300	300	U	120	< 240	240	U	95
Bis(2-chloroethyl)ether			< 190	190	U	100	< 190	190	U	100	< 200	200	U	110	< 200	200	U	110	< 210	210	U	110	< 170	170	U	93
Bis(2-chloroisopropyl)ether			< 260	260	U	100	< 260	260	U	100	< 270	270	U	110	< 290	290	U	110	< 300	300	U	120	< 240	240	U	96
Bis(2-ethylhexyl)phthalate			**110**	260	J	110	< 260	260	U	110	< 270	270	U	110	< 290	290	U	120	< 300	300	U	120	< 240	240	U	100
Carbazole			< 190	190	U	150	< 190	190	U	150	< 200	200	U	160	< 200	200	U	160	**410**	210	-	170	< 170	170	U	140
Chrysene	1,000	3,900	**280**	260	-	130	< 260	260	U	130	< 270	270	U	130	< 290	290	U	140	**2,700**	300	-	140	< 240	240	U	120
Dibenz(a,h)anthracene	330	330	< 190	190	U	120	< 190	190	U	120	< 200	200	U	130	< 200	200	U	130	**250**	210	-	140	< 170	170	U	110
Dibenzofuran	7,000	59,000	< 260	260	U	110	< 260	260	U	110	< 270	270	U	110	< 290	290	U	120	**600**	300	-	120	< 240	240	U	100
Diethyl phthalate			< 260	260	U	120	< 260	260	U	120	< 270	270	U	120	< 290	290	U	130	< 300	300	U	130	< 240	240	U	110
Dimethylphthalate			< 260	260	U	120	< 260	260	U	120	< 270	270	U	120	< 290	290	U	130	< 300	300	U	130	< 240	240	U	110
Di-n-butylphthalate			< 260	260	U	100	< 260	260	U	99	< 270	270	U	100	< 290	290	U	110	< 300	300	U	110	< 240	240	U	92
Di-n-octylphthalate			< 260	260	U	97	< 260	260	U	96	< 270	270	U	100	< 290	290	U	110	< 300	300	U	110	< 240	240	U	89
Fluoranthene	100,000	100,000	**250**	260	J	120	< 260	260	U	120	< 270	270	U	130	< 290	290	U	130	**4,800**	300	-	140	< 240	240	U	110
Fluorene	30,000	100,000	< 260	260	U	120	< 260	260	U	120	< 270	270	U	130	< 290	290	U	130	**920**	300	-	140	**460**	240	-	110
Hexachlorobenzene			< 190	190	U	110	< 190	190	U	110	< 200	200	U	110	< 200	200	U	120	< 210	210	U	120	< 170	170	U	100
Hexachlorobutadiene			< 260	260	U	140	< 260	260	U	130	< 270	270	U	140	< 290	290	U	150	< 300	300	U	150	< 240	240	U	130
Hexachlorocyclopentadiene			< 260	260	U	110	< 260	260	U	110	< 270	270	U	120	< 290	290	U	120	< 300	300	U	130	< 240	240	U	110
Hexachloroethane			< 190	190	U	110	< 190	190	U	110	< 200	200	U	120	< 200	200	U	120	< 210	210	U	130	< 170	170	U	100
Indeno(1,2,3-cd)pyrene	500	500	**220**	260	J	120	< 260	260	U	120	< 270	270	U	130	< 290	290	U	140	**940**	300	-	140	< 240	240	U	110
Isophorone			< 190	190	U	110	< 190	190	U	100	< 200	200	U	110	< 200	200	U	110	< 210	210	U	120	< 170	170	U	97
Naphthalene	12,000	100,000	< 260	260	U	110	< 260	260	U	110	< 270	270	U	110	< 290	290	U	120	**1,400**	300	-	120	< 240	240	U	100
Nitrobenzene			< 190	190	U	130	< 190	190	U	130	< 200	200	U	140	< 200	200	U	140	< 210	210	U	150	< 170	170	U	120
N-Nitrosodimethylamine			< 260	260	U	110	< 260	260	U	100	< 270	270	U	110	< 290	290	U	120	< 300	300	U	120	< 240	240	U	98
N-Nitrosodi-n-propylamine			< 190	190	U	120	< 190	190	U	120	< 200	200	U	130	< 200	200	U	130	< 210	210	U	140	< 170	170	U	110
N-Nitrosodiphenylamine			< 260	260	U	140	< 260	260	U	140	< 270	270	U	150	< 290	290	U	160	< 300	300	U	160	< 240	240	U	130
Pentachloronitrobenzene			< 260	260	U	140	< 260	260	U	140	< 270	270	U	150	< 290	290	U	150	< 300	300	U	160	< 240	240	U	130
Pentachlorophenol	800	6,700	< 230	230	U	140	< 220	220	U	140	< 230	230	U	150	< 240	240	U	150	< 250	250	U	160	< 210	210	U	130
Phenanthrene	100,000	100,000	< 260	260	U	110	< 260	260	U	110	< 270	270	U	110	< 290	290	U	120	**7,400**	300	-	120	**910**	240	-	99
Phenol	330	100,000	< 260	260	U	120	< 260	260	U	120	< 270	270	U	130	< 290	290	U	130	< 300	300	U	140	< 240	240	U	110
Pyrene	100,000	100,000	**310**	260	-	130	< 260	260	U	130	< 270	270	U	130	< 290	290	U	140	**5,300**	300	-	150	< 240	240	U	120
Pyridine			< 260	260	U	92	< 260	260	U	92	< 270	270	U	96	< 290	290	U	100	< 300	300	U	100	< 240	240	U	85

Notes:
* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.

S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value
Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 4
Soil Analytical Results
Semi-Volatile Organic Compounds

RIR Results - February 2018

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	17SB9 (2-4') 2/26/2018 µg/Kg				17SB9 (5-7') 2/26/2018 µg/Kg				17SB10 (2-4') 2/26/2018 µg/Kg				17SB10 (5-7') 2/26/2018 µg/Kg				Duplicate 1 17SB1 (12.5-15') 2/26/2018 µg/Kg				Duplicate 2 (17SB4) (12.5-15') 2/26/2018 µg/Kg			
			Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
1,2,4,5-Tetrachlorobenzene			< 260	260	U	130	< 300	300	U	150	< 250	250	U	130	< 590	590	U	300	< 280	280	U	140	< 260	260	U	130
1,2,4-Trichlorobenzene			< 260	260	U	110	< 300	300	U	130	< 250	250	U	110	< 590	590	U	250	< 280	280	U	120	< 260	260	U	110
1,2-Dichlorobenzene			< 260	260	U	110	< 300	300	U	120	< 250	250	U	100	< 590	590	U	240	< 280	280	U	110	< 260	260	U	100
1,2-Diphenylhydrazine			< 260	260	U	120	< 300	300	U	140	< 250	250	U	120	< 590	590	U	270	< 280	280	U	130	< 260	260	U	120
1,3-Dichlorobenzene			< 260	260	U	110	< 300	300	U	130	< 250	250	U	110	< 590	590	U	250	< 280	280	U	120	< 260	260	U	110
1,4-Dichlorobenzene			< 260	260	U	110	< 300	300	U	130	< 250	250	U	110	< 590	590	U	250	< 280	280	U	120	< 260	260	U	110
2,4,5-Trichlorophenol			< 260	260	U	200	< 300	300	U	240	< 250	250	U	200	< 590	590	U	460	< 280	280	U	220	< 260	260	U	200
2,4,6-Trichlorophenol			< 190	190	U	120	< 210	210	U	140	< 180	180	U	120	< 420	420	U	270	< 200	200	U	130	< 190	190	U	120
2,4-Dichlorophenol			< 190	190	U	130	< 210	210	U	150	< 180	180	U	130	< 420	420	U	300	< 200	200	U	140	< 190	190	U	130
2,4-Dimethylphenol			< 260	260	U	92	< 300	300	U	110	< 250	250	U	89	< 590	590	U	210	< 280	280	U	99	< 260	260	U	92
2,4-Dinitrophenol			< 260	260	U	260	< 300	300	U	300	< 250	250	U	250	< 590	590	U	590	< 280	280	U	280	< 260	260	U	260
2,4-Dinitrotoluene			< 190	190	U	150	< 210	210	U	170	< 180	180	U	140	< 420	420	U	330	< 200	200	U	160	< 190	190	U	150
2,6-Dinitrotoluene			< 190	190	U	120	< 210	210	U	140	< 180	180	U	110	< 420	420	U	270	< 200	200	U	130	< 190	190	U	120
2-Chloronaphthalene			< 260	260	U	110	< 300	300	U	120	< 250	250	U	100	< 590	590	U	240	< 280	280	U	110	< 260	260	U	110
2-Chlorophenol			< 260	260	U	110	< 300	300	U	120	< 250	250	U	100	< 590	590	U	240	< 280	280	U	110	< 260	260	U	110
2-Methylnaphthalene			**940**	260	-	110	< 300	300	U	130	< 250	250	U	110	< 590	590	U	250	< 280	280	U	120	< 260	260	U	110
2-Methylphenol (o-cresol)	330	100,000	< 260	260	U	180	< 300	300	U	200	< 250	250	U	170	< 320	320	U	320	< 280	280	U	190	< 260	260	U	170
2-Nitroaniline			< 260	260	U	260	< 300	300	U	300	< 250	250	U	250	< 590	590	U	590	< 280	280	U	280	< 260	260	U	260
2-Nitrophenol			< 260	260	U	240	< 300	300	U	270	< 250	250	U	230	< 590	590	U	530	< 280	280	U	250	< 260	260	U	240
3&4-Methylphenol (m&p-cresol)	330	100,000	< 260	260	U	150	< 300	300	U	170	< 250	250	U	140	< 590	590	U	330	< 280	280	U	160	< 260	260	U	150
3,3'-Dichlorobenzidine			< 190	190	U	180	< 210	210	U	200	< 180	180	U	170	< 420	420	U	400	< 200	200	U	190	< 190	190	U	180
3-Nitroaniline			< 370	370	U	750	< 430	430	U	860	< 360	360	U	720	< 840	840	U	1700	< 400	400	U	800	< 370	370	U	740
4,6-Dinitro-2-methylphenol			< 220	220	U	75	< 260	260	U	86	< 220	220	U	72	< 510	510	U	170	< 240	240	U	80	< 220	220	U	74
4-Bromophenyl phenyl ether			< 260	260	U	110	< 300	300	U	130	< 250	250	U	110	< 590	590	U	250	< 280	280	U	120	< 260	260	U	110
4-Chloro-3-methylphenol			< 260	260	U	130	< 300	300	U	150	< 250	250	U	130	< 590	590	U	300	< 280	280	U	140	< 260	260	U	130
4-Chloroaniline			< 300	300	U	170	< 340	340	U	200	< 290	290	U	170	< 670	670	U	390	< 320	320	U	190	< 300	300	U	170
4-Chlorophenyl phenyl ether			< 260	260	U	130	< 300	300	U	140	< 250	250	U	120	< 590	590	U	280	< 280	280	U	130	< 260	260	U	120
4-Nitroaniline			< 370	370	U	120	< 430	430	U	140	< 360	360	U	120	< 840	840	U	280	< 400	400	U	130	< 370	370	U	120
4-Nitrophenol			< 370	370	U	170	< 430	430	U	190	< 360	360	U	160	< 840	840	U	380	< 400	400	U	180	< 370	370	U	170
Acenaphthene	20,000	100,000	< 260	260	U	110	< 300	300	U	130	< 250	250	U	110	< 590	590	U	260	< 280	280	U	120	< 260	260	U	110
Acenaphthylene	100,000	100,000	< 260	260	U	100	< 300	300	U	120	**140**	250	J	100	< 590	590	U	240	< 280	280	U	110	< 260	260	U	100
Acetophenone			< 260	260	U	120	< 300	300	U	130	< 250	250	U	110	< 590	590	U	260	< 280	280	U	130	< 260	260	U	120
Aniline			< 300	300	U	300	< 340	340	U	340	< 290	290	U	290	< 670	670	U	670	< 320	320	U	320	< 300	300	U	300
Anthracene	100,000	100,000	< 260	260	U	120	< 300	300	U	140	< 250	250	U	120	**360**	590	J	280	< 280	280	U	130	< 260	260	U	120
Benz(a)anthracene	1,000	1,000	**190**	260	J	130	**360**	300		140	**260**	250	-	120	**1,100**	590	-	280	< 280	280	U	130	< 260	260	U	120
Benzidine			< 370	370	U	220	< 430	430	U	250	< 360	360	U	210	< 840	840	U	500	< 400	400	U	240	< 370	370	U	220
Benzo(a)pyrene	1,000	1,000	**170**	190	J	120	**370**	210		140	**560**	180	-	120	**840**	420	-	270	< 200	200	U	130	< 190	190	U	120
Benzo(b)fluoranthene	1,000	1,000	**200**	260	J	130	**310**	300		150	**470**	250	-	120	**790**	590	-	290	< 280	280	U	140	< 260	260	U	130
Benzo(ghi)perylene	100,000	100,000	**140**	260	J	120	**220**	300	J	140	**530**	250	-	120	**390**	590	J	270	< 280	280	U	130	< 260	260	U	120
Benzo(k)fluoranthene	800	3,900	**140**	260	J	120	**280**	300	J	140	**450**	250	-	120	**670**	590	-	280	< 280	280	U	130	< 260	260	U	120
Benzoic acid			< 1900	1,900	U	750	< 2100	2,100	U	860	< 1800	1,800	U	720	< 4200	4,200	U	1700	< 2000	2,000	U	800	< 1900	1,900	U	740
Benzyl butyl phthalate			< 260	260	U	96	< 300	300	U	110	**1,000**	250	-	93	< 590	590	U	220	< 280	280	U	100	< 260	260	U	96
Bis(2-chloroethoxy)methane			< 260	260	U	100	< 300	300	U	120	< 250	250	U	100	< 590	590	U	230	< 280	280	U	110	< 260	260	U	100
Bis(2-chloroethyl)ether			< 190	190	U	100	< 210	210	U	120	< 180	180	U	97	< 420	420	U	230	< 200	200	U	110	< 190	190	U	100
Bis(2-chloroisopropyl)ether			< 260	260	U	100	< 300	300	U	120	< 250	250	U	100	< 590	590	U	230	< 280	280	U	110	< 260	260	U	100
Bis(2-ethylhexyl)phthalate			**130**	260	J	110	< 300	300	U	120	**240**	250	J	100	< 590	590	U	240	< 280	280	U	120	< 260	260	U	110
Carbazole			< 190	190	U	150	< 210	210	U	170	< 180	180	U	140	< 420	420	U	340	< 200	200	U	160	< 190	190	U	150
Chrysene	1,000	3,900	**310**	260	-	130	**360**	300	-	140	**360**	250	-	120	**1,000**	590	-	280	< 280	280	U	130	< 260	260	U	120
Dibenz(a,h)anthracene	330	330	< 190	190	U	120	< 210	210	U	140	**200**	180	-	120	< 330	330	U	270	< 200	200	U	130	< 190	190	U	120
Dibenzofuran	7,000	59,000	< 260	260	U	110	< 300	300	U	130	< 250	250	U	110	< 330	330	U	250	< 280	280	U	120	< 260	260	U	110
Diethyl phthalate			< 260	260	U	120	< 300	300	U	140	< 250	250	U	110	< 590	590	U	270	< 280	280	U	130	< 260	260	U	120
Dimethylphthalate			< 260	260	U	120	< 300	300	U	130	< 250	250	U	110	< 590	590	U	260	< 280	280	U	120	< 260	260	U	120
Di-n-butylphthalate			< 260	260	U	99	< 300	300	U	110	< 250	250	U	96	< 590	590	U	220	< 280	280	U	110	< 260	260	U	99
Di-n-octylphthalate			< 260	260	U	96	< 300	300	U	110	< 250	250	U	93	< 590	590	U	220	< 280	280	U	100	< 260	260	U	96
Fluoranthene	100,000	100,000	**430**	260	-	120	**700**	300	-	140	**450**	250	-	120	**1,900**	590	-	270	< 280	280	U	130	< 260	260	U	120
Fluorene	30,000	100,000	**140**	260	J	120	< 300	300	U	140	< 250	250	U	120	< 590	590	U	280	< 280	280	U	130	< 260	260	U	120
Hexachlorobenzene			< 190	190	U	110	< 210	210	U	130	< 180	180	U	110	< 330	330	U	250	< 200	200	U	120	< 190	190	U	110
Hexachlorobutadiene			< 260	260	U	130	< 300	300	U	160	< 250	250	U	130	< 590	590	U	310	< 280	280	U	150	< 260	260	U	130
Hexachlorocyclopentadiene			< 260	260	U	110	< 300	300	U	130	< 250	250	U	110	< 590	590	U	260	< 280	280	U	120	< 260	260	U	110
Hexachloroethane			< 190	190	U	110	< 210	210	U	130	< 180	180	U	110	< 420	420	U	250	< 200	200	U	120	< 190	190	U	110
Indeno(1,2,3-cd)pyrene	500	500	**140**	260	J	120	**270**	300	J	140	**540**	250	-	120	**470**	500	J	280	< 280	280	U	130	< 260	260	U	120
Isophorone			< 190	190	U	100	< 210	210	U	120	< 180	180	U	100	< 420	420	U	240	< 200	200	U	110	< 190	190	U	100
Naphthalene	12,000	100,000	**970**	260	-	110	< 300	300	U	120	< 250	250	U	100	< 590	590	U	240	< 280	280	U	120	< 260	260	U	110
Nitrobenzene			< 190	190	U	130	< 210	210	U	150	< 180	180	U	130	< 420	420	U	300	< 200	200	U	140	< 190	190	U	130
N-Nitrosodimethylamine			< 260	260	U	110	< 300	300	U	120	< 250	250	U	100	< 590	590	U	240	< 280	280	U	110	< 260	260	U	100
N-Nitrosodi-n-propylamine			< 190	190	U	120	< 210	210	U	140	< 180	180	U	120	< 420	420	U	270	< 200	200	U	130	< 190	190	U	120
N-Nitrosodiphenylamine			< 260	260	U	140	< 300	300	U	160	< 250	250	U	140	< 590	590	U	320	< 280	280	U	150	< 260	260	U	140
Pentachloronitrobenzene			< 260	260	U	140	< 300	300	U	160	< 250	250	U	130	< 590	590	U	310	< 280	280	U	150	< 260	260	U	140
Pentachlorophenol	800	6,700	< 220	220	U	140	< 260	260	U	160	< 220	220	U	140	< 510	510	U	320	< 240	240	U	150	< 220	220	U	140
Phenanthrene	100,000	100,000	**350**	260	-	110	**510**	300	-	120	**250**	250	J	100	**1,300**	590	-	240	< 280	280	U	110	< 260	260	U	110
Phenol	330	100,000	< 260	260	U	120	< 300	300	U	140	< 250	250	U	120	< 330	330	U	270	< 280	280	U	130	< 260	260	U	120
Pyrene	100,000	100,000	**360**	260	-	130	**660**	300	-	150	**460**	250	-	120	**1,500**	590	-	290	< 280	280	U	140	< 260	260	U	130
Pyridine			< 260	260	U	92	< 300	300	U	110	< 250	250	U	89	< 590	590	U	210	< 280	280	U	99	< 260	260	U	91

Notes:
* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.

S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value
Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 5
Soil Analytical Results
Pesticides and PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	Phase II Results - May 2016										RIR Results - February 2018											
				B1		B2		B4		B6		B10		17SB1				17SB2							
				(0-2') 5/26/2016 µg/Kg		(0-2') 5/26/2016 µg/Kg		(0-2') 5/26/2016 µg/Kg		(1-3') 5/26/2016 µg/Kg		(0-2') 5/26/2016 µg/Kg		(12.5-15') 2/26/2018 µg/Kg				(2-4') 2/26/2018 µg/Kg				(12.5-15') 2/26/2018 µg/Kg			
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
Pesticides	4,4' -DDD	3.3	13,000	< 2.3	2.3	< 2.8	2.8	< 2.1	2.1	< 3.0	3.0	< 21	21	< 2.2	2.2	U	2.2	< 2.2	2.2	U	2.2	< 2.4	2.4	U	2.4
	4,4' -DDE	3.3	8,900	< 4.0	4.0	< 2.1	2.1	< 2.1	2.1	< 5.0	5.0	< 21	21	< 2.2	2.2	U	2.2	**11**	3.7	-	3.7	< 2.4	2.4	U	2.4
	4,4' -DDT	3.3	7,900	< 15	15	< 2.1	2.1	< 3.0	3.0	< 10	10	< 21	21	< 2.2	2.2	U	2.2	**15**	2.2	-	2.2	< 2.4	2.4	U	2.4
	a-BHC	20	480	< 7.5	7.5	< 7.0	7.0	< 7.1	7.1	< 7.2	7.2	< 18	18	< 7.3	7.3	U	7.3	< 7.5	7.5	U	7.5	< 7.9	7.9	U	7.9
	a-Chlordane	94	4,200	< 3.8	3.8	< 3.5	3.5	< 5.0	5.0	< 3.6	3.6	< 36	36	< 3.7	3.7	U	3.7	< 3.7	3.7	U	3.7	< 3.9	3.9	U	3.9
	Aldrin	5	97	< 3.8	3.8	< 3.5	3.5	< 3.5	3.5	< 3.6	3.6	< 18	18	< 3.7	3.7	U	3.7	< 3.7	3.7	U	3.7	< 3.9	3.9	U	3.9
	b-BHC	36	360	< 7.5	7.5	< 7.0	7.0	< 7.1	7.1	< 7.2	7.2	< 18	18	< 7.3	7.3	U	7.3	< 7.5	7.5	U	7.5	< 7.9	7.9	U	7.9
	Chlordane	94	4,200	< 38	38	< 35	35	< 200	200	< 36	36	< 360	360	< 37	37	U	37	< 37	37	U	37	< 39	39	U	39
	d-BHC	40	100,000	< 7.5	7.5	< 7.0	7.0	< 7.1	7.1	< 7.2	7.2	< 18	18	< 7.3	7.3	U	7.3	< 7.5	7.5	U	7.5	< 7.9	7.9	U	7.9
	Dieldrin	5	200	< 5.0	5.0	< 3.5	3.5	< 3.5	3.5	< 3.6	3.6	< 11	11	< 3.7	3.7	U	3.7	< 3.7	3.7	U	3.7	< 3.9	3.9	U	3.9
	Endosulfan I	2,400	24,000	< 7.5	7.5	< 7.0	7.0	< 7.1	7.1	< 7.2	7.2	< 71	71	< 7.3	7.3	U	7.3	< 7.5	7.5	U	7.5	< 7.9	7.9	U	7.9
	Endosulfan II	2,400	24,000	< 7.5	7.5	< 7.0	7.0	< 7.1	7.1	< 7.2	7.2	< 71	71	< 7.3	7.3	U	7.3	< 7.5	7.5	U	7.5	< 7.9	7.9	U	7.9
	Endosulfan sulfate	2,400	24,000	< 7.5	7.5	< 7.0	7.0	< 7.1	7.1	< 7.2	7.2	< 71	71	< 7.3	7.3	U	7.3	< 7.5	7.5	U	7.5	< 7.9	7.9	U	7.9
	Endrin	14	11,000	< 7.5	7.5	< 7.0	7.0	< 7.1	7.1	< 7.2	7.2	< 36	36	< 7.3	7.3	U	7.3	< 7.5	7.5	U	7.5	< 7.9	7.9	U	7.9
	Endrin aldehyde			< 10	10	< 15	15	< 7.1	7.1	< 7.2	7.2	< 71	71	< 7.3	7.3	U	7.3	< 7.5	7.5	U	7.5	< 7.9	7.9	U	7.9
	Endrin ketone			< 7.5	7.5	< 7.0	7.0	< 7.1	7.1	< 7.2	7.2	< 71	71	< 7.3	7.3	U	7.3	< 7.5	7.5	U	7.5	< 7.9	7.9	U	7.9
	g-BHC			< 1.5	1.5	< 1.4	1.4	< 1.4	1.4	< 1.4	1.4	< 14	14	< 1.5	1.5	U	1.5	< 1.5	1.5	U	1.5	< 1.6	1.6	U	1.6
	g-Chlordane			< 3.8	3.8	< 10	10	< 10	10	< 3.6	3.6	< 36	36	< 3.7	3.7	U	3.7	< 3.7	3.7	U	3.7	< 3.9	3.9	U	3.9
	Heptachlor	42	2,100	< 7.5	7.5	< 7.0	7.0	< 7.1	7.1	< 7.2	7.2	< 36	36	< 7.3	7.3	U	7.3	< 7.5	7.5	U	7.5	< 7.9	7.9	U	7.9
	Heptachlor epoxide			< 7.5	7.5	< 7.0	7.0	< 7.1	7.1	< 7.2	7.2	< 71	71	< 7.3	7.3	U	7.3	< 7.5	7.5	U	7.5	< 7.9	7.9	U	7.9
	Methoxychlor			< 38	38	< 35	35	< 35	35	< 36	36	< 360	360	< 37	37	U	37	< 37	37	U	37	< 39	39	U	39
	Toxaphene			< 150	150	< 140	140	< 140	140	< 140	140	< 1400	1,400	< 150	150	U	150	< 150	150	U	150	< 160	160	U	160
PCBs	PCB-1016	100	1,000	< 75	75	< 70	70	< 71	71	< 72	72	< 71	71	< 85	85	U	73	< 80	80	U	75	< 80	80	U	79
	PCB-1221	100	1,000	< 75	75	< 70	70	< 71	71	< 72	72	< 71	71	< 85	85	U	73	< 80	80	U	75	< 80	80	U	79
	PCB-1232	100	1,000	< 75	75	< 70	70	< 71	71	< 72	72	< 71	71	< 85	85	U	73	< 80	80	U	75	< 80	80	U	79
	PCB-1242	100	1,000	< 75	75	< 70	70	< 71	71	< 72	72	< 71	71	< 85	85	U	73	< 80	80	U	75	< 80	80	U	79
	PCB-1248	100	1,000	< 75	75	< 70	70	< 71	71	< 72	72	< 71	71	< 85	85	U	73	< 80	80	U	75	< 80	80	U	79
	PCB-1254	100	1,000	**210**	75	< 70	70	< 71	71	< 72	72	< 71	71	< 85	85	U	73	< 80	80		75	< 80	80	U	79
	PCB-1260	100	1,000	< 75	75	< 70	70	< 71	71	**110**	72	< 71	71	< 85	85	U	73	< 80	80	U	75	< 80	80	U	79
	PCB-1262	100	1,000	< 75	75	< 70	70	< 71	71	< 72	72	< 71	71	< 85	85	U	73	< 80	80	U	75	< 80	80	U	79
	PCB-1268	100	1,000	< 75	75	< 70	70	< 71	71	< 72	72	< 71	71	< 85	85	U	73	< 80	80	U	75	< 80	80	U	79

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.

S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value
Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 5
Soil Analytical Results
Pesticides and PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	RIR Results - February and March 2018																			
				17SB3 (12.5-15') 2/26/2018 µg/Kg				17SB4 (12.5-15') 2/26/2018 µg/Kg				17SB5 (2-4') 2/26/2018 µg/Kg				17SB6 (0-2') 3/1/2018 µg/Kg				17SB6 (4-6') 3/1/2018 µg/Kg			
				Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
Pesticides	4,4' -DDD	3.3	13,000	< 2.2	2.2	U	2.2	< 2.3	2.3	U	2.3	**20**	3.3	-	3.3	< 2.3	2.3	U	2.3	< 2.2	2.2	U	2.2
	4,4' -DDE	3.3	8,900	< 2.2	2.2	U	2.2	< 2.3	2.3	U	2.3	< 3.3	3.3	U	3.3	< 2.3	2.3	U	2.3	< 2.2	2.2	U	2.2
	4,4' -DDT	3.3	7,900	< 2.2	2.2	U	2.2	< 2.3	2.3	U	2.3	< 2.4	2.4	U	2.4	< 2.3	2.3	U	2.3	< 2.2	2.2	U	2.2
	a-BHC	20	480	< 7.5	7.5	U	7.5	< 7.6	7.6	U	7.6	< 7.9	7.9	U	7.9	< 7.7	7.7	U	7.7	< 7.5	7.5	U	7.5
	a-Chlordane	94	4,200	< 3.7	3.7	U	3.7	< 3.8	3.8	U	3.8	< 3.9	3.9	U	3.9	< 3.9	3.9	U	3.9	< 3.7	3.7	U	3.7
	Aldrin	5	97	< 3.7	3.7	U	3.7	< 3.8	3.8	U	3.8	< 3.9	3.9	U	3.9	< 3.9	3.9	U	3.9	< 3.7	3.7	U	3.7
	b-BHC	36	360	< 7.5	7.5	U	7.5	< 7.6	7.6	U	7.6	< 10	10	U	10	< 7.7	7.7	U	7.7	< 7.5	7.5	U	7.5
	Chlordane	94	4,200	< 37	37	U	37	< 38	38	U	38	< 39	39	U	39	< 39	39	U	39	< 37	37	U	37
	d-BHC	40	100,000	< 7.5	7.5	U	7.5	< 7.6	7.6	U	7.6	< 7.9	7.9	U	7.9	< 7.7	7.7	U	7.7	< 7.5	7.5	U	7.5
	Dieldrin	5	200	< 3.7	3.7	U	3.7	< 3.8	3.8	U	3.8	< 3.9	3.9	U	3.9	< 3.9	3.9	U	3.9	< 3.7	3.7	U	3.7
	Endosulfan I	2,400	24,000	< 7.5	7.5	U	7.5	< 7.6	7.6	U	7.6	< 7.9	7.9	U	7.9	< 7.7	7.7	U	7.7	< 7.5	7.5	U	7.5
	Endosulfan II	2,400	24,000	< 7.5	7.5	U	7.5	< 7.6	7.6	U	7.6	< 7.9	7.9	U	7.9	< 7.7	7.7	U	7.7	< 7.5	7.5	U	7.5
	Endosulfan sulfate	2,400	24,000	< 7.5	7.5	U	7.5	< 7.6	7.6	U	7.6	< 7.9	7.9	U	7.9	< 7.7	7.7	U	7.7	< 7.5	7.5	U	7.5
	Endrin	14	11,000	< 7.5	7.5	U	7.5	< 7.6	7.6	U	7.6	< 7.9	7.9	U	7.9	< 7.7	7.7	U	7.7	< 7.5	7.5	U	7.5
	Endrin aldehyde			< 7.5	7.5	U	7.5	< 7.6	7.6	U	7.6	< 7.9	7.9	U	7.9	< 7.7	7.7	U	7.7	< 7.5	7.5	U	7.5
	Endrin ketone			< 7.5	7.5	U	7.5	< 7.6	7.6	U	7.6	< 7.9	7.9	U	7.9	< 7.7	7.7	U	7.7	< 7.5	7.5	U	7.5
	g-BHC			< 1.5	1.5	U	1.5	< 1.5	1.5	U	1.5	< 1.6	1.6	U	1.6	< 1.5	1.5	U	1.5	< 1.5	1.5	U	1.5
	g-Chlordane			< 3.7	3.7	U	3.7	< 3.8	3.8	U	3.8	< 5.0	5.0	U	5.0	< 3.9	3.9	U	3.9	< 3.7	3.7	U	3.7
	Heptachlor	42	2,100	< 7.5	7.5	U	7.5	< 7.6	7.6	U	7.6	< 7.9	7.9	U	7.9	< 7.7	7.7	U	7.7	< 7.5	7.5	U	7.5
	Heptachlor epoxide			< 7.5	7.5	U	7.5	< 7.6	7.6	U	7.6	< 7.9	7.9	U	7.9	< 7.7	7.7	U	7.7	< 7.5	7.5	U	7.5
	Methoxychlor			< 37	37	U	37	< 38	38	U	38	< 39	39	U	39	< 39	39	U	39	< 37	37	U	37
	Toxaphene			< 150	150	U	150	< 150	150	U	150	< 160	160	U	160	< 150	150	U	150	< 150	150	U	150
PCBs	PCB-1016	100	1,000	< 76	76	U	75	< 78	78	U	76	< 72	72	U	79	< 77	77	U	77	< 75	75	U	75
	PCB-1221	100	1,000	< 76	76	U	75	< 78	78	U	76	< 72	72	U	79	< 77	77	U	77	< 75	75	U	75
	PCB-1232	100	1,000	< 76	76	U	75	< 78	78	U	76	< 72	72	U	79	< 77	77	U	77	< 75	75	U	75
	PCB-1242	100	1,000	< 76	76	U	75	< 78	78	U	76	< 72	72	U	79	< 77	77	U	77	< 75	75	U	75
	PCB-1248	100	1,000	< 76	76	U	75	< 78	78	U	76	< 72	72	U	79	< 77	77	U	77	< 75	75	U	75
	PCB-1254	100	1,000	< 76	76	U	75	< 78	78	U	76	< 72	72	U	79	< 77	77	U	77	< 75	75	U	75
	PCB-1260	100	1,000	< 76	76	U	75	< 78	78	U	76	< 72	72	-	79	< 77	77	U	77	< 75	75	U	75
	PCB-1262	100	1,000	< 76	76	U	75	< 78	78	U	76	< 72	72	U	79	< 77	77	U	77	< 75	75	U	75
	PCB-1268	100	1,000	< 76	76	U	75	< 78	78	U	76	< 72	72	U	79	< 77	77	U	77	< 75	75	U	75

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.

S- This compound is a solvent t S- This compound is a solvent that is used in the laboratory.
D- The reported concentration i D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedan Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value
Bold/highlighted- Indicated exceedan Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 5
Soil Analytical Results
Pesticides and PCBs

	COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	RIR Results - February 2018																							
				17SB7								17SB9				17SB10				Duplicate 1 17SB1				Duplicate 2 (17SB4)			
				(2-4') 2/26/2018 µg/Kg				(12.5-15') 2/26/2018 µg/Kg				(2-4') 2/26/2018 µg/Kg				(2-4') 2/26/2018 µg/Kg				(12.5-15') 2/26/2018 µg/Kg				(12.5-15') 2/26/2018 µg/Kg			
				Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
Pesticides	4,4' -DDD	3.3	13,000	< 2.4	2.4	U	2.4	< 2.5	2.5	U	2.5	< 2.2	2.2	U	2.2	< 2.2	2.2	U	2.2	< 2.4	2.4	U	2.4	< 2.2	2.2	U	2.2
	4,4' -DDE	3.3	8,900	< 2.4	2.4	U	2.4	< 2.5	2.5	U	2.5	< 2.2	2.2	U	2.2	< 2.2	2.2	U	2.2	< 2.4	2.4	U	2.4	< 2.2	2.2	U	2.2
	4,4' -DDT	3.3	7,900	< 2.4	2.4	U	2.4	< 2.5	2.5	U	2.5	**9.5**	2.2	-	2.2	**8.1**	5.0	-	5.0	< 2.4	2.4	U	2.4	< 2.2	2.2	U	2.2
	a-BHC	20	480	< 7.9	7.9	U	7.9	< 8.4	8.4	U	8.4	< 7.4	7.4	U	7.4	< 7.2	7.2	U	7.2	< 8.0	8.0	U	8.0	< 7.4	7.4	U	7.4
	a-Chlordane	94	4,200	< 4.0	4.0	U	4.0	< 4.2	4.2	U	4.2	< 3.7	3.7	U	3.7	< 3.6	3.6	U	3.6	< 4.0	4.0	U	4.0	< 3.7	3.7	U	3.7
	Aldrin	5	97	< 4.0	4.0	U	4.0	< 4.2	4.2	U	4.2	< 3.7	3.7	U	3.7	< 3.6	3.6	U	3.6	< 4.0	4.0	U	4.0	< 3.7	3.7	U	3.7
	b-BHC	36	360	< 7.9	7.9	U	7.9	< 8.4	8.4	U	8.4	< 7.4	7.4	U	7.4	< 7.2	7.2	U	7.2	< 8.0	8.0	U	8.0	< 7.4	7.4	U	7.4
	Chlordane	94	4,200	< 40	40	U	40	< 42	42	U	42	< 37	37	U	37	< 36	36	U	36	< 40	40	U	40	< 37	37	U	37
	d-BHC	40	100,000	< 7.9	7.9	U	7.9	< 8.4	8.4	U	8.4	< 7.4	7.4	U	7.4	< 7.2	7.2	U	7.2	< 8.0	8.0	U	8.0	< 7.4	7.4	U	7.4
	Dieldrin	5	200	< 4.0	4.0	U	4.0	< 4.2	4.2	U	4.2	< 3.7	3.7	U	3.7	< 3.6	3.6	U	3.6	< 4.0	4.0	U	4.0	< 3.7	3.7	U	3.7
	Endosulfan I	2,400	24,000	< 7.9	7.9	U	7.9	< 8.4	8.4	U	8.4	< 7.4	7.4	U	7.4	< 7.2	7.2	U	7.2	< 8.0	8.0	U	8.0	< 7.4	7.4	U	7.4
	Endosulfan II	2,400	24,000	< 7.9	7.9	U	7.9	< 8.4	8.4	U	8.4	< 7.4	7.4	U	7.4	< 7.2	7.2	U	7.2	< 8.0	8.0	U	8.0	< 7.4	7.4	U	7.4
	Endosulfan sulfate	2,400	24,000	< 7.9	7.9	U	7.9	< 8.4	8.4	U	8.4	< 7.4	7.4	U	7.4	< 7.2	7.2	U	7.2	< 8.0	8.0	U	8.0	< 7.4	7.4	U	7.4
	Endrin	14	11,000	< 7.9	7.9	U	7.9	< 8.4	8.4	U	8.4	< 7.4	7.4	U	7.4	< 7.2	7.2	U	7.2	< 8.0	8.0	U	8.0	< 7.4	7.4	U	7.4
	Endrin aldehyde			< 7.9	7.9	U	7.9	< 8.4	8.4	U	8.4	< 7.4	7.4	U	7.4	< 7.2	7.2	U	7.2	< 8.0	8.0	U	8.0	< 7.4	7.4	U	7.4
	Endrin ketone			< 7.9	7.9	U	7.9	< 8.4	8.4	U	8.4	< 7.4	7.4	U	7.4	< 7.2	7.2	U	7.2	< 8.0	8.0	U	8.0	< 7.4	7.4	U	7.4
	g-BHC			< 1.6	1.6	U	1.6	< 1.7	1.7	U	1.7	< 1.5	1.5	U	1.5	< 1.4	1.4	U	1.4	< 1.6	1.6	U	1.6	< 1.5	1.5	U	1.5
	g-Chlordane			< 4.0	4.0	U	4.0	< 4.2	4.2	U	4.2	< 3.7	3.7	U	3.7	< 3.6	3.6	U	3.6	< 4.0	4.0	U	4.0	< 3.7	3.7	U	3.7
	Heptachlor	42	2,100	< 7.9	7.9	U	7.9	< 8.4	8.4	U	8.4	< 7.4	7.4	U	7.4	< 7.2	7.2	U	7.2	< 8.0	8.0	U	8.0	< 7.4	7.4	U	7.4
	Heptachlor epoxide			< 7.9	7.9	U	7.9	< 8.4	8.4	U	8.4	< 7.4	7.4	U	7.4	< 7.2	7.2	U	7.2	< 8.0	8.0	U	8.0	< 7.4	7.4	U	7.4
	Methoxychlor			< 40	40	U	40	< 42	42	U	42	< 37	37	U	37	< 36	36	U	36	< 40	40	U	40	< 37	37	U	37
	Toxaphene			< 160	160	U	160	< 170	170	U	170	< 150	150	U	150	< 140	140	U	140	< 160	160	U	160	< 150	150	U	150
PCBs	PCB-1016	100	1,000	< 78	78	U	79	< 78	78	U	84	< 75	75	U	74	< 72	72	U	72	< 74	74	U	80	< 74	74	U	74
	PCB-1221	100	1,000	< 78	78	U	79	< 78	78	U	84	< 75	75	U	74	< 72	72	U	72	< 74	74	U	80	< 74	74	U	74
	PCB-1232	100	1,000	< 78	78	U	79	< 78	78	U	84	< 75	75	U	74	< 72	72	U	72	< 74	74	U	80	< 74	74	U	74
	PCB-1242	100	1,000	< 78	78	U	79	< 78	78	U	84	< 75	75	U	74	< 72	72	U	72	< 74	74	U	80	< 74	74	U	74
	PCB-1248	100	1,000	< 78	78	U	79	< 78	78	U	84	< 75	75	U	74	< 72	72	U	72	< 74	74	U	80	< 74	74	U	74
	PCB-1254	100	1,000	< 78	78	U	79	< 78	78	U	84	< 75	75	U	74	< 72	72	-	72	< 74	74	U	80	< 74	74	U	74
	PCB-1260	100	1,000	< 78	78	U	79	< 78	78	U	84	< 75	75	U	74	< 72	72	U	72	< 74	74	U	80	< 74	74	U	74
	PCB-1262	100	1,000	< 78	78	U	79	< 78	78	U	84	< 75	75	U	74	< 72	72	U	72	< 74	74	U	80	< 74	74	U	74
	PCB-1268	100	1,000	< 78	78	U	79	< 78	78	U	84	< 75	75	U	74	< 72	72	U	72	< 74	74	U	80	< 74	74	U	74

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
RL- Reporting Limit
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Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 6
Soil Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	Phase II Results - May 2016										RIR Results - February 2018											
			B1		B2		B4		B6		B10		17SB1				17SB2							
			(0-2') 5/26/2016 mg/Kg		(0-2') 5/26/2016 mg/Kg		(0-2') 5/26/2016 mg/Kg		(1-3') 5/26/2016 mg/Kg		(0-2') 5/26/2016 mg/Kg		(12.5-15') 2/26/2018 mg/Kg				(2-4') 2/26/2018 mg/Kg				(12.5-15') 2/26/2018 mg/Kg			
			Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
Aluminum			-	-	-	-	-	-	-	-	-	-	**6,090**	35	-	6.9	**8,940**	40	-	8.0	**10,700**	37	-	7.4
Antimony			-	-	-	-	-	-	-	-	-	-	< 1.7	1.7	U	1.7	< 2.0	2.0	U	2.0	< 1.9	1.9	U	1.9
Arsenic	13	16	**6.7**	0.8	**4.5**	0.7	**3.6**	0.7	**5.8**	0.7	**4.4**	0.7	**0.7**	0.69	*	0.69	**12.5**	0.80	*	0.80	< 0.74	0.74	U*	0.74
Barium	350	350	**268**	0.8	**77.1**	0.7	**96.9**	0.7	**159**	0.7	**92.5**	0.7	**56.1**	0.7	N	0.35	**189**	0.8	N	0.40	**99.9**	0.7	N	0.37
Beryllium	7.2	14	**-**	-	**-**	-	**-**	-	**-**	-	**-**	-	**0.24**	0.28	J	0.14	**0.36**	0.32	-	0.16	**0.42**	0.30	-	0.15
Cadmium	2.5	2.5	**2.3**	0.39	**1.19**	0.34	**0.74**	0.36	**0.87**	0.33	**0.97**	0.35	< 0.35	0.35	U	0.35	**1.7**	0.40	-	0.40	< 0.37	0.37	U	0.37
Calcium			-	-	-	-	-	-	-	-	-	-	**962**	3.5	-	3.2	**18,200**	40	-	37	**1,190**	3.7	-	3.4
Chromium	30	180	**34.8**	0.39	**22.1**	0.34	**22.3**	0.36	**23**	0.33	**23.1**	0.35	**16.9**	0.35	-	0.35	**49.5**	0.40	-	0.40	**25.3**	0.37	-	0.37
Cobalt			-	-	-	-	-	-	-	-	-	-	**6.44**	0.35	-	0.35	**17.1**	0.40	-	0.40	**9.78**	0.37	-	0.37
Copper	50	270	-	-	-	-	-	-	-	-	-	-	**10.9**	0.35	-	0.35	**238**	4.0	-	4.0	**26**	0.37	-	0.37
Iron			-	-	-	-	-	-	-	-	-	-	**10,100**	35	*	35	**61,900**	40	*	40	**16,200**	37	*	37
Lead	63	400	**700**	7.8	**104**	0.7	**103**	0.7	**210**	6.5	**111**	0.7	**2.6**	0.7	-	0.35	**394**	8.0	-	4.0	**2**	0.7	-	0.37
Magnesium			-	-	-	-	-	-	-	-	-	-	**2,650**	3.5	-	3.5	**8,480**	40	-	40	**4,850**	3.7	-	3.7
Manganese	1,600	2,000	-	-	-	-	-	-	-	-	-	-	**104**	0.35	-	0.35	**495**	4.0	-	4.0	**155**	3.7	-	3.7
Mercury	0.18	0.81	**0.25**	0.03	**0.05**	0.03	**0.06**	0.03	**0.19**	0.03	**0.09**	0.03	< 0.03	0.03	U	0.02	**0.56**	0.14	-	0.08	< 0.03	0.03	U	0.02
Nickel	30	140	-	-	-	-	-	-	-	-	-	-	**10.6**	0.35	-	0.35	**71.5**	0.40	-	0.40	**22.1**	0.37	-	0.37
Potassium			-	-	-	-	-	-	-	-	-	-	**2,510**	7	N	2.7	**2,720**	8	N	3.1	**4,300**	74	N	29
Selenium	3.9	36	< 1.6	1.6	< 1.4	1.4	< 1.4	1.4	< 1.3	1.3	< 1.4	1.4	< 1.4	1.4	U	1.2	< 1.6	1.6	U	1.4	< 1.5	1.5	U	1.3
Silver	2	36	< 0.39	0.39	< 0.34	0.34	< 0.36	0.36	< 0.33	0.33	< 0.35	0.35	< 0.35	0.35	U	0.35	**1.48**	0.40	-	0.40	< 0.37	0.37	U	0.37
Sodium			-	-	-	-	-	-	-	-	-	-	**295**	7	N, *	3.0	**407**	8	N, *	3.4	**298**	7	N, *	3.2
Thallium			-	-	-	-	-	-	-	-	-	-	< 1.4	1.4	U	1.4	< 1.6	1.6	U	1.6	< 1.5	1.5	U	1.5
Vanadium			-	-	-	-	-	-	-	-	-	-	**20.9**	0.35	-	0.35	**89.6**	0.40	-	0.40	**32.1**	0.37	-	0.37
Zinc	109	2,200	-	-	-	-	-	-	-	-	-	-	**22**	0.7	-	0.35	**247**	8.0	-	4.0	**41.3**	0.7	-	0.37

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.
S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value
Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 6
Soil Analytical Results
Metals

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	RIR Results - February and March 2018																			
			17SB3				17SB4				17SB5				17SB6							
			(12.5-15') 2/26/2018 mg/Kg				(12.5-15') 2/26/2018 mg/Kg				(2-4') 2/26/2018 mg/Kg				(0-2') 3/1/2018 mg/Kg				(4-6') 3/1/2018 mg/Kg			
			Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
Aluminum			**17,800**	36	-	7.1	**6,860**	40	-	76	**11,700**	44	-	8.7	**18,300**	42	-	8.3	**21,100**	340	-	68
Antimony			< 1.8	1.8	U	1.8	< 2.0	2.0	U	1.9	< 2.2	2.2	U	2.2	< 2.1	2.1	U	2.1	< 1.7	1.7	U	1.7
Arsenic	13	16	**0.76**	0.71	*	0.71	**1.44**	0.81	U*	0.76	**9.78**	0.87	*	0.87	**5.12**	0.83	-	0.83	**1.18**	0.68	-	0.68
Barium	350	350	**284**	0.7	N	0.36	**41.6**	0.8	N	0.38	**275**	8.7	N	4.4	**196**	0.8	-	0.42	**691**	0.7	-	0.34
Beryllium	7.2	14	**0.55**	0.28	-	0.14	**0.3**	0.32	-	0.15	**0.45**	0.35	-	0.17	**0.55**	0.33	-	0.17	**0.7**	0.27	-	0.14
Cadmium	2.5	2.5	< 0.36	0.36	U	0.36	< 0.40	0.40	U	0.38	**2.17**	0.44	-	0.44	< 0.42	0.42	U	0.42	< 0.34	0.34	U	0.34
Calcium			**957**	3.6	-	3.3	**2,020**	4.0	-	3.5	**19,000**	44	-	40	**4,820**	4.2	*	3.8	**6,750**	3.4	*	3.1
Chromium	30	180	**37.7**	0.36	-	0.36	**20.7**	0.40	-	0.38	**35.4**	0.44	-	0.44	**42.5**	0.42	-	0.42	**86.9**	0.34	-	0.34
Cobalt			**15.4**	0.36	-	0.36	**8.31**	0.40	-	0.38	**13.3**	0.44	-	0.44	**19**	0.42	-	0.42	**18**	0.34	-	0.34
Copper	50	270	**56**	0.36	-	0.36	**13.8**	0.40	-	0.38	**102**	0.44	-	0.44	**32.8**	0.42	-	0.42	**55**	0.34	-	0.34
Iron			**27,500**	36	*	36	**16,100**	40	*	38	**37,600**	44	*	44	**36,400**	42	-	42	**24,200**	34	-	34
Lead	63	400	**6.4**	0.7	-	0.36	**2.2**	0.8	-	0.38	**598**	8.7	-	4.4	**230**	8.3	-	4.2	**41.9**	0.7	-	0.34
Magnesium			**6,050**	36	-	36	**3,080**	4.0	-	38	**8,030**	44	-	44	**6,990**	42	-	42	**10,300**	34	-	34
Manganese	1,600	2,000	**499**	3.6	-	3.6	**332**	4.0	-	3.8	**374**	4.4	-	4.4	**408**	3.8	-	3.8	**488**	3.4	-	3.4
Mercury	0.18	0.81	< 0.03	0.03	U	0.02	< 0.03	0.03	U	0.02	**0.91**	0.15	-	0.09	**0.23**	0.15	-	0.09	< 0.14	0.14	U	0.08
Nickel	30	140	**32**	0.36	-	0.36	**14**	0.40	-	0.38	**36.8**	0.44	-	0.44	**36**	0.42	-	0.42	**40.9**	0.34	-	0.34
Potassium			**8,020**	71	N	28	**1,750**	8	N	29	**3,470**	9	N	3.4	**7,220**	83	-	32	**7,880**	68	-	27
Selenium	3.9	36	< 1.4	1.4	U	1.2	< 1.6	1.6	U	1.3	< 1.7	1.7	U	1.5	< 1.7	1.7	U	1.4	< 1.4	1.4	U	1.2
Silver	2	36	< 0.36	0.36	U	0.36	< 0.40	0.40	U	0.38	< 0.44	0.44	U	0.44	< 0.42	0.42	U	0.42	< 0.34	0.34	U	0.34
Sodium			**264**	7	N, *	3.1	**194**	8	N, *	3.2	**447**	8	N, *	3.3	**479**	8	N	3.6	**707**	7	N	2.9
Thallium			< 1.4	1.4	U	1.4	< 1.6	1.6	U	1.5	< 1.7	1.7	U	1.7	< 1.7	1.7	U	1.7	< 1.4	1.4	U	1.4
Vanadium			**48.6**	0.36	-	0.36	**27.9**	0.40	-	0.38	**88.9**	0.44	-	0.44	**57.1**	0.42	-	0.42	**54.3**	0.34	-	0.34
Zinc	109	2,200	**64.7**	0.7	-	0.36	**35**	0.8	-	0.38	**305**	8.7	-	4.4	**150**	8.3	-	4.2	**61**	6.8	-	3.4

Notes:

* - 6 NYCRR Part 375-6 Remedial Program Soil Cleanup Objectives
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.
S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC UUSCO Guidance Value
Bold/highlighted- Indicated exceedance of the NYSDEC RRSCO Guidance Value

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 6
Soil Analytical Results
Metals

RIR Results - February 2018

COMPOUND	NYSDEC Part 375.6 Unrestricted Use Soil Cleanup Objectives*	NYDEC Part 375.6 Restricted Residential Soil Cleanup Objectives*	17SB7 (2-4') 2/26/2018 mg/Kg				17SB7 (12.5-15') 2/26/2018 mg/Kg				17SB9 (2-4') 2/26/2018 mg/Kg				17SB10 (2-4') 2/26/2018 mg/Kg				Duplicate 1 17SB1 (12.5-15') 2/26/2018 mg/Kg				Duplicate 2 (17SB4) (12.5-15') 2/26/2018 mg/Kg			
			Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
Aluminum			11,700	43	-	8.5	18,500	39	-	7.8	4,470	37	-	7.4	9,380	37	-	7.4	8,890	37	-	7.4	23,300	360	-	72
Antimony			< 2.1	2.1	U	2.1	< 2.0	2.0	U	2.0	< 1.8	1.8	U	1.8	< 1.9	1.9	U	1.9	< 1.9	1.9	U	1.9	< 1.8	1.8	U	1.8
Arsenic	13	16	< 0.85	0.85	U*	0.85	5.43	0.78	*	0.78	4.69	0.74	*	0.74	4.23	0.74	-	0.74	1.08	0.74	*	0.74	0.96	0.72	*	0.72
Barium	350	350	162	0.9	N	0.43	114	0.8	N	0.39	144	0.7	N	0.37	135	0.7	-	0.37	105	0.7	N	0.37	371	0.7	N	0.36
Beryllium	7.2	14	0.34	0.34	J	0.17	0.68	0.31	-	0.16	0.32	0.30	-	0.15	0.32	0.30	-	0.15	0.31	0.30	-	0.15	0.53	0.29	-	0.14
Cadmium	2.5	2.5	< 0.43	0.43	U	0.43	< 0.39	0.39	U	0.39	0.42	0.37	-	0.37	1.12	0.37	-	0.37	< 0.37	0.37	U	0.37	< 0.36	0.36	U	0.36
Calcium			1,900	4.3	-	3.9	1,770	3.9	-	3.6	15,500	37	-	34	32,900	37	*	34	1,080	3.7	-	3.4	1,480	3.6	-	3.3
Chromium	30	180	36.2	0.43	-	0.43	28.6	0.39	-	0.39	13.5	0.37	-	0.37	27.7	0.37	-	0.37	27.6	0.37	-	0.37	52	0.36	-	0.36
Cobalt			12.3	0.43	-	0.43	10.2	0.39	-	0.39	6.61	0.37	-	0.37	13.3	0.37	*	0.37	10.3	0.37	-	0.37	21.2	0.36	-	0.36
Copper	50	270	50.3	0.43	-	0.43	24.6	0.39	-	0.39	55.1	0.37	-	0.37	116	0.37	-	0.37	23	0.37	-	0.37	60.5	0.36	-	0.36
Iron			21,000	43	*	43	21,300	39	*	39	9,920	37	*	37	35,600	37	-	37	15,500	37	*	37	41,900	36	*	36
Lead	63	400	4	0.9	-	0.43	141	0.8	-	0.39	270	7.4	-	3.7	177	7.4	-	3.7	2	0.7	-	0.37	4.6	0.7	-	0.36
Magnesium			5,720	4.3	-	4.3	3,580	3.9	-	3.9	5,910	37	-	37	15,600	37	*	37	4,390	3.7	-	3.7	9,910	36	-	36
Manganese	1,600	2,000	503	4.3	-	4.3	407	3.9	-	3.9	122	0.37	-	0.37	362	3.7	-	3.7	177	3.7	-	3.7	533	3.6	-	3.6
Mercury	0.18	0.81	< 0.03	0.03	U	0.02	0.3	0.03	-	0.02	0.23	0.15	-	0.09	0.09	0.03	-	0.02	< 0.03	0.03	U	0.02	< 0.03	0.03	U	0.02
Nickel	30	140	22.5	0.43	-	0.43	18	0.39	-	0.39	12.9	0.37	-	0.37	27.4	0.37	*	0.37	18.8	0.37	-	0.37	36.9	0.36	-	0.36
Potassium			5,930	85	N	33	1,130	8	N	3.0	1,400	7	N	2.9	5,170	74	-	29	3,760	74	N	29	12,900	72	N	28
Selenium	3.9	36	< 1.7	1.7	U	1.4	< 1.6	1.6	U	1.3	< 1.5	1.5	U	1.3	< 1.5	1.5	U	1.3	< 1.5	1.5	U	1.3	< 1.4	1.4	U	1.2
Silver	2	36	< 0.43	0.43	U	0.43	< 0.39	0.39	U	0.39	< 0.37	0.37	U	0.37	< 0.37	0.37	U	0.37	< 0.37	0.37	U	0.37	< 0.36	0.36	U	0.36
Sodium			286	9	N, *	3.7	165	8	N, *	3.4	240	7	N, *	3.2	311	7	N	3.2	193	7	N, *	3.2	415	7	N, *	3.1
Thallium			< 1.7	1.7	U	1.7	< 1.6	1.6	U	1.6	< 1.5	1.5	U	1.5	< 1.5	1.5	U	1.5	< 1.5	1.5	U	1.5	< 1.4	1.4	U	1.4
Vanadium			40.1	0.43	-	0.43	40.5	0.39	-	0.39	36.8	0.37	-	0.37	65.6	0.37	*	0.37	29.3	0.37	-	0.37	68.8	0.36	-	0.36
Zinc	109	2,200	43.6	0.9	-	0.43	128	0.8	-	0.39	227	7.4	-	3.7	137	0.7	-	0.37	32.6	0.7	-	0.37	92.2	0.7	-	0.36

Notes:

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

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 7
Groundwater Analytical Results
Volatile Organic Compounds

Compound	NYSDEC Groundwater Quality Standards	Phase II Results - May 2016										RIR Results - March 2018							
		GW1		GW2		GW3		GW4		GW5		MW1				MW2			
		5/26/2016		5/26/2016		5/26/2016		5/26/2016		5/26/2016		3/20/2018				3/15/2018			
		(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		µg/L				µg/L			
	µg/L	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results	RL	Qual	MDL	Results	RL	Qual	MDL
1,1,1,2-Tetrachlorothane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	<5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
1,1,1-Trichloroethane	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	U	0.25	< 5.0	5.0	U	1.3
1,1,2,2-Tetrachloroethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
1,1,2-Trichloroethane	1	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.5	2.5	U	0.25	< 1.0	1.0	U	1.3
1,1-Dichloroethane	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	U	0.25	< 5.0	5.0	U	1.3
1,1-Dichloroethene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
1,1-Dichloropropene		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
1,2,3-Trichlorobenzene		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 10	10	U	0.25	< 1.0	1.0	U	1.3
1,2,3-Trichloropropane	0.04	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 2.5	2.5	U	0.25	< 0.25	0.25	U	1.3
1,2,4-Trichlorobenzene		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 10	10	U	0.25	< 1.0	1.0	U	1.3
1,2,4-Trimethylbenzene	5	**0.36**	1.0	**7.5**	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	**370**	100	D	2.5	**0.89**	1.0	D	5.0
1,2-Dibromo-3-chloropropane	0.04	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.50	< 0.50	0.50	U	2.5
1,2-Dibromoethane		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 2.5	2.5	U	0.25	< 0.25	0.25	U	1.3
1,2-Dichlorobenzene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 4.7	4.7	U	0.25	< 1.0	1.0	U	1.3
1,2-Dichloroethane	0.6	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60	< 0.60	0.60	< 0.6	0.6	< 5.0	5.0	U	0.50	< 0.60	0.60	U	2.5
1,2-Dichloropropane	0.94	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.5	2.5	U	0.25	< 1.0	1.0	U	1.3
1,3,5-Trimethylbenzene	5	< 1.0	1.0	**4.4**	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	**170**	10	-	0.25	**0.77**	1.0	-	1.3
1,3-Dichlorobenzene		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 3.0	3.0	U	0.25	< 1.0	1.0	U	1.3
1,3-Dichloropropane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
1,4-Dichlorobenzene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
1,4-Dioxane		-	-	-	-	-	-	-	-	-	--	<1000	1,000	U	500	-	-	-	-
2,2-Dichloropropane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
2-Chlorotoluene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
2-Hexanone (Methyl Butyl Ketone)		< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 5.0	5.0	< 25	25	U	2.5	< 2.5	2.5	U	13
2-Isopropyltoluene	5	< 1.0	1.0	**1.1**	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	-	0.25	**1.7**	1.0	J	1.3
4-Chlorotoluene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
4-Methyl-2-Pentanone		< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 5.0	5.0	< 25	25	U	2.5	< 2.5	2.5	U	13
Acetone	50	**4.1**	5.0	**7**	5.0	**2.9**	5.0	**6.4**	5.0	**8.8**	10	< 50	50	U	2.5	< 5.0	5.0	S	13
Acrolein		< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	<25	25	U	2.5	< 5.0	5.0	U	13
Acrylonitrile	5	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	<25	25	U	2.5	< 5.0	5.0	U	13
Benzene	1	**0.28**	0.70	**19**	0.70	< 0.70	0.70	< 0.70	0.70	< 0.7	0.7	**6.8**	7.0	D	2.5	< 0.70	0.70	-	1.3
Bromobenzene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
Bromochloromethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
Bromodichloromethane		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 10	10	U	0.25	< 1.0	1.0	U	1.3
Bromoform		< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 10	10	< 50	50	U	0.25	< 5.0	5.0	U	1.3
Bromomethane	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	U	0.25	< 5.0	5.0	U	1.3
Carbon Disulfide	60	**0.3**	1.0	**0.32**	1.0	< 1.0	1.0	**0.25**	1.0	< 2.0	2.0	< 10	10	U	0.25	< 1.0	1.0	U	1.3
Carbon tetrachloride	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
Chlorobenzene	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	U	0.25	< 5.0	5.0	U	1.3
Chloroethane	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	U	0.25	< 5.0	5.0	U	1.3
Chloroform	7	< 5.0	5.0	< 5.0	5.0	**0.51**	5.0	< 5.0	5.0	< 5.0	5.0	< 7.0	7.0	U	0.25	< 5.0	5.0	U	1.3
Chloromethane	60	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	U	0.25	< 5.0	5.0	U	1.3
cis-1,2-Dichloroethene	5	**6**	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
cis-1,3-Dichloropropene		< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.4	0.4	< 2.5	2.5	U	0.25	< 0.40	0.40	U	1.3
Dibromochloromethane		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 10	10	U	0.25	< 1.0	1.0	U	1.3
Dibromomethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
Dichlorodifluoromethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
Ethylbenzene	5	< 1.0	1.0	**7.1**	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	**900**	100	D	13	**2.3**	1.0	D	5.0
Hexachlorobutadiene	0.5	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.50	0.50	< 0.5	0.5	< 2.0	2.0	U	0.20	< 0.50	0.50	U	1.0
Isopropylbenzene	5	< 1.0	1.0	**35**	10	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	**98**	10	-	0.25	**15**	1.0	-	1.3
m&p-Xylenes	5	< 1.0	1.0	**19**	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	**1,800**	100	D	2.5	**4.2**	1.0	D	5.0
Methyl Ethyl Ketone (2-Butanone)	50	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 5.0	5.0	< 25	25	U	2.5	< 2.5	2.5	U	13
Methyl t-butyl ether (MTBE)	10	**8.1**	1.0	**12**	1.0	**1.5**	1.0	< 1.0	1.0	**14**	2.0	< 10	10	J	0.25	**0.99**	1.0	U	1.3
Methylene chloride	5	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0	< 3.0	3.0	< 5.0	5.0	< 10	10	U	1.0	< 3.0	3.0	U	5.0
Naphthalene	10	< 1.0	1.0	**3.9**	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	**55**	10	D	10	< 1.0	1.0	-	5.0
n-Butylbenzene	5	< 1.0	1.0	**2**	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	**6.3**	10	-	0.25	**4.4**	1.0	-	1.3
n-Propylbenzene	5	< 1.0	1.0	**51**	10	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	**180**	10	D	2.5	**40**	5.0	-	1.3
o-Xylene	5	< 1.0	1.0	**4.7**	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	**130**	10	D	2.5	**0.46**	1.0	D	5.0
p-Isopropyltoluene		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	**3**	2.0	< 5.0	5.0	-	0.25	< 1.0	1.0	J	1.3
sec-Butylbenzene	5	< 1.0	1.0	**3.1**	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	**9.8**	10	-	0.25	**7.4**	1.0	-	1.3
Styrene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
tert-Butylbenzene	5	< 1.0	1.0	**0.27**	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	J	0.25	< 1.0	1.0	U	1.3
Tetrachloroethene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
Tetrahydrofuran (THF)		< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 5.0	5.0	< 10	10	< 50	50	U	2.5	< 5.0	5.0	-	13
Toluene	5	< 1.0	1.0	**6.4**	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	**91**	10	-	0.25	< 1.0	1.0	-	1.3
trans-1,2-Dichloroethene	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	U	0.25	< 5.0	5.0	U	1.3
trans-1,3-Dichloropropene	0.4	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.40	0.40	< 0.4	0.4	< 2.5	2.5	U	0.25	< 0.40	0.40	U	1.3
trans-1,4-dichloro-2-butene	5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 2.5	2.5	< 5.0	5.0	< 25	25	U	2.5	< 2.5	2.5	U	13
Trichloroethene	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
Trichlorofluoromethane	5	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
Trichlorotrifluoroethane		< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 5.0	5.0	U	0.25	< 1.0	1.0	U	1.3
Vinyl Chloride	2	**0.81**	1.0	< 1.0	1.0	< 1.0	1.0	< 1.0	1.0	< 2.0	2.0	< 2.5	2.5	U	0.25	< 1.0	1.0	U	1.3

Notes:
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.
S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 7
Groundwater Analytical Results
Volatile Organic Compounds

Compound	NYSDEC Groundwater Quality Standards	RIR Results - March 2018																			
		MW3 3/15/2018 µg/L				MW4 3/20/2018 µg/L				MW5 3/15/2018 µg/L				MW6 3/20/2018 µg/L				Duplicate (MW5) 3/15/2018 µg/L			
	µg/L	Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL
1,1,1,2-Tetrachlorothane	5	< 1.0	1.0	U	5.0	<1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	<5.0	5.0	U	0.25	< 1.0	1.0	U	0.25
1,1,1-Trichloroethane	5	< 5.0	5.0	U	5.0	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25
1,1,2,2-Tetrachloroethane	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
1,1,2-Trichloroethane	1	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
1,1-Dichloroethane	5	< 5.0	5.0	U	5.0	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	J	0.25
1,1-Dichloroethene	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
1,1-Dichloropropene		< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
1,2,3-Trichlorobenzene		< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
1,2,3-Trichloropropane	0.04	< 0.25	0.25	U	5.0	< 0.25	0.25	U	0.25	< 0.25	0.25	U	0.25	< 0.25	0.25	U	0.25	< 0.25	0.25	U	0.25
1,2,4-Trichlorobenzene		< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
1,2,4-Trimethylbenzene	5	< 1.0	1.0	D	13	**0.29**	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	-	0.25
1,2-Dibromo-3-chloropropane	0.04	< 0.50	0.50	U	10	< 0.50	0.50	U	0.50	< 0.50	0.50	U	0.50	< 0.50	0.50	U	0.50	< 0.50	0.50	U	0.50
1,2-Dibromoethane		< 0.25	0.25	U	5.0	< 0.25	0.25	U	0.25	< 0.25	0.25	U	0.25	< 0.25	0.25	U	0.25	< 0.25	0.25	U	0.25
1,2-Dichlorobenzene	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
1,2-Dichloroethane	0.6	< 0.60	0.60	U	10	< 0.60	0.60	U	0.50	< 0.60	0.60	U	0.50	< 0.60	0.60	U	0.50	< 0.60	0.60	U	0.50
1,2-Dichloropropane	0.94	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
1,3,5-Trimethylbenzene	5	< 1.0	1.0	-	5.0	< 1.0	1.0	J	0.25	< 1.0	1.0	J	0.25	< 1.0	1.0	J	0.25	< 1.0	1.0	U	0.25
1,3-Dichlorobenzene		< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
1,3-Dichloropropane	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
1,4-Dichlorobenzene	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
1,4-Dioxane		-	-	-	-	<100	100	U	50	-	-	-	-	<100	100	U	50	-	-	-	-
2,2-Dichloropropane	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
2-Chlorotoluene	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
2-Hexanone (Methyl Butyl Ketone)		< 2.5	2.5	U	50	< 2.5	2.5	U	2.5	< 2.5	2.5	U	2.5	< 2.5	2.5	U	2.5	< 2.5	2.5	U	2.5
2-Isopropyltoluene	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
4-Chlorotoluene	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
4-Methyl-2-Pentanone		< 2.5	2.5	U	50	< 2.5	2.5	-	2.5	< 2.5	2.5	-	2.5	< 2.5	2.5	-	2.5	< 2.5	2.5	U	2.5
Acetone	50	< 5.0	5.0	U	50	< 5.0	5.0	DS	13	< 5.0	5.0	DS	13	< 5.0	5.0	DS	13	< 5.0	5.0	JS	2.5
Acrolein		< 5.0	5.0	U	50	<5.0	5.0	U	2.5	< 5.0	5.0	U	2.5	<5.0	5.0	U	2.5	< 5.0	5.0	U	2.5
Acrylonitrile	5	< 5.0	5.0	U	50	<5.0	5.0	U	2.5	< 5.0	5.0	U	2.5	<5.0	5.0	U	2.5	< 5.0	5.0	U	2.5
Benzene	1	< 0.70	0.70	-	5.0	< 0.70	0.70	-	0.25	< 0.70	0.70	-	0.25	< 0.70	0.70	-	0.25	< 0.70	0.70	-	0.25
Bromobenzene	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
Bromochloromethane	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
Bromodichloromethane		**1.4**	1.0	U	5.0	**0.6**	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
Bromoform		< 5.0	5.0	U	5.0	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25
Bromomethane	5	< 5.0	5.0	U	5.0	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25
Carbon Disulfide	60	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
Carbon tetrachloride	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
Chlorobenzene	5	< 5.0	5.0	U	5.0	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25
Chloroethane	5	< 5.0	5.0	U	5.0	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25
Chloroform	7	**16**	5.0	U	5.0	**9.2**	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25
Chloromethane	60	< 5.0	5.0	U	5.0	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25
cis-1,2-Dichloroethene	5	< 1.0	1.0	U	5.0	< 1.0	1.0	J	0.25	< 1.0	1.0	J	0.25	< 1.0	1.0	J	0.25	< 1.0	1.0	-	0.25
cis-1,3-Dichloropropene		< 0.40	0.40	U	5.0	< 0.40	0.40	U	0.25	< 0.40	0.40	U	0.25	< 0.40	0.40	U	0.25	< 0.40	0.40	U	0.25
Dibromochloromethane		< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
Dibromomethane	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
Dichlorodifluoromethane	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
Ethylbenzene	5	< 1.0	1.0	-	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	-	0.25
Hexachlorobutadiene	0.5	< 0.50	0.50	U	4.0	< 0.50	0.50	U	0.20	< 0.50	0.50	U	0.20	< 0.50	0.50	U	0.20	< 0.50	0.50	U	0.20
Isopropylbenzene	5	< 1.0	1.0	-	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
m&p-Xylenes	5	< 1.0	1.0	-	5.0	< 1.0	1.0	J	0.25	< 1.0	1.0	J	0.25	< 1.0	1.0	J	0.25	< 1.0	1.0	-	0.25
Methyl Ethyl Ketone (2-Butanone)	50	< 2.5	2.5	U	50	< 2.5	2.5	-	2.5	< 2.5	2.5	-	2.5	< 2.5	2.5	-	2.5	< 2.5	2.5	U	2.5
Methyl t-butyl ether (MTBE)	10	< 1.0	1.0	U	5.0	< 1.0	1.0	J	0.25	**0.52**	1.0	J	0.25	< 1.0	1.0	J	0.25	**0.51**	1.0	U	0.25
Methylene chloride	5	< 3.0	3.0	U	20	< 3.0	3.0	U	1.0	< 3.0	3.0	U	1.0	< 3.0	3.0	U	1.0	< 3.0	3.0	U	1.0
Naphthalene	10	< 1.0	1.0	-	20	< 1.0	1.0	U	1.0	< 1.0	1.0	U	1.0	< 1.0	1.0	U	1.0	< 1.0	1.0	U	1.0
n-Butylbenzene	5	< 1.0	1.0	-	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
n-Propylbenzene	5	< 1.0	1.0	-	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
o-Xylene	5	< 1.0	1.0	-	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	-	0.25
p-Isopropyltoluene		< 1.0	1.0	-	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
sec-Butylbenzene	5	< 1.0	1.0	-	5.0	< 1.0	1.0	J	0.25	< 1.0	1.0	J	0.25	< 1.0	1.0	J	0.25	< 1.0	1.0	U	0.25
Styrene	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
tert-Butylbenzene	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
Tetrachloroethene	5	**0.82**	1.0	-	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
Tetrahydrofuran (THF)		< 5.0	5.0	U	50	< 5.0	5.0	U	2.5	< 5.0	5.0	U	2.5	< 5.0	5.0	U	2.5	< 5.0	5.0	U	2.5
Toluene	5	< 1.0	1.0	-	5.0	< 1.0	1.0	J	0.25	< 1.0	1.0	J	0.25	< 1.0	1.0	J	0.25	< 1.0	1.0	J	0.25
trans-1,2-Dichloroethene	5	< 5.0	5.0	U	5.0	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	U	0.25	< 5.0	5.0	J	0.25
trans-1,3-Dichloropropene	0.4	< 0.40	0.40	U	5.0	< 0.40	0.40	U	0.25	< 0.40	0.40	U	0.25	< 0.40	0.40	U	0.25	< 0.40	0.40	U	0.25
trans-1,4-dichloro-2-butene	5	< 2.5	2.5	U	50	< 2.5	2.5	U	2.5	< 2.5	2.5	U	2.5	< 2.5	2.5	U	2.5	< 2.5	2.5	U	2.5
Trichloroethene	5	< 1.0	1.0	-	5.0	< 1.0	1.0	J	0.25	< 1.0	1.0	J	0.25	< 1.0	1.0	J	0.25	< 1.0	1.0	-	0.25
Trichlorofluoromethane	5	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
Trichlorotrifluoroethane		< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25
Vinyl Chloride	2	< 1.0	1.0	U	5.0	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25	< 1.0	1.0	U	0.25

Notes:
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.
S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 8
Groundwater Analytical Results
Semi-Volatile Organic Compounds

Compound	NYSDEC Groundwater Quality Standards µg/L	RIR Results - March 2018															
		MW1 3/20/2018 µg/L				MW2 3/15/2018 µg/L				MW3 3/15/2018 µg/L				MW4 3/20/2018 µg/L			
		Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL
1,2,4,5-Tetrachlorobenzene		< 5.2	5.2	U	1.8	<0.53	0.53	U	1.8	<0.47	0.47	U	9.3	<0.50	0.50	U	38
1,2,4-Trichlorobenzene		< 5.2	5.2	U	1.5	< 5.3	5.3	U	1.5	< 4.7	4.7	U	7.9	< 110	110	U	33
1,2-Dichlorobenzene		< 4.7	4.7	U	1.4	< 1.1	1.1	U	1.4	< 0.94	0.94	U	7.4	< 30	30	U	30
1,2-Diphenylhydrazine		< 5.2	5.2	U	1.6	< 5.3	5.3	U	1.6	< 4.7	4.7	U	8.6	< 110	110	U	35
1,3-Dichlorobenzene	3	< 3.0	3.0	U	1.5	< 1.1	1.1	U	1.5	< 0.94	0.94	U	7.8	< 32	32	U	32
1,4-Dichlorobenzene		< 5.0	5.0	U	1.5	< 1.1	1.1	U	1.5	< 0.94	0.94	U	7.8	< 32	32	U	32
2,4,5-Trichlorophenol	1	< 2.8	2.8	U	2.7	< 1.0	1.0	U	2.7	< 0.94	0.94	U	14	< 59	59	U	59
2,4,6-Trichlorophenol	1	< 1.6	1.6	U	1.6	< 1.0	1.0	U	1.6	< 0.94	0.94	U	8.4	< 35	35	U	35
2,4-Dichlorophenol		< 1.8	1.8	U	1.8	< 1.0	1.0	U	1.8	< 0.94	0.94	U	9.3	< 38	38	U	38
2,4-Dimethylphenol		**8.5**	5.2	-	1.2	< 1.0	1.0	-	1.2	< 0.94	0.94	U	6.5	< 27	27	U	27
2,4-Dinitrophenol	5	< 3.6	3.6	U	3.5	< 1.0	1.0	U	3.5	< 0.94	0.94	U	18	< 76	76	U	76
2,4-Dinitrotoluene	5	< 5.0	5.0	U	2.0	< 5.0	5.0	U	2.0	< 4.7	4.7	U	10	< 43	43	U	43
2,6-Dinitrotoluene	5	< 5.0	5.0	U	1.6	< 5.0	5.0	U	1.6	< 4.7	4.7	U	8.3	< 34	34	U	34
2-Chloronaphthalene	10	< 5.2	5.2	U	1.4	< 5.3	5.3	U	1.4	< 4.7	4.7	U	7.5	< 31	31	U	31
2-Chlorophenol	1	< 1.5	1.5	U	1.4	< 1.0	1.0	U	1.4	< 0.94	0.94	U	7.5	< 31	31	U	31
2-Methylnaphthalene		**1.8**	5.2	J	1.5	< 5.3	5.3	J	1.5	< 4.7	4.7	J	7.8	< 50	50	U	32
2-Methylphenol (o-cresol)	1	< 2.4	2.4	U	2.4	< 1.0	1.0	U	2.4	< 0.94	0.94	U	12	< 51	51	U	51
2-Nitroaniline	5	< 5.2	5.2	U	5.1	< 5.0	5.0	U	5.1	< 4.7	4.7	U	27	< 110	110	U	110
2-Nitrophenol	1	< 3.3	3.3	U	3.2	< 1.0	1.0	U	3.2	< 0.94	0.94	U	17	< 69	69	U	69
3&4-Methylphenol (m&p-cresol)		< 5.2	5.2	U	2.0	< 1.1	1.1	U	2.0	< 0.94	0.94	U	10	< 110	110	U	43
3,3'-Dichlorobenzidine	5	< 5.0	5.0	U	2.4	< 5.0	5.0	U	2.4	< 4.7	4.7	U	12	< 51	51	U	51
3-Nitroaniline	5	< 11	11	U	11	< 5.0	5.0	U	11	< 4.7	4.7	U	57	< 240	240	U	240
4,6-Dinitro-2-methylphenol	1	< 5.5	5.5	U	5.4	< 1.0	1.0	U	5.4	< 0.94	0.94	U	28	< 120	120	U	120
4-Bromophenyl phenyl ether		< 5.2	5.2	U	1.5	< 5.3	5.3	U	1.5	< 4.7	4.7	U	7.7	< 110	110	U	32
4-Chloro-3-methylphenol	1	< 1.8	1.8	U	1.8	< 1.0	1.0	U	1.8	< 0.94	0.94	U	9.3	< 38	38	U	38
4-Chloroaniline	5	< 5.0	5.0	U	2.3	< 3.7	3.7	U	2.3	< 3.3	3.3	U	12	< 50	50	U	50
4-Chlorophenyl phenyl ether		< 5.2	5.2	U	1.7	< 5.3	5.3	U	1.7	< 4.7	4.7	U	8.8	< 110	110	U	36
4-Nitroaniline	5	< 5.0	5.0	U	1.7	< 5.0	5.0	U	1.7	< 4.7	4.7	U	8.8	< 36	36	U	36
4-Nitrophenol		< 2.3	2.3	U	2.3	< 1.0	1.0	U	2.3	< 0.94	0.94	U	12	< 49	49	U	49
Acenaphthene	20	< 5.2	5.2	U	1.5	< 5.3	5.3	U	1.5	< 4.7	4.7	U	8.0	< 33	33	U	33
Acenaphthylene		< 5.2	5.2	U	1.4	<0.11	0.11	U	1.4	<0.099	0.09	U	7.4	<0.10	0.10	U	30
Acetophenone		< 5.2	5.2	U	1.6	< 5.3	5.3	U	1.6	< 4.7	4.7	U	8.2	< 110	110	U	34
Aniline	5	< 15	15	U	15	< 3.7	3.7	U	15	< 3.3	3.3	U	79	< 320	320	U	320
Anthracene	50	< 5.2	5.2	U	1.6	< 5.3	5.3	U	1.6	< 4.7	4.7	U	8.6	< 50	50	U	35
Benz(a)anthracene	0.002	< 1.7	1.7	U	1.7	**0.08**	0.02	U	1.7	**0.08**	0.02	U	8.8	**0.16**	0.02	U	36
Benzidine	5	< 5.0	5.0	U	2.9	<4.8	4.8	U	2.9	<4.2	4.2	U	15	< 64	64	U	64
Benzo(a)pyrene		< 1.7	1.7	U	1.6	**0.07**	0.02	U	1.6	**0.08**	0.02	U	8.6	**0.16**	0.02	U	35
Benzo(b)fluoranthene	0.002	< 1.8	1.8	U	1.7	**0.07**	0.02	U	1.7	**0.1**	0.02	U	9.0	**0.15**	0.02	U	37
Benzo(ghi)perylene		< 5.0	5.0	U	1.6	**0.04**	0.02	U	1.6	**0.06**	0.02	U	8.5	**0.13**	0.02	U	35
Benzo(k)fluoranthene	0.002	< 1.7	1.7	U	1.7	**0.07**	0.02	U	1.7	**0.09**	0.02	U	8.7	**0.14**	0.02	U	36
Benzoic acid		< 26	26	U	10	< 27	<27	U	10	< 23	23	U	53	**360**	220	-	220
Benzyl butyl phthalate	50	< 5.2	5.2	U	1.3	< 5.3	5.3	U	1.3	< 4.7	4.7	U	6.8	< 50	50	U	28
Bis(2-chloroethoxy)methane	5	< 5.0	5.0	U	1.4	< 5.0	5.0	U	1.4	< 4.7	4.7	U	7.3	< 30	30	U	30
Bis(2-chloroethyl)ether	1	< 1.4	1.4	U	1.4	< 1.0	1.0	U	1.4	< 0.94	0.94	U	7.1	< 29	29	U	29
Bis(2-chloroisopropyl)ether		< 5.2	5.2	U	1.4	< 5.3	5.3	U	1.4	< 4.7	4.7	U	7.3	< 110	110	U	30
Bis(2-ethylhexyl)phthalate	5	< 5.0	5.0	U	1.4	<1.1	1.1	U	1.4	<0.94	0.94	U	7.6	<1.0	1.0	U	31
Carbazole		< 26	26	U	3.8	<5.3	5.3	U	3.8	<4.7	4.7	U	20	< 540	540	U	82
Chrysene	0.002	< 1.7	1.7	U	1.7	**0.07**	0.02	U	1.7	**0.09**	0.02	U	8.8	**0.16**	0.02	U	36
Dibenz(a,h)anthracene		< 5.2	5.2	U	1.6	<0.02	0.02	U	1.6	**0.02**	0.02	U	8.5	**0.04**	0.02	U	35
Dibenzofuran		< 5.0	5.0	U	1.5	< 5.0	5.0	U	1.5	< 4.7	4.7	U	7.7	< 32	32	U	32
Diethyl phthalate	50	< 5.2	5.2	U	1.6	< 5.3	5.3	U	1.6	**5.5**	4.7	U	8.3	< 50	50	U	34
Dimethylphthalate	50	< 5.2	5.2	U	1.6	< 5.3	5.3	U	1.6	< 4.7	4.7	U	8.2	< 50	50	U	34
Di-n-butylphthalate	50	< 5.2	5.2	U	1.3	< 5.3	5.3	U	1.3	< 4.7	4.7	U	7.0	< 50	50	U	29
Di-n-octylphthalate	50	< 5.2	5.2	U	1.3	< 5.3	5.3	U	1.3	< 4.7	4.7	U	6.8	< 50	50	U	28
Fluoranthene	50	< 5.2	5.2	U	1.6	< 5.3	5.3	U	1.6	< 4.7	4.7	U	8.5	< 50	50	U	35
Fluorene	50	< 5.2	5.2	U	1.7	< 5.3	5.3	U	1.7	< 4.7	4.7	U	8.7	< 50	50	U	36
Hexachlorobenzene	0.04	< 1.5	1.5	U	1.5	< 0.02	0.02	U	1.5	< 0.02	0.02	U	7.7	<0.02	0.02	U	32
Hexachlorobutadiene	0.5	< 1.9	1.9	U	1.8	< 0.43	0.43	U	1.8	< 0.38	0.38	U	9.5	<0.40	0.40	U	39
Hexachlorocyclopentadiene	5	< 5.0	5.0	U	1.5	< 5.0	5.0	U	1.5	<4.7	4.7	U	8.1	< 33	33	U	33
Hexachloroethane	5	< 5.0	5.0	U	1.5	< 0.53	0.53	U	1.5	< 0.47	0.47	U	7.9	<0.50	0.50	U	32
Indeno(1,2,3-cd)pyrene	0.002	< 1.7	1.7	U	1.7	**0.04**	0.02	U	1.7	**0.05**	0.02	U	8.7	**0.12**	0.02	U	36
Isophorone	50	< 5.2	5.2	U	1.4	< 5.3	5.3	U	1.4	< 4.7	4.7	U	7.4	< 50	50	U	30
Naphthalene	10	**38**	5.2	-	1.4	< 5.0	5.0	-	1.4	< 4.7	4.7	-	7.6	< 31	31	U	31
Nitrobenzene	0.4	< 1.8	1.8	U	1.8	<0.11	0.11	U	1.8	<0.09	0.09	U	9.2	<0.10	0.10	U	38
N-Nitrosodimethylamine		< 5.2	5.2	U	1.4	<0.11	0.11	U	1.4	<0.09	0.09	U	7.4	<0.10	0.10	U	30
N-Nitrosodi-n-propylamine		< 5.2	5.2	U	1.6	< 5.3	5.3	U	1.6	< 4.7	4.7	U	8.5	< 110	110	U	35
N-Nitrosodiphenylamine	50	< 5.2	5.2	U	1.9	< 5.3	5.3	U	1.9	< 4.7	4.7	U	10	< 50	50	U	42
Pentachloronitrobenzene		< 5.2	5.2	U	1.9	<0.11	0.11	U	1.9	<0.09	0.09	U	9.8	<0.10	0.10	U	40
Pentachlorophenol	1	< 1.9	1.9	U	1.9	<0.11	0.11	U	1.9	<0.09	0.09	U	9.9	<0.10	0.10	U	41
Phenanthrene	50	< 5.2	5.2	U	1.4	<0.11	0.11	U	1.4	<0.09	0.09	U	7.5	**0.19**	0.10	U	31
Phenol	50	< 1.6	1.6	U	1.6	< 1.0	1.0	U	1.6	< 0.94	0.94	U	8.4	< 35	35	U	35
Pyrene	50	< 5.2	5.2	U	1.7	< 5.3	5.3	U	1.7	< 4.7	4.7	U	9.1	< 50	50	U	37
Pyridine	50	< 5.2	5.2	U	1.2	< 11	11	U	1.2	< 9.4	9.4	U	6.5	< 50	50	U	27

Notes:

RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.
S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 8
Groundwater Analytical Results
Semi-Volatile Organic Compounds

Compound	NYSDEC Groundwater Quality Standards µg/L	RIR Results - March 2018											
		MW5 3/15/2018 µg/L				MW6 3/20/2018 µg/L				Duplicate (MW5) 3/15/2018 µg/L			
		Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL
1,2,4,5-Tetrachlorobenzene		<0.47	0.47	U	0.50	<0.5	0.51	U	35	<0.47	0.47	U	0.50
1,2,4-Trichlorobenzene		< 4.7	4.7	U	1.5	< 5.1	5.0	U	30	< 4.7	4.7	U	1.5
1,2-Dichlorobenzene		< 0.94	0.94	U	1.0	< 1.0	1.0	U	28	< 0.94	0.94	U	1.0
1,2-Diphenylhydrazine		< 4.7	4.7	U	1.6	< 5.1	5.1	U	33	< 4.7	4.7	U	1.6
1,3-Dichlorobenzene	3	< 0.94	0.94	U	1.0	< 1.0	1.0	U	30	< 0.94	0.94	U	1.0
1,4-Dichlorobenzene		< 0.94	0.94	U	1.0	< 1.0	1.0	U	30	< 0.94	0.94	U	1.0
2,4,5-Trichlorophenol	1	< 0.94	0.94	U	1.0	< 1.0	1.0	U	55	< 0.94	0.94	U	1.0
2,4,6-Trichlorophenol	1	< 0.94	0.94	U	1.0	< 1.0	1.0	U	32	< 0.94	0.94	U	1.0
2,4-Dichlorophenol		< 0.94	0.94	U	1.0	< 1.0	1.0	U	35	< 0.94	0.94	U	1.0
2,4-Dimethylphenol		< 0.94	0.94	U	1.0	< 1.0	1.0	U	25	< 0.94	0.94	U	1.0
2,4-Dinitrophenol	5	< 0.94	0.94	U	1.0	< 1.0	1.0	U	70	< 0.94	0.94	U	1.0
2,4-Dinitrotoluene	5	< 4.7	4.7	U	2.0	< 5.0	5.0	U	39	< 4.7	4.7	U	2.0
2,6-Dinitrotoluene	5	< 4.7	4.7	U	1.6	< 5.0	5.0	U	32	< 4.7	4.7	U	1.6
2-Chloronaphthalene	10	< 4.7	4.7	U	1.4	< 5.1	5.1	U	28	< 4.7	4.7	U	1.4
2-Chlorophenol	1	< 0.94	0.94	U	1.0	< 1.0	1.0	U	28	< 0.94	0.94	U	1.0
2-Methylnaphthalene		< 4.7	4.7	U	1.5	< 5.1	5.1	U	30	< 4.7	4.7	U	1.5
2-Methylphenol (o-cresol)	1	< 0.94	0.94	U	1.0	< 1.0	1.0	U	47	< 0.94	0.94	U	1.0
2-Nitroaniline	5	< 4.7	4.7	U	2.0	< 5.0	5.0	U	100	< 4.7	4.7	U	2.0
2-Nitrophenol	1	< 0.94	0.94	U	1.0	< 1.0	1.0	U	63	< 0.94	0.94	U	1.0
3&4-Methylphenol (m&p-cresol)		< 0.94	0.94	U	1.0	< 1.0	1.0	-	39	< 0.94	0.94	U	1.0
3,3'-Dichlorobenzidine	5	< 4.7	4.7	U	2.4	< 5.0	5.0	U	47	< 4.7	4.7	U	2.4
3-Nitroaniline	5	< 4.7	4.7	U	2.0	< 5.0	5.0	U	220	< 4.7	4.7	U	2.0
4,6-Dinitro-2-methylphenol	1	< 0.94	0.94	U	1.0	< 1.0	1.0	U	110	< 0.94	0.94	U	1.0
4-Bromophenyl phenyl ether		< 4.7	4.7	U	1.5	< 5.1	5.1	U	29	< 4.7	4.7	U	1.5
4-Chloro-3-methylphenol	1	< 0.94	0.94	U	1.0	< 1.0	1.0	U	35	< 0.94	0.94	U	1.0
4-Chloroaniline	5	< 3.3	3.3	U	2.3	< 3.6	3.6	U	47	< 3.3	3.3	U	2.3
4-Chlorophenyl phenyl ether		< 4.7	4.7	U	1.7	< 5.1	5.1	U	34	< 4.7	4.7	U	1.7
4-Nitroaniline	5	< 4.7	4.7	U	1.7	< 5.0	5.0	U	33	< 4.7	4.7	U	1.7
4-Nitrophenol		< 0.94	0.94	U	1.0	< 1.0	1.0	U	45	< 0.94	0.94	U	1.0
Acenaphthene	20	< 4.7	4.7	U	1.5	< 5.1	5.1	U	30	< 4.7	4.7	U	1.5
Acenaphthylene		<0.47	0.47	U	0.10	<0.10	0.10	U	28	<0.47	0.47	U	0.10
Acetophenone		< 4.7	4.7	U	1.6	< 5.1	5.1	U	31	< 4.7	4.7	U	1.6
Aniline	5	< 3.3	3.3	U	5.0	< 3.6	3.6	U	300	< 3.3	3.3	U	5.0
Anthracene	50	< 4.7	4.7	U	1.6	< 5.1	5.1	U	33	< 4.7	4.7	U	1.6
Benz(a)anthracene	0.002	<0.02	0.02	U	0.02	<0.02	0.02	U	34	<0.02	0.02	U	0.02
Benzidine	5	<4.2	4.2	U	2.9	< 4.6	4.6	U	59	<4.2	4.2	U	2.9
Benzo(a)pyrene		< 0.02	0.02	U	0.02	<0.02	0.02	U	33	**0.02**	0.02	U	0.02
Benzo(b)fluoranthene	0.002	**0.02**	0.02	U	0.02	**0.02**	0.02	U	34	**0.02**	0.02	U	0.02
Benzo(ghi)perylene		< 0.02	0.02	U	0.02	**0.02**	0.02	U	32	< 0.02	0.02	U	0.02
Benzo(k)fluoranthene	0.002	< 0.02	0.02	U	0.02	<0.02	0.02	U	33	**0.02**	0.02	U	0.02
Benzoic acid		< 23	23	U	10	< 26	26	D	2000	< 23	23	U	10
Benzyl butyl phthalate	50	< 4.7	4.7	U	1.3	< 5.1	5.0	U	26	< 4.7	4.7	U	1.3
Bis(2-chloroethoxy)methane	5	< 4.7	4.7	U	1.4	< 5.0	5.0	U	28	< 4.7	4.7	U	1.4
Bis(2-chloroethyl)ether	1	< 0.94	0.94	U	1.0	< 1.0	1.0	U	27	< 0.94	0.94	U	1.0
Bis(2-chloroisopropyl)ether		< 4.7	4.7	U	1.4	< 5.1	5.1	U	28	< 4.7	4.7	U	1.4
Bis(2-ethylhexyl)phthalate	5	<0.94	0.94	U	1.0	<1.0	1.0	U	29	<0.94	0.94	U	1.0
Carbazole		<4.7	4.7	U	3.8	<5.1	5.1	U	76	<4.7	4.7	U	3.8
Chrysene	0.002	<0.02	0.02	U	0.02	<0.02	0.02	U	34	<0.02	0.02	U	0.02
Dibenz(a,h)anthracene		<0.02	0.02	U	0.02	<0.02	0.02	U	32	<0.02	0.02	U	0.02
Dibenzofuran		< 4.7	4.7	U	1.5	< 5.0	5.0	U	29	< 4.7	4.7	U	1.5
Diethyl phthalate	50	< 4.7	4.7	U	1.6	< 5.1	5.1	U	32	< 4.7	4.7	U	1.6
Dimethylphthalate	50	< 4.7	4.7	U	1.6	< 5.1	5.1	U	31	< 4.7	4.7	U	1.6
Di-n-butylphthalate	50	< 4.7	4.7	U	1.3	< 5.1	5.1	U	27	< 4.7	4.7	U	1.3
Di-n-octylphthalate	50	< 4.7	4.7	U	1.3	< 5.1	5.1	U	26	< 4.7	4.7	U	1.3
Fluoranthene	50	< 4.7	4.7	U	1.6	< 5.1	5.1	U	32	< 4.7	4.7	U	1.6
Fluorene	50	< 4.7	4.7	U	1.7	< 5.1	5.1	U	33	< 4.7	4.7	U	1.7
Hexachlorobenzene	0.04	< 0.02	0.02	U	0.02	<0.02	0.02	U	29	< 0.02	0.02	U	0.02
Hexachlorobutadiene	0.5	< 0.38	0.38	U	0.40	<0.41	0.41	U	36	< 0.38	0.38	U	0.40
Hexachlorocyclopentadiene	5	<4.7	4.7	U	1.5	<5.0	5.0	U	31	<4.7	4.7	U	1.5
Hexachloroethane	5	< 0.47	0.47	U	0.50	<0.5	0.50	U	30	< 0.47	0.47	U	0.50
Indeno(1,2,3-cd)pyrene	0.002	< 0.02	0.02	U	0.02	<0.02	0.02	U	33	< 0.02	0.02	U	0.02
Isophorone	50	< 4.7	4.7	U	1.4	<5.1	5.1	U	28	< 4.7	4.7	U	1.4
Naphthalene	10	< 4.7	4.7	U	1.4	<5.0	5.0	-	29	< 4.7	4.7	U	1.4
Nitrobenzene	0.4	< 0.09	0.09	U	0.10	<0.10	0.10	U	35	< 0.09	0.09	U	0.10
N-Nitrosodimethylamine		< 0.09	0.09	U	0.10	<0.10	0.10	U	28	< 0.09	0.09	U	0.10
N-Nitrosodi-n-propylamine		< 4.7	4.7	U	1.6	<5.1	5.1	U	32	< 4.7	4.7	U	1.6
N-Nitrosodiphenylamine	50	< 4.7	4.7	U	1.9	<5.1	5.1	U	38	< 4.7	4.7	U	1.9
Pentachloronitrobenzene		< 0.09	0.09	U	0.10	<0.10	0.10	U	37	< 0.09	0.09	U	0.10
Pentachlorophenol	1	< 0.09	0.09	U	0.80	<0.10	0.10	U	38	< 0.09	0.09	U	0.80
Phenanthrene	50	< 0.09	0.09	U	0.10	<0.11	0.10	U	29	< 0.09	0.09	U	0.10
Phenol	50	< 0.94	0.94	U	1.0	<1.0	1.0	U	32	< 0.94	0.94	U	1.0
Pyrene	50	< 4.7	4.7	U	1.7	<5.1	5.1	U	34	< 4.7	4.7	U	1.7
Pyridine	50	< 9.4	9.4	U	1.2	<10	10	U	25	< 9.4	9.4	U	1.2

Notes:
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.
S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 9
Groundwater Analytical Results
Pesticides and PCBs

	Compound	NYSDEC Groundwater Quality Standards µg/L	RIR Results - March 2018															
			MW1 3/20/2018 µg/L				MW2 3/15/2018 µg/L				MW3 3/15/2018 µg/L				MW4 3/20/2018 µg/L			
			Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL
PCBs	PCB-1016	0.09	< 0.052	0.052	U	0.050	< 0.051	0.051	U	0.050	< 0.047	0.047	U	0.055	< 0.049	0.049	U	0.050
	PCB-1221	0.09	< 0.052	0.052	U	0.050	< 0.051	0.051	U	0.050	< 0.047	0.047	U	0.055	< 0.049	0.049	U	0.050
	PCB-1232	0.09	< 0.052	0.052	U	0.050	< 0.051	0.051	U	0.050	< 0.047	0.047	U	0.055	< 0.049	0.049	U	0.050
	PCB-1242	0.09	< 0.052	0.052	U	0.050	< 0.051	0.051	U	0.050	< 0.047	0.047	U	0.055	< 0.049	0.049	U	0.050
	PCB-1248	0.09	< 0.052	0.052	U	0.050	< 0.051	0.051	U	0.050	< 0.047	0.047	U	0.055	< 0.049	0.049	U	0.050
	PCB-1254	0.09	< 0.052	0.052	U	0.050	< 0.051	0.051	U	0.050	< 0.047	0.047	U	0.055	< 0.049	0.049	U	0.050
	PCB-1260	0.09	< 0.052	0.052	U	0.050	< 0.051	0.051	U	0.050	< 0.047	0.047	U	0.055	< 0.049	0.049	U	0.050
	PCB-1262	0.09	< 0.052	0.052	U	0.050	< 0.051	0.051	U	0.050	< 0.047	0.047	U	0.055	< 0.049	0.049	U	0.050
	PCB-1268	0.09	< 0.052	0.052	U	0.050	< 0.051	0.051	U	0.050	< 0.047	0.047	U	0.055	< 0.049	0.049	U	0.050
Pesticides	4,4-DDD	0.3	< 0.005	0.005	U	0.025	< 0.005	0.005	U	0.010	< 0.005	0.005	U	0.011	< 0.005	0.005	U	0.010
	4,4-DDE	0.2	< 0.005	0.005	U	0.025	< 0.005	0.005	U	0.010	< 0.005	0.005	U	0.011	< 0.005	0.005	U	0.010
	4,4-DDT	0.11	< 0.005	0.005	U	0.025	< 0.005	0.005	U	0.010	< 0.005	0.005	U	0.011	< 0.005	0.005	U	0.010
	a-BHC	0.94	< 0.005	0.005	U	0.025	< 0.005	0.005	U	0.005	< 0.005	0.005	U	0.010	< 0.005	0.005	U	0.005
	a-Chlordane		< 0.010	0.010	U	0.10	< 0.010	0.010	U	0.010	< 0.010	0.010	U	0.011	< 0.015	0.015	U	0.010
	Alachlor		< 0.078	0.078	U	0.75	< 0.077	0.077	U	0.075	< 0.071	0.071	U	0.082	< 0.073	0.073	U	0.075
	Aldrin		< 0.002	0.002	U	0.015	< 0.002	0.002	U	0.002	< 0.001	0.001	U	0.002	< 0.005	0.005	U	0.010
	b-BHC	0.04	< 0.005	0.005	U	0.050	< 0.005	0.005	U	0.040	< 0.005	0.005	U	0.030	< 0.005	0.005	U	0.005
	Chlordane	0.05	< 0.050	0.050	U	0.50	< 0.050	0.050	U	0.050	< 0.047	0.047	U	0.055	< 0.049	0.049	U	0.050
	d-BHC	0.04	< 0.010	0.010	U	0.025	< 0.005	0.005	U	0.005	< 0.005	0.005	U	0.006	< 0.005	0.005	U	0.005
	Dieldrin	0.004	< 0.002	0.002	U	0.015	< 0.002	0.002	U	0.002	< 0.001	0.001	U	0.002	< 0.002	0.002	U	0.002
	Endosulfan I		< 0.010	0.010	U	0.10	< 0.010	0.010	U	0.010	< 0.010	0.010	U	0.011	< 0.010	0.010	U	0.010
	Endosulfan II		< 0.010	0.010	U	0.10	< 0.010	0.010	U	0.010	< 0.010	0.010	U	0.011	< 0.015	0.015	U	0.010
	Endosulfan Sulfate		< 0.010	0.010	U	0.10	< 0.010	0.010	U	0.010	< 0.010	0.010	U	0.011	< 0.015	0.015	U	0.010
	Endrin		< 0.007	0.007	U	0.050	< 0.003	0.003	U	0.010	< 0.010	0.010	U	0.006	< 0.010	0.010	U	0.010
	Endrin aldehyde	5	< 0.010	0.010	U	0.10	< 0.010	0.010	U	0.010	< 0.010	0.010	U	0.011	< 0.010	0.010	U	0.010
	Endrin ketone		< 0.010	0.010	U	0.10	< 0.010	0.010	U	0.010	< 0.010	0.010	U	0.011	< 0.010	0.010	U	0.010
	gamma-BHC	0.05	< 0.010	0.010	U	0.050	< 0.005	0.005	U	0.005	< 0.005	0.005	U	0.006	< 0.005	0.005	U	0.005
	g-Chlordane		< 0.010	0.010	U	0.10	< 0.010	0.010	U	0.010	< 0.010	0.010	U	0.011	< 0.010	0.010	U	0.010
	Heptachlor	0.04	< 0.005	0.005	U	0.050	< 0.003	0.003	U	0.010	< 0.010	0.010	U	0.006	< 0.010	0.010	U	0.010
	Heptachlor epoxide	0.03	< 0.005	0.005	U	0.050	< 0.003	0.003	U	0.010	< 0.010	0.010	U	0.006	< 0.015	0.015	U	0.010
	Methoxychlor	35	< 0.10	0.10	U	1.0	< 0.10	0.10	U	0.10	< 0.095	0.095	U	0.11	< 0.097	0.097	U	0.10
	Toxaphene		< 0.21	0.21	U	2.0	< 0.20	0.20	U	0.20	< 0.19	0.19	U	0.22	< 0.19	0.19	U	0.20

Notes:
RL- Reporting Limit
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.
S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.
Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 9
Groundwater Analytical Results
Pesticides and PCBs

	Compound	NYSDEC Groundwater Quality Standards µg/L	RIR Results - March 2018											
			MW5 3/15/2018 µg/L				MW6 3/20/2018 µg/L				Duplicate (MW5) 3/15/2018 µg/L			
			Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL
PCBs	**PCB-1016**	**0.09**	< 0.047	0.047	U	0.052	< 0.090	0.090	U	0.050	< 0.047	0.047	U	0.050
	PCB-1221	**0.09**	< 0.047	0.047	U	0.052	< 0.090	0.090	U	0.050	< 0.047	0.047	U	0.050
	PCB-1232	**0.09**	< 0.047	0.047	U	0.052	< 0.090	0.090	U	0.050	< 0.047	0.047	U	0.050
	PCB-1242	**0.09**	< 0.047	0.047	U	0.052	< 0.090	0.090	U	0.050	< 0.047	0.047	U	0.050
	PCB-1248	**0.09**	< 0.047	0.047	U	0.052	< 0.090	0.090	U	0.050	< 0.047	0.047	U	0.050
	PCB-1254	**0.09**	< 0.047	0.047	U	0.052	< 0.090	0.090	U	0.050	< 0.047	0.047	U	0.050
	PCB-1260	**0.09**	< 0.047	0.047	U	0.052	< 0.090	0.090	U	0.050	< 0.047	0.047	U	0.050
	PCB-1262	**0.09**	< 0.047	0.047	U	0.052	< 0.090	0.090	U	0.050	< 0.047	0.047	U	0.050
	PCB-1268	**0.09**	< 0.047	0.047	U	0.052	< 0.090	0.090	U	0.050	< 0.047	0.047	U	0.050
Pesticides	**4,4-DDD**	**0.3**	< 0.005	0.005	U	0.010	< 0.010	0.010	U	0.025	< 0.005	0.005	U	0.010
	4,4-DDE	**0.2**	< 0.005	0.005	U	0.010	< 0.005	0.005	U	0.025	< 0.005	0.005	U	0.010
	4,4-DDT	**0.11**	< 0.005	0.005	U	0.010	< 0.010	0.010	U	0.025	< 0.005	0.005	U	0.010
	a-BHC	**0.94**	< 0.005	0.005	U	0.005	< 0.005	0.005	U	0.025	< 0.005	0.005	U	0.005
	a-Chlordane		< 0.009	0.009	U	0.010	< 0.010	0.010	U	0.10	< 0.009	0.009	U	0.010
	Alachlor		< 0.070	0.070	U	0.077	< 0.073	0.073	U	0.050	< 0.070	0.070	U	0.075
	Aldrin		< 0.001	0.001	U	0.002	< 0.002	0.002	U	0.020	< 0.001	0.001	U	0.002
	b-BHC	**0.04**	< 0.005	0.005	U	0.005	< 0.005	0.005	U	0.025	< 0.005	0.005	U	0.040
	Chlordane	**0.05**	< 0.047	0.047	U	0.052	< 0.049	0.049	U	0.50	< 0.047	0.047	U	0.050
	d-BHC	**0.04**	< 0.005	0.005	U	0.005	< 0.005	0.005	U	0.025	< 0.005	0.005	U	0.005
	Dieldrin	**0.004**	< 0.001	0.001	U	0.002	< 0.003	0.003	U	0.015	< 0.001	0.001	U	0.002
	Endosulfan I		< 0.009	0.009	U	0.010	< 0.010	0.010	U	0.10	< 0.009	0.009	U	0.010
	Endosulfan II		< 0.009	0.009	U	0.010	< 0.010	0.010	U	0.050	< 0.009	0.009	U	0.010
	Endosulfan Sulfate		< 0.009	0.009	U	0.010	< 0.010	0.010	U	0.10	< 0.009	0.009	U	0.010
	Endrin		< 0.009	0.009	U	0.005	< 0.010	0.010	U	0.050	< 0.009	0.009	U	0.010
	Endrin aldehyde	**5**	< 0.009	0.009	U	0.010	< 0.010	0.010	U	0.20	< 0.009	0.009	U	0.010
	Endrin ketone		< 0.009	0.009	U	0.010	< 0.010	0.010	U	0.10	< 0.009	0.009	U	0.010
	gamma-BHC	**0.05**	< 0.005	0.005	U	0.005	< 0.005	0.005	U	0.050	< 0.005	0.005	U	0.005
	g-Chlordane		< 0.009	0.009	U	0.010	< 0.010	0.010	U	0.10	< 0.009	0.009	U	0.010
	Heptachlor	**0.04**	< 0.009	0.009	U	0.005	< 0.010	0.010	U	0.050	< 0.009	0.009	U	0.010
	Heptachlor epoxide	**0.03**	< 0.009	0.009	U	0.005	< 0.010	0.010	U	0.050	< 0.009	0.009	U	0.010
	Methoxychlor	**35**	< 0.094	0.094	U	0.10	< 0.098	0.098	U	1.0	< 0.094	0.094	U	0.10
	Toxaphene		< 0.19	0.19	U	0.21	< 0.20	0.20	U	2.0	< 0.19	0.19	U	0.20

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Bold/highlighted- Indicated exceedance of the NYSDEC Groundwater Standard

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 10
Groundwater Analytical Results
Total Metals

Compound	NYSDEC Groundwater Quality Standards mg/L	RIR Results - March 2018															
		MW1 3/20/2018 mg/L				MW2 3/15/2018 mg/L				MW3 3/15/2018 mg/L				MW4 3/20/2018 mg/L			
		Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL
Aluminum	NS	**14.9**	0.010	-	0.005	**4.24**	0.010	-	0.005	**26.5**	0.010	-	0.005	**12.5**	0.010	-	0.050
Antimony	0.003	< 0.003	0.003	U	0.002	<0.003	0.004	U	0.002	<0.003	0.003	U	0.002	0.003	0.003	U	0.002
Arsenic	0.025	< 0.004	0.004	-	0.004	**0.005**	0.004	U	0.004	**0.005**	0.004	U	0.004	**0.006**	0.004	-	0.004
Barium	1	**0.21**	0.010	-	0.001	**0.184**	0.010	-	0.001	**0.357**	0.010	-	0.001	**0.208**	0.010	-	0.001
Beryllium	0.003	< 0.001	0.001	-	0.001	< 0.001	0.001	U	0.001	**0.001**	0.001	U	0.001	< 0.001	0.001	-	0.001
Cadmium	0.005	**0.001**	0.004	B	0.0005	< 0.004	0.004	B	0.0005	**0.001**	0.010	B	0.0005	< 0.004	0.004	B	0.0005
Calcium	NS	**137**	0.010	-	0.01	**108**	0.010	-	0.01	**24.9**	0.001	-	0.01	**48.4**	0.010	-	0.01
Chromium	0.05	**0.035**	0.001	-	0.001	**0.008**	0.001	-	0.001	**0.061**	0.001	-	0.001	**0.022**	0.001	-	0.001
Cobalt	NS	**0.017**	0.005	-	0.001	**0.003**	0.005	B	0.001	**0.012**	0.005	-	0.001	**0.01**	0.005	-	0.001
Copper	0.2	**0.057**	0.005	-	0.001	**0.014**	0.005	-	0.001	**0.102**	0.005	-	0.001	**0.597**	0.005	-	0.001
Iron	0.5	**47.4**	0.01	-	0.01	**27.3**	0.01	-	0.01	**23**	0.01	-	0.01	**20**	0.01	-	0.10
Lead	0.025	**0.051**	0.002	-	0.001	**0.02**	0.002	U	0.001	**0.044**	0.002	-	0.001	**0.577**	0.002	-	0.001
Magnesium	35	**44.3**	0.010	N	0.01	**15.3**	0.010	N	0.01	**9.31**	0.010	N	0.01	**7.24**	0.010	N	0.01
Manganese	0.3	**5.55**	0.050	-	0.010	**0.978**	0.005	-	0.010	**0.411**	0.005	-	0.010	**1.39**	0.005	-	0.010
Mercury	0.0007	< 0.0002	0.0002	U	0.00015	< 0.0002	0.0002	U	0.00015	< 0.0002	0.0002	U	0.00015	**0.0002**	0.0002	U	0.00015
Nickel	0.1	**0.033**	0.004	-	0.001	**0.008**	0.004	-	0.001	**0.034**	0.004	-	0.001	**0.016**	0.004	-	0.001
Potassium	NS	**15.6**	1.0	-	0.01	**11.6**	0.1	-	0.01	**9.6**	0.1	-	0.01	**9.2**	1.0	-	0.01
Selenium	0.01	< 0.010	0.010	U	0.001	< 0.010	0.010	U	0.001	< 0.010	0.010	U	0.001	< 0.010	0.010	U	0.001
Silver	0.05	< 0.005	0.005	U	0.001	< 0.005	0.005	U	0.001	< 0.005	0.005	U	0.001	< 0.005	0.005	U	0.001
Sodium	2	**71.5**	1.0	-	0.10	**80.4**	1.0	-	0.10	**31.6**	0.10	-	0.10	**77.2**	1.0	-	0.10
Thallium	0.0005	< 0.0005	0.0005	U	0.0005	< 0.0005	0.0005	U	0.0005	< 0.0005	0.0005	U	0.0005	< 0.0005	0.0005	U	0.0005
Vanadium	NS	**0.025**	0.010	-	0.001	**0.011**	0.010	-	0.001	**0.049**	0.010	-	0.001	**0.025**	0.010	-	0.001
Zinc	2	**0.091**	0.010	-	0.0011	**0.034**	0.010	-	0.0011	**0.063**	0.010	-	0.0011	**0.135**	0.010	-	0.0011

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Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 10
Groundwater Analytical Results
Total Metals

Compound	NYSDEC Groundwater Quality Standards mg/L	RIR Results - March 2018											
		MW5 3/15/2018 mg/L				MW6 3/20/2018 mg/L				Duplicate (MW5) 3/15/2018 mg/L			
		Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL
Aluminum	NS	**0.284**	0.010	-	0.005	**6.78**	0.010	-	0.005	**0.354**	0.010	-	0.005
Antimony	0.003	<0.003	<0.003	U	0.002	<0.003	0.003	U	0.002	<0.003	0.003	U	0.002
Arsenic	0.025	**0.004**	0.004	U	0.004	**0.009**	0.004	U	0.004	**0.004**	0.004	-	0.004
Barium	1	**0.362**	0.010	-	0.001	**0.247**	0.010	-	0.001	**0.362**	0.010	-	0.001
Beryllium	0.003	< 0.001	0.001	U	0.001	< 0.001	0.001	U	0.001	< 0.001	0.001	U	0.001
Cadmium	0.005	< 0.004	0.004	B	0.0005	**0.001**	0.004	-	0.0005	< 0.004	0.004	B	0.0005
Calcium	NS	**161**	0.10	-	0.01	**129**	0.010	-	0.10	**158**	0.10	-	0.01
Chromium	0.05	**0.003**	0.001	-	0.001	**0.016**	0.001	-	0.001	**0.004**	0.001	U	0.001
Cobalt	NS	< 0.005	0.005	B	0.001	**0.005**	0.005	-	0.001	< 0.005	0.005	-	0.001
Copper	0.2	**0.002**	0.005	B	0.001	**0.108**	0.005	U	0.001	**0.002**	0.005	U	0.001
Iron	0.5	**42.8**	0.01	-	0.01	**35**	0.01	-	0.10	**40.8**	0.01	-	0.01
Lead	0.025	**0.012**	0.002	-	0.001	**0.633**	0.002	-	0.001	**0.014**	0.002	-	0.001
Magnesium	35	**25.7**	0.010	N	0.01	**12.9**	0.010	N	0.10	**25.3**	0.010	-	0.01
Manganese	0.3	**1.35**	0.005	-	0.010	**0.557**	0.005	-	0.10	**1.34**	0.005	-	0.010
Mercury	0.0007	< 0.0002	0.0002	U	0.00015	**0.0006**	0.0002	U	0.00015	< 0.0002	0.0002	U	0.00015
Nickel	0.1	< 0.004	0.004	B	0.001	**0.02**	0.004	-	0.001	**0.001**	0.004	B	0.001
Potassium	NS	**16**	0.1	-	0.01	**6.5**	1.0	-	0.01	**17.5**	0.1	-	0.01
Selenium	0.01	< 0.010	0.010	U	0.001	< 0.010	0.010	UN	0.001	< 0.010	0.010	UN	0.001
Silver	0.05	< 0.005	0.005	U	0.001	< 0.005	0.005	B	0.001	< 0.005	0.005	U	0.001
Sodium	2	**129**	10	-	0.10	**97**	1.0	-	0.10	**126**	10	-	0.10
Thallium	0.0005	< 0.0005	0.0005	U	0.0005	< 0.0005	0.0005	U	0.0005	< 0.0005	0.0005	U	0.0005
Vanadium	NS	< 0.010	0.010	B	0.001	**0.058**	0.010	-	0.001	< 0.010	0.010	U	0.001
Zinc	2	**0.008**	0.010	-	0.0011	**0.234**	0.010	-	0.0011	**0.009**	0.010	-	0.0011

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Former Boyle Auto Wreckers Site
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TABLE 11
Groundwater Analytical Results
Dissolved Metals

Compound	NYSDEC Groundwater Quality Standards mg/L	RIR Results - March 2018															
		MW1 3/20/2018 mg/L				MW2 3/15/2018 mg/L				MW3 3/15/2018 mg/L				MW4 3/20/2018 mg/L			
		Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL
Aluminum	NS	**0.062**	0.011	U	0.005	**0.058**	0.011	U	0.005	**0.022**	0.011	U	0.005	**0.03**	0.011	U	0.005
Antimony	0.003	< 0.003	0.003	U	0.003	<0.0011	0.0011	U	0.003	< 0.003	0.003	U	0.003	< 0.003	0.003	U	0.003
Arsenic	0.025	< 0.004	0.004	U	0.003	**0.002**	0.003	U	0.003	< 0.003	0.003	U	0.003	< 0.004	0.004	U	0.003
Barium	1	**0.096**	0.011	-	0.001	**0.104**	0.011	-	0.001	**0.035**	0.011	-	0.001	**0.024**	0.011	-	0.001
Beryllium	0.003	< 0.001	0.001	U	0.001	< 0.001	0.001	U	0.001	< 0.001	0.001	U	0.001	< 0.001	0.001	U	0.001
Cadmium	0.005	< 0.004	0.004	U	0.0005	< 0.004	0.004	U	0.0005	< 0.004	0.004	U	0.0005	< 0.004	0.004	U	0.0005
Calcium	NS	**117**	0.01	-	0.01	**106**	0.01	-	0.01	**21.3**	0.01	-	0.01	**27.2**	0.01	-	0.01
Chromium	0.05	**0.002**	0.001	U	0.001	< 0.001	0.001	U	0.001	**0.001**	0.001	U	0.001	**0.007**	0.001	U	0.001
Cobalt	NS	**0.004**	0.005	B	0.001	< 0.005	0.005	U	0.001	< 0.005	0.005	B	0.001	< 0.005	0.005	-	0.001
Copper	0.2	**0.001**	0.005	B	0.001	**0.002**	0.005	U	0.001	**0.002**	0.005	B	0.001	**0.006**	0.005	U	0.001
Iron	0.5	**13.4**	0.01	-	0.01	**0.65**	0.01	-	0.01	< 0.01	0.01	U	0.01	**0.09**	0.01	-	0.01
Lead	0.025	**0.003**	0.002	U	0.001	**0.003**	0.002	-	0.001	< 0.002	0.002	-	0.001	< 0.002	0.002	B	0.001
Magnesium	35	**37.6**	0.01	-	0.01	**14.4**	0.01	-	0.01	**2.42**	0.01	-	0.01	**2.86**	0.01	-	0.01
Manganese	0.3	**5.63**	0.053	-	0.011	**0.881**	0.005	-	0.011	**0.021**	0.005	-	0.011	**0.901**	0.005	-	0.011
Mercury	0.0007	< 0.0002	0.0002	U	0.00015	< 0.0002	0.0002	U	0.00015	< 0.0002	0.0002	U	0.00015	< 0.0002	0.0002	U	0.00015
Nickel	0.1	**0.006**	0.004	B	0.001	**0.001**	0.004	B	0.001	< 0.004	0.004	B	0.001	**0.004**	0.004	-	0.001
Potassium	NS	**11.7**	0.1	-	0.01	**10.2**	0.1	-	0.01	**4.2**	0.1	-	0.01	**4.9**	0.1	-	0.01
Selenium	0.01	<0.002	0.002	U	0.002	<0.003	0.003	U	0.002	< 0.003	0.003	U	0.002	< 0.0002	0.0002	U	0.002
Silver	0.05	<0.005	0..005	U	0.001	< 0.005	0.005	U	0.001	< 0.005	0.005	U	0.001	< 0.0002	0.0002	U	0.001
Sodium	2	**71.1**	1.1	-	0.11	**80.5**	1.1	-	0.11	**35.1**	0.11	-	0.11	**76.3**	1.1	-	0.11
Thallium	0.0005	< 0.0003	0.0003	U	0.0005	<0.0003	0.0003	U	0.0005	<0.0003	0.0003	U	0.0005	< 0.0003	0.0003	U	0.0005
Vanadium	NS	< 0.011	0.011	U	0.001	0.001	0.011	U	0.001	<0.0003	0.0003	U	0.001	< 0.011	0.011	U	0.001
Zinc	2	**0.006**	0.011	B	0.0012	< 0.011	0.011	U	0.0012	< 0.011	0.011	U	0.0012	**0.002**	0.011	B	0.0012

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Former Boyle Auto Wreckers Site
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TABLE 11
Groundwater Analytical Results
Dissolved Metals

Compound	NYSDEC Groundwater Quality Standards mg/L	RIR Results - March 2018											
		MW5 3/15/2018 mg/L				MW6 3/20/2018 mg/L				Duplicate (MW5) 3/15/2018 mg/L			
		Results	RL	Qual	MDL	Results	RL	Qual	MDL	Results	RL	Qual	MDL
Aluminum	NS	**0.062**	0.011	U	0.005	**0.057**	0.011	-	0.005	**0.066**	0.011	U	0.005
Antimony	0.003	<0.0011	0.0011	U	0.003	< 0.0003	0.0003	U	0.003	<0.0011	0.0011	U	0.003
Arsenic	0.025	**0.002**	0.003	U	0.003	< 0.004	0.004	-	0.003	**0.002**	0.003	U	0.003
Barium	1	**0.221**	0.011	-	0.001	**0.102**	0.011	-	0.001	**0.227**	0.011	-	0.001
Beryllium	0.003	< 0.001	0.001	U	0.001	< 0.001	0.001	U	0.001	< 0.001	0.001	U	0.001
Cadmium	0.005	< 0.004	0.004	U	0.0005	< 0.004	0.004	-	0.0005	< 0.004	0.004	B	0.0005
Calcium	NS	**148**	0.01	-	0.01	**109**	0.01	-	0.11	**148**	0.01	-	0.01
Chromium	0.05	< 0.001	0.001	U	0.001	< 0.001	0.001	U	0.001	< 0.001	0.001	U	0.001
Cobalt	NS	< 0.005	0.005	U	0.001	< 0.005	0.005	-	0.001	< 0.005	0.005	-	0.001
Copper	0.2	**0.002**	0.005	U	0.001	< 0.005	0.005	U	0.001	**0.001**	0.005	U	0.001
Iron	0.5	**6.19**	0.01	-	0.01	**1.44**	0.01	-	0.11	**8.99**	0.01	-	0.01
Lead	0.025	**0.001**	0.002	U	0.001	< 0.002	0.002	-	0.001	**0.002**	0.002	-	0.001
Magnesium	35	**25.7**	0.01	-	0.01	**10.7**	0.01	-	0.11	**25.5**	0.01	-	0.01
Manganese	0.3	**1.31**	0.005	-	0.011	**0.429**	0.005	-	0.11	**1.29**	0.005	-	0.011
Mercury	0.0007	< 0.0002	0.0002	U	0.00015	< 0.0002	0.0002	U	0.00015	< 0.0002	0.0002	U	0.00015
Nickel	0.1	< 0.004	0.004	U	0.001	**0.002**	0.004	U	0.001	< 0.004	0.004	U	0.001
Potassium	NS	**16.9**	0.1	-	0.01	**5.7**	0.1	-	0.01	**17.1**	0.1	-	0.01
Selenium	0.01	<0.003	0.003	U	0.002	0.002	0.002	U	0.002	< 0.003	0.003	U	0.002
Silver	0.05	< 0.005	0.005	U	0.001	< 0.005	0.005	U	0.001	< 0.005	0.005	U	0.001
Sodium	2	**121**	11	-	0.11	**97.8**	1.1	-	0.11	**117**	11	-	0.11
Thallium	0.0005	<0.0005	0.0005	U	0.0005	< 0.0003	0.0003	U	0.0005	<0.0003	0.0003	U	0.0005
Vanadium	NS	< 0.011	0.011	U	0.001	< 0.011	0.011	B	0.001	< 0.011	0.011	U	0.001
Zinc	2	**0.001**	0.011	U	0.0012	**0.001**	0.011	-	0.0012	< 0.011	0.011	B	0.0012

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Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx NY

Table 12
Ground Water Analytical Results
PFAS

Compound	MW1 3/20/2018 ng/L		MW4 3/20/2018 ng/L		MW6 3/20/2018 ng/L	
	Results	RL	Results	RL	Results	RL
Perfluorobutanoic acid	**15.9**	4.07	**11.4**	3.9	**15.7**	5.0
Perfluoropentanoic acid	**11.7**	4.07	**16.9**	3.9	**29.3**	5.0
Perfluorobutanesulfonic acid	**9.11**	4.07	**4.16**	3.9	**7.15**	5.0
Perfluorohexanoic acid	**13.9**	4.07	**20.4**	3.9	**21.0**	1.3
Perfluoroheptanoic acid	**14.4**	4.07	**13.8**	3.9	**10.7**	5.0
Perfluorohexanesulfonic acid	**9.29**	4.07	ND	3.9	ND	5.0
6:2 Fluorotelomer sulfonate	ND	4.07	ND	3.9	ND	5.0
Perfluorooctanoic acid	**51.2**	4.07	**32.1**	3.9	**12.8**	5.0
Perfluoroheptanesulfonic acid	ND	4.07	ND	3.9	ND	1.3
Perfluorooctanessulfonic acid	**52.6**	4.07	**62.1**	3.9	**23.4**	5.0
Perfluorononanoic acid	ND	4.07	**8.13**	3.9	ND	5.0
Perfluorodecanoic acid	ND	4.07	**4.31**	3.9	ND	2.5
8:2 Fluorotelomer sulfonate	ND	4.07	ND	3.9	ND	1.3
Perfluorooctanesulfonamide	ND	4.07	ND	3.9	ND	4.7
N-metyl perfluorooctanesulfonamidoacetic acid	ND	4.07	ND	3.9	ND	2.5
Perfluorodecanesulfonic acid	ND	4.07	ND	3.9	ND	1.3
Perfluoroundecanoic acid	ND	4.07	ND	3.9	ND	5.0
N-ethyl perfluorooctanesulfonamideoacetic acid	ND	4.07	ND	3.9	ND	3.0
Perfluorododecanoic acid	ND	4.07	ND	3.9	ND	5.0
Perfluorotridecanoic acid	ND	4.07	ND	3.9	ND	500
Perfluorotetradecanoic acid	ND	4.07	ND	3.9	ND	5.0

Notes:
ND - Not Detected
RL- Reporting Limit

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 13
Soil Gas Analytical Results
Volatile Organic Compounds

COMPOUNDS	NYSDOH Maximum Sub-Slab Value ($\mu g/m^3$) [a]	NYSDOH Soil Outdoor Background Levels ($\mu g/m^3$) [b]	RIR Results - March 2018															
			SG1 3/15/2018 (µg/m3)				SG2 3/15/2018 (µg/m3)				SG3 3/15/2018 (µg/m3)				SG4 3/15/2018 (µg/m3)			
			Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
1,1,1,2-Tetrachloroethane			< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,1,1-Trichloroethane	100	<2.0 - 2.8	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	-	1.00	< 1.00	1.00	U	1.00
1,1,2,2-Tetrachloroethane		<1.5	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,1,2-Trichloroethane		<1.0	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,1-Dichloroethane		<1.0	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,1-Dichloroethene		<1.0	< 0.20	0.20	U	1.00	< 0.20	0.20	U	1.00	< 0.20	0.20	U	1.00	< 0.20	0.20	U	1.00
1,2,4-Trichlorobenzene		NA	**2.08**	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,2,4-Trimethylbenzene		<1.0	**3.28**	1.00	-	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	-	1.00	< 1.00	1.00	-	1.00
1,2-Dibromoethane		<1.5	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,2-Dichlorobenzene		<2.0	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,2-Dichloroethane		<1.0	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,2-Dichloropropane			< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,2-Dichlorotetrafluoroethane			< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,3,5-Trimethylbenzene		<1.0	**1.16**	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,3-Butadiene		NA	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,3-Dichlorobenzene		<2.0	**2.45**	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,4-Dichlorobenzene		NA	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
1,4-Dioxane			< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
2-Hexanone			< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	-	1.00	< 1.00	1.00	U	1.00
4-Ethyltoluene		NA	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
4-Isopropyltoluene			< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
4-Methyl-2-pentanone			**1.52**	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	D	99.9
Acetone		NA	**710**	15.0	D	9.99	**620**	15.0	-	1.00	**636**	15.0	-	1.00	**539**	15.0	D	99.9
Acrylonitrile			< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Benzene		<1.6 - 4.7	**2.01**	1.00	-	1.00	< 1.00	1.00	U	1.00	**1.1**	1.00	-	1.00	**27.9**	1.00	-	1.00
Benzyl Chloride		NA	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Bromodichloromethane		<5.0	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Bromoform		<1.0	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Bromomethane		<1.0	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Carbon Disulfide		NA	**1.15**	1.00	-	1.00	< 1.00	1.00	U	1.00	**2.07**	1.00	U	1.00	**65**	1.00	-	1.00
Carbon Tetrachloride	5	<3.1	**0.53**	0.20	U	0.25	**0.43**	0.20	-	0.25	**0.62**	0.20	U	0.25	**0.48**	0.20	U	0.25
Chlorobenzene		<2.0	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Chloroethane		NA	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Chloroform		<2.4	< 1.00	1.00	-	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Chloromethane		<1.0 - 1.4	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	**1.26**	1.00	U	1.00	**1.42**	1.00	U	1.00
cis-1,2-Dichloroethene		<1.0	< 0.20	0.20	U	1.00	< 0.20	0.20	U	1.00	< 0.20	0.20	U	1.00	< 0.20	0.20	-	1.00
cis-1,3-Dichloropropene		NA	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Cyclohexane		NA	**1.63**	1.00	-	1.00	**2.43**	1.00	U	1.00	**1.71**	1.00	U	1.00	**413**	15.0	D	100
Dibromochloromethane		<5.0	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Dichlorodifluromethane		NA	**2.97**	1.00	-	1.00	**2.33**	1.00	-	1.00	**2.76**	1.00	-	1.00	**2.87**	1.00	-	1.00
Ethanol			**115**	1.00	-	1.00	**63.1**	1.00	-	1.00	**58.4**	1.00	-	1.00	**1,080**	1.00	E	1.00
Ethyl Acetate		NA	**2.32**	1.00	U	1.00	**2.51**	1.00	U	1.00	**2**	1.00	U	1.00	< 1.00	1.00	U	1.00
Ethylbenzene		<4.3	**2.87**	1.00	-	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	-	1.00	**1.3**	1.00	-	1.00
Heptane		NA	**3.81**	1.00	-	1.00	**1.65**	1.00	-	1.00	**1.54**	1.00	-	1.00	**25.7**	1.00	D	99.9
Hexachlorobutadiene		NA	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Hexane		<1.5	**4.44**	1.00	S	1.00	**11.8**	1.00	S	1.00	**3.01**	1.00	S	1.00	**100**	1.00	DS	100
Isopropylalcohol		NA	**25.3**	1.00	-	1.00	**24.1**	1.00	U	1.00	**26.5**	1.00	U	1.00	**7.81**	1.00	-	1.00
Isopropylbenzene			< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	-	1.00
Xylene (m&p)		<4.3	**11**	1.00	-	1.00	**3.92**	1.00	U	1.00	**3.39**	1.00	-	1.00	**3.64**	1.00	-	1.00
Methyl Ethyl Ketone			**33**	1.00	-	1.00	**16.8**	1.00	U	1.00	**14.1**	1.00	D	9.99	**15.3**	1.00	D	99.9
MTBE		NA	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	**262**	15.0	U	1.00
Methylene Chloride		<3.4	< 3.00	3.00	U	1.00	< 3.00	3.00	S	1.00	< 3.00	3.00	U	1.00	< 3.00	3.00	U	1.00
n-Butylbenzene			< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Xylene (o)		<4.3	**4.95**	1.00	-	1.00	**1.07**	1.00	U	1.00	**1.09**	1.00	-	1.00	**1.14**	1.00	-	1.00
Propylene		NA	**20.5**	1.00	-	1.00	**28.9**	1.00	U	1.00	**15**	1.00	-	1.00	**73.8**	15.0	D	99.9
sec-Butylbenzene			< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Styrene		<1.0	**2.47**	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Tetrachloroethene	30		**1.17**	0.25	-	0.25	**1.71**	0.25	-	0.25	< 0.25	0.25	-	0.25	**0.26**	0.25	-	0.25
Tetrahydrofuran		NA	**23.5**	1.00	U	1.00	**1.4**	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Toluene		1.0 - 6.1	**21.1**	1.00	-	1.00	**11**	1.00	-	1.00	**5.54**	1.00	-	1.00	**10.5**	1.00	-	1.00
trans-1,2-Dichloroethene		NA	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	-	1.00
trans-1,3-Dichloropropene		NA	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00
Trichloroethene	2	<1.7	< 0.20	0.20	U	0.25	< 0.20	0.20	U	0.25	< 0.20	0.20	-	0.25	< 0.20	0.20	-	0.25
Trichlorofluoromethane		NA	**1.43**	1.00	-	1.00	**16.3**	1.00	-	1.00	**1.33**	1.00	-	1.00	**1.45**	1.00	U	1.00
Trichlorotrifluoroethane			< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	< 1.00	1.00	U	1.00	**1.17**	1.00	U	1.00
Vinyl Chloride		<1.0	< 0.20	0.20	U	0.25	< 0.20	0.20	U	0.25	< 0.20	0.20	U	0.25	< 0.20	0.20	-	0.25
BTEX			**41.93**				**15.99**				**11.12**				**44.48**			
Total VOCs			**1001.6**				**809.45**				**777.42**				**2633.7**			

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)
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.
S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 13
Soil Gas Analytical Results
Volatile Organic Compounds

COMPOUNDS	NYSDOH Maximum Sub-Slab Value ($\mu g/m^3$) [a]	NYSDOH Soil Outdoor Background Levels ($\mu g/m^3$) [b]	RIR Results - March 2018															
			SG5 3/15/2018 ($\mu g/m3$)				SG6 3/15/2018 ($\mu g/m3$)				SG7 3/15/2018 ($\mu g/m3$)				SG8 3/15/2018 ($\mu g/m3$)			
			Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL	Result	RL	Qual	MDL
1,1,1,2-Tetrachloroethane			< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
1,1,1-Trichloroethane	100	<2.0 - 2.8	< 1.00	1.00	U	9.98	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
1,1,2,2-Tetrachloroethane		<1.5	< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
1,1,2-Trichloroethane		<1.0	< 1.00	1.00	U	9.98	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
1,1-Dichloroethane		<1.0	< 1.00	1.00	U	9.99	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
1,1-Dichloroethene		<1.0	< 0.20	0.20	U	9.99	< 0.20	0.20	U	18.5	< 0.20	0.20	U	30.0	< 0.20	0.20	U	30.0
1,2,4-Trichlorobenzene		NA	< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
1,2,4-Trimethylbenzene		<1.0	< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	**3.17**	1.00	U	30.0	**3.33**	1.00	U	30.0
1,2-Dibromoethane		<1.5	< 1.00	1.00	U	9.98	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
1,2-Dichlorobenzene		<2.0	< 1.00	1.00	U	9.97	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
1,2-Dichloroethane		<1.0	< 1.00	1.00	U	9.99	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
1,2-Dichloropropane			< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
1,2-Dichlorotetrafluoroethane			< 1.00	1.00	U	9.99	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
1,3,5-Trimethylbenzene		<1.0	< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	**1.57**	1.00	U	30.0	< 1.00	1.00	U	30.0
1,3-Butadiene		NA	< 1.00	1.00	U	9.99	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.1	< 1.00	1.00	U	30.1
1,3-Dichlorobenzene		<2.0	< 1.00	1.00	U	9.97	< 1.00	1.00	U	18.5	**1.13**	1.00	U	30.0	< 1.00	1.00	U	30.0
1,4-Dichlorobenzene		NA	< 1.00	1.00	U	9.97	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
1,4-Dioxane			< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
2-Hexanone			< 1.00	1.00	U	9.99	**4.18**	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
4-Ethyltoluene		NA	< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	**1.43**	1.00	U	30.0	< 1.00	1.00	U	30.0
4-Isopropyltoluene			< 1.00	1.00	U	9.98	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
4-Methyl-2-pentanone			< 1.00	1.00	U	9.99	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Acetone		NA	**7,190**	75.0	U	9.99	**3,580**	75.0	U	18.5	**242**	5.01	U	29.9	**205**	5.01	U	29.9
Acrylonitrile			< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	29.9	< 1.00	1.00	U	29.9
Benzene		<1.6 - 4.7	**7.18**	1.00	-	9.99	**1.23**	1.00	-	18.5	< 1.00	1.00	-	30.0	< 1.00	1.00	U	30.0
Benzyl Chloride		NA	< 1.00	1.00	U	9.99	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Bromodichloromethane		<5.0	< 1.00	1.00	U	9.98	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Bromoform		<1.0	< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Bromomethane		<1.0	< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Carbon Disulfide		NA	**89.9**	1.00	U	9.99	**9.86**	1.00	-	18.5	**17.5**	1.00	U	30.0	< 1.00	1.00	U	30.0
Carbon Tetrachloride	5	<3.1	**0.3**	0.20	U	2.50	**0.41**	0.20	U	4.61	**0.31**	0.20	U	7.48	**0.41**	0.20	U	7.48
Chlorobenzene		<2.0	< 1.00	1.00	U	9.98	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Chloroethane		NA	< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.1	< 1.00	1.00	U	30.1
Chloroform		<2.4	< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	**1.72**	1.00	U	30.0	< 1.00	1.00	U	30.0
Chloromethane		<1.0 - 1.4	< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	29.9	**1.2**	1.00	U	29.9
cis-1,2-Dichloroethene		<1.0	**0.3**	0.20	U	9.99	< 0.20	0.20	-	18.5	< 0.20	0.20	-	30.0	< 0.20	0.20	U	30.0
cis-1,3-Dichloropropene		NA	< 1.00	1.00	U	9.98	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Cyclohexane		NA	**15.8**	1.00	D	270	< 1.00	1.00	D	92.5	**389**	4.99	D	300	< 1.00	1.00	U	30.0
Dibromochloromethane		<5.0	< 1.00	1.00	U	9.96	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Dichlorodifluromethane		NA	**2.43**	1.00	U	9.98	**2.62**	1.00	U	18.5	**2.55**	1.00	U	30.0	**2.43**	1.00	U	30.0
Ethanol			**101**	1.00	U	10.0	**134**	1.00	-	18.5	**36.3**	1.00	U	29.9	**19.2**	1.00	-	29.9
Ethyl Acetate		NA	**2.82**	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	**3.53**	1.00	U	30.0
Ethylbenzene		<4.3	< 1.00	1.00	-	9.98	< 1.00	1.00	-	18.5	**8.29**	1.00	U	30.0	< 1.00	1.00	U	30.0
Heptane		NA	**14**	1.00	D	75.0	**2.12**	1.00	-	18.5	**496**	5.00	D	300	< 1.00	1.00	U	30.0
Hexachlorobutadiene		NA	< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Hexane		<1.5	**23.8**	1.00	D	270	**1.54**	1.00	D	92.6	**340**	5.00	D	300	**1.18**	1.00	S	30.0
Isopropylalcohol		NA	**35.1**	1.00	U	10.0	**51.8**	1.00	U	18.5	**3.78**	1.00	U	30.0	**44.7**	1.00	U	30.0
Isopropylbenzene			< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Xylene (m&p)		<4.3	**3.49**	1.00	-	9.98	**3.14**	1.00	-	18.5	**16.4**	1.00	U	30.0	**3.2**	1.00	U	30.0
Methyl Ethyl Ketone			**197**	74.9	D	74.9	**162**	15.0	-	18.5	**14.7**	1.00	-	30.1	**45.7**	1.00	-	30.1
MTBE		NA	< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	-	30.0	< 1.00	1.00	D	150
Methylene Chloride		<3.4	< 3.00	3.00	U	10.0	< 3.00	3.00	U	18.5	< 3.00	3.00	U	30.0	< 3.00	3.00	U	30.0
n-Butylbenzene			< 1.00	1.00	U	9.98	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Xylene (o)		<4.3	**1.17**	1.00	-	9.98	**1.74**	1.00	U	18.5	**8.03**	1.00	U	30.0	**1.41**	1.00	U	30.0
Propylene		NA	**157**	75.0	D	75.0	**14.6**	1.00	-	18.6	**45.6**	1.00	U	29.9	**3.32**	1.00	U	29.9
sec-Butylbenzene			< 1.00	1.00	U	9.98	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Styrene		<1.0	< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	**1.75**	1.00	U	30.0	< 1.00	1.00	U	30.0
Tetrachloroethene	30		< 0.25	0.25	-	2.50	**0.95**	0.25	U	4.62	**0.78**	0.25	-	7.52	**0.48**	0.25	U	7.52
Tetrahydrofuran		NA	**2.73**	1.00	U	9.99	**1.43**	1.00	U	18.5	**24.3**	1.00	U	30.1	**41.6**	1.00	U	30.1
Toluene		1.0 - 6.1	**6.52**	1.00	-	10.0	**4.44**	1.00	U	18.5	**17.3**	1.00	U	30.0	**4.29**	1.00	-	30.0
trans-1,2-Dichloroethene		NA	< 1.00	1.00	U	9.99	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
trans-1,3-Dichloropropene		NA	< 1.00	1.00	U	9.98	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Trichloroethene	2	<1.7	< 0.20	0.20	-	2.50	< 0.20	0.20	-	4.62	**0.38**	0.20	-	7.52	< 0.20	0.20	U	7.52
Trichlorofluoromethane		NA	**1.16**	1.00	U	9.99	**1.13**	1.00	U	18.5	**1.62**	1.00	U	30.0	**1.15**	1.00	U	30.0
Trichlorotrifluoroethane			< 1.00	1.00	U	10.0	< 1.00	1.00	U	18.5	< 1.00	1.00	U	30.0	< 1.00	1.00	U	30.0
Vinyl Chloride		<1.0	< 0.20	0.20	U	2.50	< 0.20	0.20	-	4.62	< 0.20	0.20	-	7.51	< 0.20	0.20	-	7.51
BTEX			**18.36**				**10.55**				**50.02**				**8.9**			
Total VOCs			**7851.70**				**3977.19**				**1675.6**				**382.1**			

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)
U- The compound was anlayzed for but not detected at or above the MDL.
J- The value is estimated.
N- The concentration is based on the response fo the nearest internal.
S- This compound is a solvent that is used in the laboratory.
D- The reported concentration is the result of a diluted analysis.

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 14
Parameters Detected Above Soil Standards

COMPOUND	Range in Exceedances	Frequency of Detection	Phase II Results - May 2016																	
			B1		B2		B3	B4		B5		B6	B10		17SB1		17SB2		
			(0-2') 5/26/2016	(4-5') 5/26/2016	(0-2') 5/26/2016	(1-3') 5/26/2016	(3-5') 5/26/2016	(0-2') 5/26/2016	(3-5') 5/26/2016	(0-2') 5/26/2016	(5-7') 5/26/2016	(1-3') 5/26/2016	(0-2') 5/26/2016	(6-8') 5/26/2016	(5-7') 2/26/2018	(12.5-15) 2/26/2018	(2-4') 2/26/2018	(5-7') 2/26/2018	(12.5-15') 2/26/2018
Sample Results in ug/kg																				
1,2,4-Trimethylbenzene	53000-1400000	5	-	4,000	-	3,900	-	-	-	6,300	-	-	-	-	-	-	1,400,000	-	-
1,3,5-Trimethylbenzene	18000-520000	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	520,000	-	-
Acetone	56-440	12	-	360	-	-	440	68	-	-	62	-	-	-	-	-	-	82	-
Benzene	190-860	4	-	480	-	860	430	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	11000-34000	3	-	-	-	11,000	-	-	-	-	-	-	-	-	-	-	34,000	-	-
m&p-Xylenes	390-930000	8	-	3,000	-	8,000	1800	-	-	1,300	-	-	-	-	740	-	930,000	-	-
Methyl Ethyl Ketone (2-Butanone)	340	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	89,000	3	-	-	-	46,000	-	-	-	13,000	-	-	-	-	-	-	210,000	-	-
n-Propylbenzene	8200-25000	3	-	-	-	9,100	-	-	-	-	-	-	-	-	-	-	25,000	-	-
o-Xylene	480-23000	6	-	480	-	870	630	-	-	1,300	-	-	-	-	-	-	4,900	-	-
sec-Butylbenzene	12,000	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12,000	-	-
Toluene	790-13000	5	-	1,200	-	7,500	790	-	-	-	-	-	-	-	-	-	1,800	-	-
Sample Results in ug/kg																				
Benz(a)anthracene	1100-38000	5	-	8,800	-	-	-	-	-	38,000	3,600	-	-	-	-	-	-	-	-
Benzo(a)pyrene	1800-6100	4	-	6,100	-	-	-	-	-	3,700	2,900	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	1300-5300	4	-	5,300	-	-	-	-	-	3,600	2,700	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	1200-6200	4	-	6,200	-	-	-	-	-	3,400	2,500	-	-	-	-	-	-	-	-
Chrysene	1000-40000	6	-	8,300	-	1000	-	-	-	40,000	3,500	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	5,400	1	-	-	-	-	-	-	-	5,400	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	540-24000	6	-	3,300	-	-	-	-	-	24,000	1,600	-	-	-	-	-	-	-	-
Naphthalene	2200-63000	2	-	-	-	2,200	-	-	-	-	-	-	-	-	-	-	63,000	-	-
Sample Results in ug/kg																				
4,4' -DDD	20	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4' -DDE	11	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-
4,4' -DDT	8.1-15	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-
Sample Results in ug/kg																				
PCB-1254	210	1	210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCB-1260	110	1	-	-	-	-	-	-	-	-	-	110	-	-	-	-	-	-	-
Sample Results in mg/kg																				
Barium	371-691	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	34.8-86.9	8	34.8	-	-	-	-	-	-	-	-	-	-	-	-	-	49.5	-	-
Copper	50.3-238	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	238	-	-
Lead	103-700	11	700	-	104	-	-	103	-	-	-	210	111	-	-	-	394	-	-
Mercury	0.19-0.91	6	0.25	-	-	-	-	-	-	-	-	0.19	-	-	-	-	0.56	-	-
Nickel	32-71.5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71.5	-	
Zinc	126-305	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	247	-	-

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

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 14
Parameters Detected Above Soil Standards

RIR Results - February and March 2018

COMPOUND	Range in Exceedances	Frequency of Detection	17SB3		17SB4		17SB5		17SB6		17SB7			17SB8	17SB9		17SB10		Duplicate 1	Duplicate 2
			(5-7') 2/26/2018	(12.5-15') 2/26/2018	(5-7') 2/26/2018	(12.5-15') 2/26/2018	(2-4') 2/26/2018	(5-7') 2/26/2018	(0-2') 3/1/2018	(4-6') 3/1/2018	(2-4') 2/26/2018	(5-7') 2/26/2018	(12.5-15') 2/26/2018	(3-5') 11/14/2016	(2-4') 2/26/2018	(5-7') 2/26/2018	(2-4') 2/26/2018	(5-7') 2/26/2018	(12.5-15') 2/26/2018	(12.5-15') 2/26/2016
Sample Results in ug/kg																				
1,2,4-Trimethylbenzene	53000-1400000	5	-	-	-	-	-	-	-	-	-	-	-	-	53,000	-	-	-	-	-
1,3,5-Trimethylbenzene	18000-520000	2	-	-	-	-	-	-	-	-	-	-	-	-	18,000	-	-	-	-	-
Acetone	56-440	12	350	77	120	-	56	210	67	-	-	-	-	-	-	110	-	990	-	-
Benzene	190-860	4	-	-	-	-	-	-	-	-	-	-	-	-	190	-	-	-	-	-
Ethylbenzene	11000-34000	3	-	-	-	-	-	-	-	-	-	-	-	-	14,000	-	-	-	-	-
m&p-Xylenes	390-930000	8	-	-	-	-	-	-	-	-	-	-	-	-	62,000	-	-	-	390	-
Methyl Ethyl Ketone (2-Butanone)	340	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	340	-	-
Naphthalene	89,000	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
n-Propylbenzene	8200-25000	3	-	-	-	-	-	-	-	-	-	-	-	-	8,200	-	-	-	-	-
o-Xylene	480-23000	6	-	-	-	-	-	-	-	-	-	-		-	23,000	-	-	-	-	-
sec-Butylbenzene	12,000	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	790-13000	5	-	-	-	-	-	-	-	-	-	-	-	-	13,000	-	-	-	-	-
Sample Results in ug/kg																				
Benz(a)anthracene	1100-38000	5	-	-	-	-	-	-	-	-	-	-	2,200	-	-	-	-	1,100	-	-
Benzo(a)pyrene	1800-6100	4	-	-	-	-	-	-	-	-	-	-	1,800	-	-	-	-	-	-	-
Benzo(b)fluoranthene	1300-5300	4	-	-	-	-	-	-	-	-	-	-	1,300	-	-	-	-	-	-	-
Benzo(k)fluoranthene	1200-6200	4	-	-	-	-	-	-	-	-	-	-	1,200	-	-	-	-	-	-	-
Chrysene	1000-40000	6	-	-	-	-	-	-	-	-	-	-	2,700	-	-	-	-	1,000	-	-
Dibenz(a,h)anthracene	5,400	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	540-24000	6	-	-	-	-	630	-	-	-	-	-	940	-	-	-	540	-	-	-
Naphthalene	2200-63000	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample Results in ug/kg																				
4,4' -DDD	20	1	-	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4' -DDE	11	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4' -DDT	8.1-15	3	-	-	-	-	-	-	-	-	-	-	-	-	9.5	-	8.1	-	-	-
Sample Results in ug/kg																				
PCB-1254	210	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCB-1260	110	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample Results in mg/kg																				
Barium	371-691	2	-	-	-	-	-	-	-	691	-	-	-	-	-	-	-	-	-	371
Chromium	34.8-86.9	8	-	37.7	-	-	35.4	-	42.5	86.9	36.2	-	-	-	-	-	-	-	-	52
Copper	50.3-238	8	-	56	-	-	102	-	-	55	50.3	-	-	-	55.1	-	116	-	-	60.5
Lead	103-700	11	-	-	-	-	598	-	230	-	-	-	141	-	270	-	177	-	-	-
Mercury	0.19-0.91	6	-	-	-	-	0.91	-	0.23	-	-	-	0.3	-	0.23	-	-	-	-	-
Nickel	32-71.5	6	-	32	-	-	36.8		36	40.9	-	-	-	-	-	-	-	-	-	36.9
Zinc	128-305	6	-	-	-	-	305	-	150	-	-	-	128	-	227	-	137	-	-	-

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

Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, NY

TABLE 15
Parameters Detected Above Ambient Groundwater Standards

			Phase II Results - May 2016					RIR Results - March 2018						
Compound	Range of Exceedances	Frequency of Detection	GW1 5/26/2016	GW2 5/26/2016	GW3 5/26/2016	GW4 5/26/2016	GW5 5/26/2016	MW1 3/20/2018	MW2 3/15/2018	MW3 3/15/2018	MW4 3/20/2018	MW5 3/15/2018	MW6 3/20/2018	GW Duplicate 3/15/2018
Sample Results in ug/L														
1,2,4-Trimethylbenzene	7.5-370	2	-	7.5	-	-	-	370	-	-	-	-	-	-
1,3,5-Trimethylbenzene	170	1	-	-	-	-	-	170	-	-	-	-	-	-
Benzene	6.8-19	2	-	19	-	-	-	6.8	-	-	-	-	-	-
Chloroform	9.2-16	2	-	-	-	-	-	-	-	16	9.2	-	-	-
cis-1,2-Dichloroethene	6	1	6	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	900	1	-	7.1	-	-	-	900	-	-	-	-	-	-
Isopropylbenzene	15-98	2	-	35	-	-	-	98	15	-	-	-	-	-
m&p-Xylenes	1800	1	-	19	-	-	-	1,800	-	-	-	-	-	-
Methyl t-butyl ether (MTBE)	12-14	2	-	12	-	-	14	-	-	-	-	-	-	-
Naphthalene	55	1	-	-	-	-	-	55	-	-	-	-	-	-
n-Butylbenzene	6.3	1	-	-	-	-	-	6.3	-	-	-	-	-	-
n-Propylbenzene	40-180	2	-	51	-	-	-	180	40	-	-	-	-	-
o-Xylene	130	1	-	-	-	-	-	130	-	-	-	-	-	-
sec-Butylbenzene	7.4-9.8	2	-	-	-	-	-	9.8	7.4	-	-	-	-	-
Toluene	91	1	-	6.4	-	-	-	91	-	-	-	-	-	-
Sample Results in ug/L														
Benz(a)anthracene	0.08-0.16	3	-	-	-	-	-	-	0.08	0.08	0.16	-	-	-
Benzo(b)fluoranthene	0.02-0.15	6	-	-	-	-	-	-	0.07	0.1	0.15	0.02	0.02	0.02
Benzo(k)fluoranthene	0.02-0.14	4	-	-	-	-	-	-	0.07	0.09	0.14	-	-	0.02
Chrysene	0.07-0.16	3	-	-	-	-	-	-	0.07	0.09	0.16	-	-	-
Indeno(1,2,3-cd)pyrene	0.04-0.12	3	-	-	-	-	-	-	0.04	0.05	0.12	-	-	-
Naphthalene	38	1	-	-	-	-	-	-	-	-	-	-	-	-
Sample Results in mg/L														
Chromium (total)	0.061	1	-	-	-	-	-	-	-	0.061	-	-	-	-
Copper (total)	0.597	1	-	-	-	-	-	-	-	-	0.597	-	-	-
Iron (total)	20-47.4	7	-	-	-	-	-	47.4	27.3	23	20	42.8	35	40.8
Lead (total)	0.044-0.633	4	-	-	-	-	-	0.051	-	0.044	0.577	-	0.633	-
Magnesium (total)	44.3-44.3	1	-	-	-	-	-	44.3	-	-	-	-	-	-
Manganese (total)	0.411-5.55	7	-	-	-	-	-	5.55	0.978	0.411	1.39	1.35	0.557	1.34
Sodium (total)	31.6-129	7	-	-	-	-	-	71.5	80.4	31.6	77.2	129	97	126
Sample Results in mg/L														
Iron (dissolved)	0.65-13.4	5	-	-	-	-	-	13.4	0.65	-	-	6.19	1.44	8.99
Magnesium (dissolved)	37.6	1	-	-	-	-	-	37.6	-	-	-	-	-	-
Manganese (dissolved)	0.429-5.63	6	-	-	-	-	-	5.63	0.881	-	0.901	1.31	0.429	1.29
Sodium (dissolved)	35.1-121	7	-	-	-	-	-	71.1	80.5	35.1	76.3	121	97.8	117

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

TABLE 16

Project Permit Listing

To Be Updated as Project Progresses

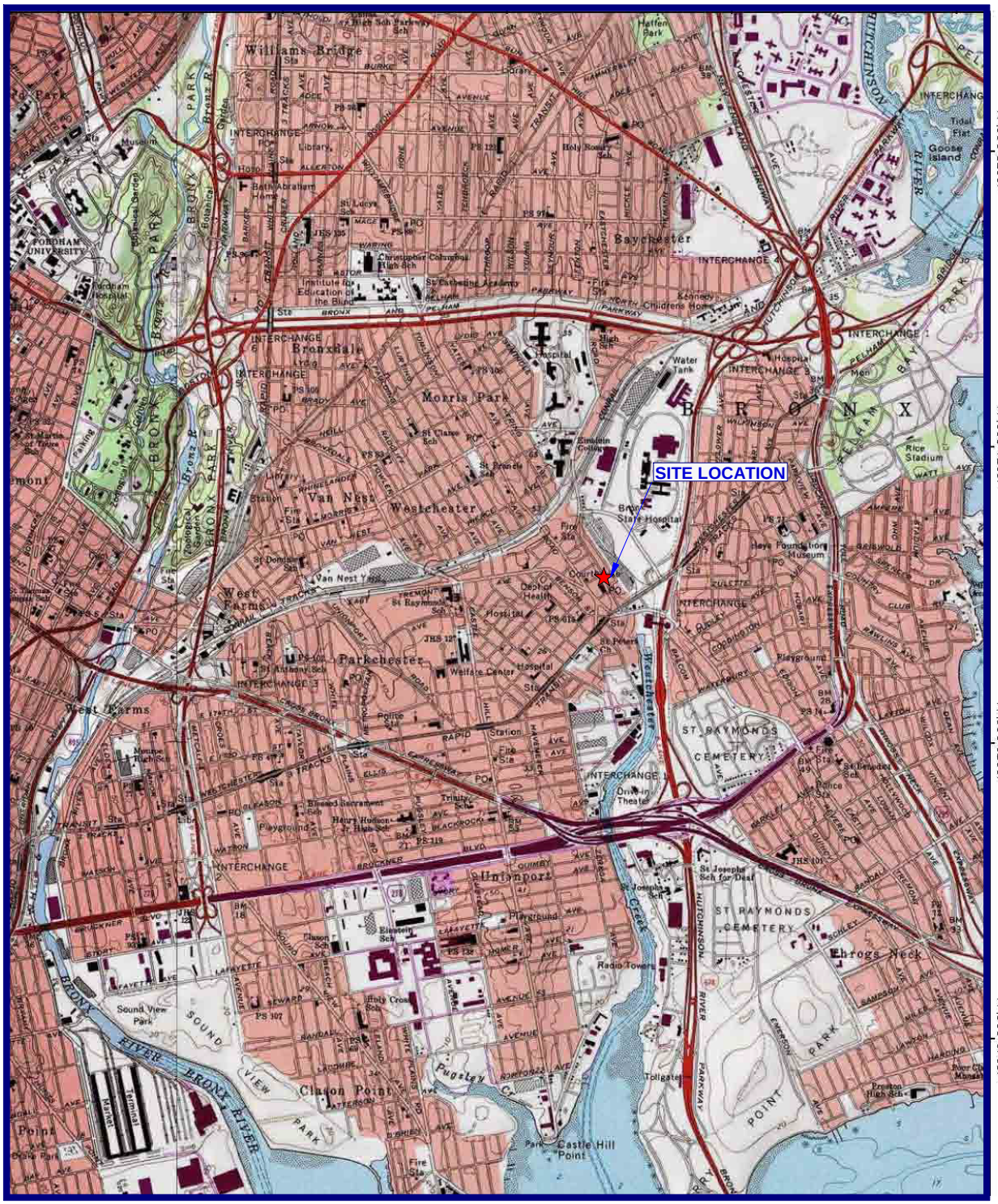
Permit	*Permit Number*	*Originating Agency*	*Pursuant to*	*Issued*	*Expires*	*Contact Phone*

Note: This list will be updated as the project progresses

Table 17
Emergency Contact List

General Emergencies		911
NYC Police		911
NYC Fire Department		911
Montefiore Westchester Square Campus		(718) 430-7300
NYSDEC Spills Hotline		1-800-457-7362
NYSDEC Project Manager		(518) 402-9687
NYC Department of Health		(212) 676-2400
National Response Center		1-800-424-8802
Poison Control		1-800-222-1222
EBC Project Manager	Maggie Ellis	(631) 504-6000
EBC BCP Program Manager	Charles Sosik	(631) 504-6000
EBC Site Safety Officer	Thomas Gallo	(631) 504-6000
Remedial Engineer	Ariel Czemerinski	(516) 987-1662
Developer	Craig Livingston	(646) 706-5502
Construction Manager	To be determined	

FIGURES



USGS Flushing, NY Quadrangle 1995, Contour Interval = 10 feet

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Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx NY

FIGURE 1 SITE LOCATION MAP

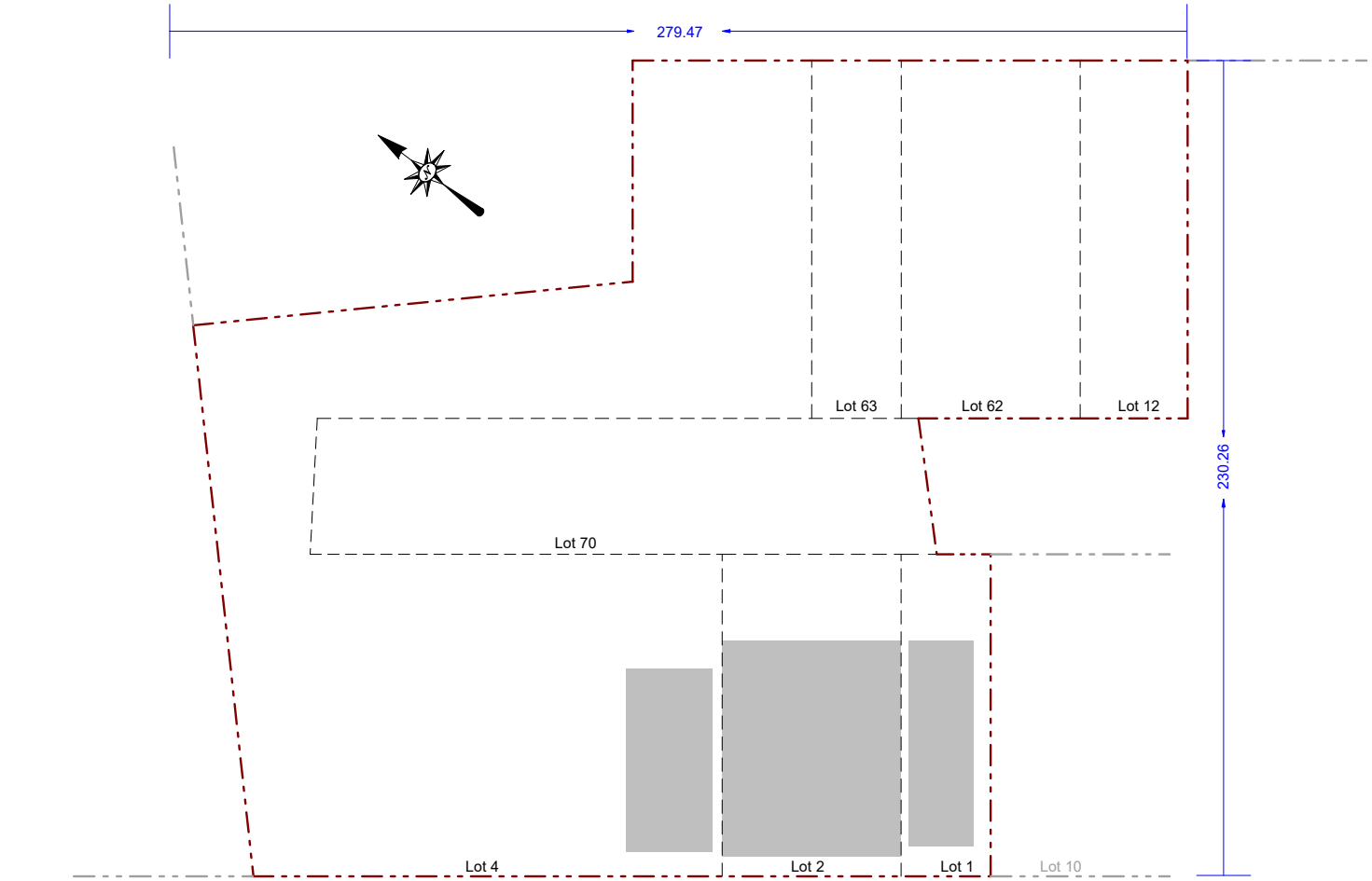

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Figure No. 2

Site Name: Former Boyle Auto Wreckers Site

Site Address: 1346 Blondell Avenue, Bronx NY

Drawing Title: Site Plan

Note: No sensitive receptors (i.e. nusrsing homes, day care centers, etc.) have been identified downgradient of the Site.

0 50 100 200

1 Inch = 50 feet

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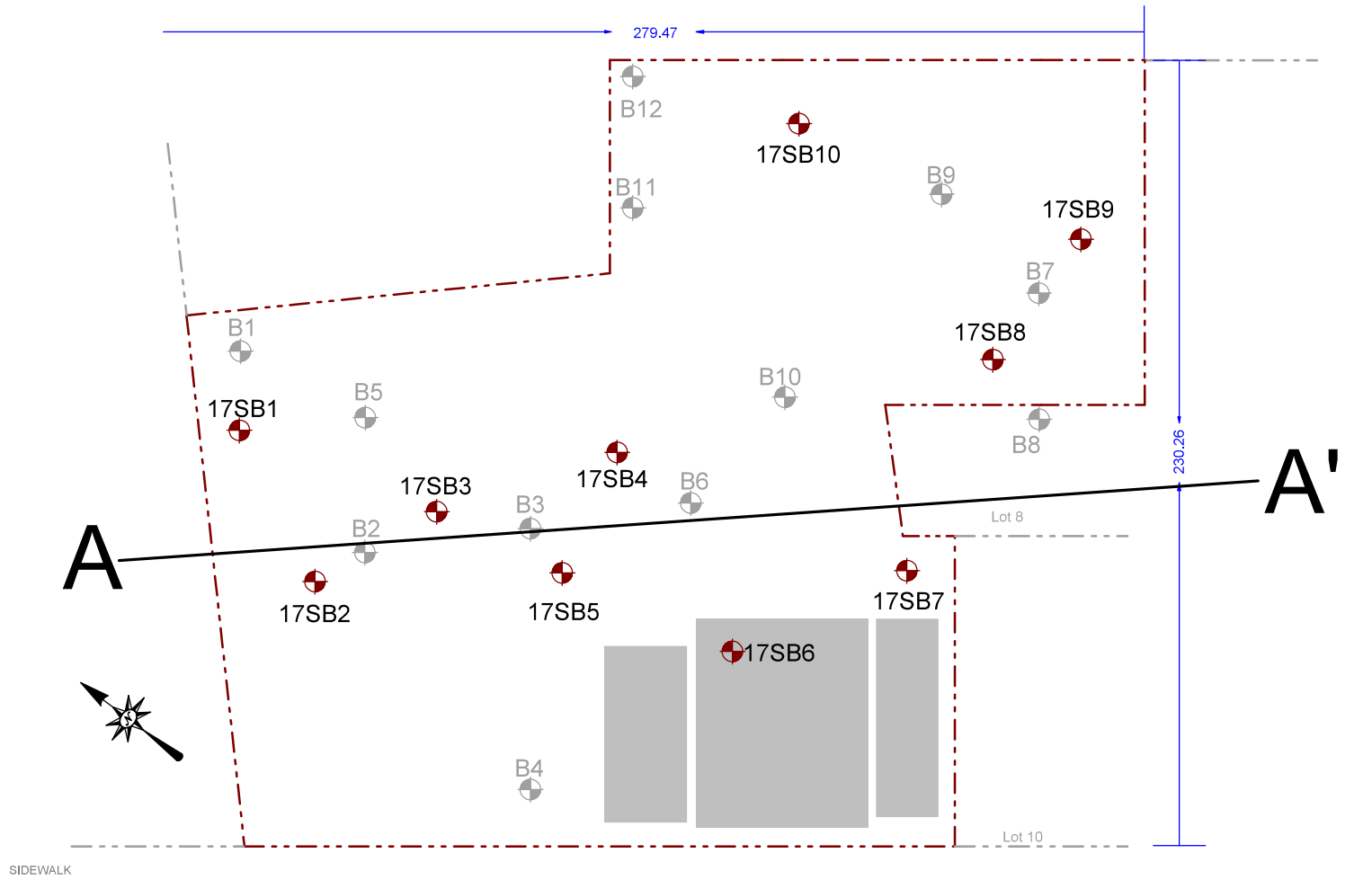
Figure No. 3

Site Name: Former Boyle Auto Wreckers Site

Site Address: 1346 Blondell Avenue, Bronx NY

Drawing Title: Surrounding Properties



KEY:

- Site Boundary
- Bx — 2016 Phase II Soil Boring Location
- 17SBx — Soil Boring Location

SCALE:

0 25 50

1 inch = 50 feet

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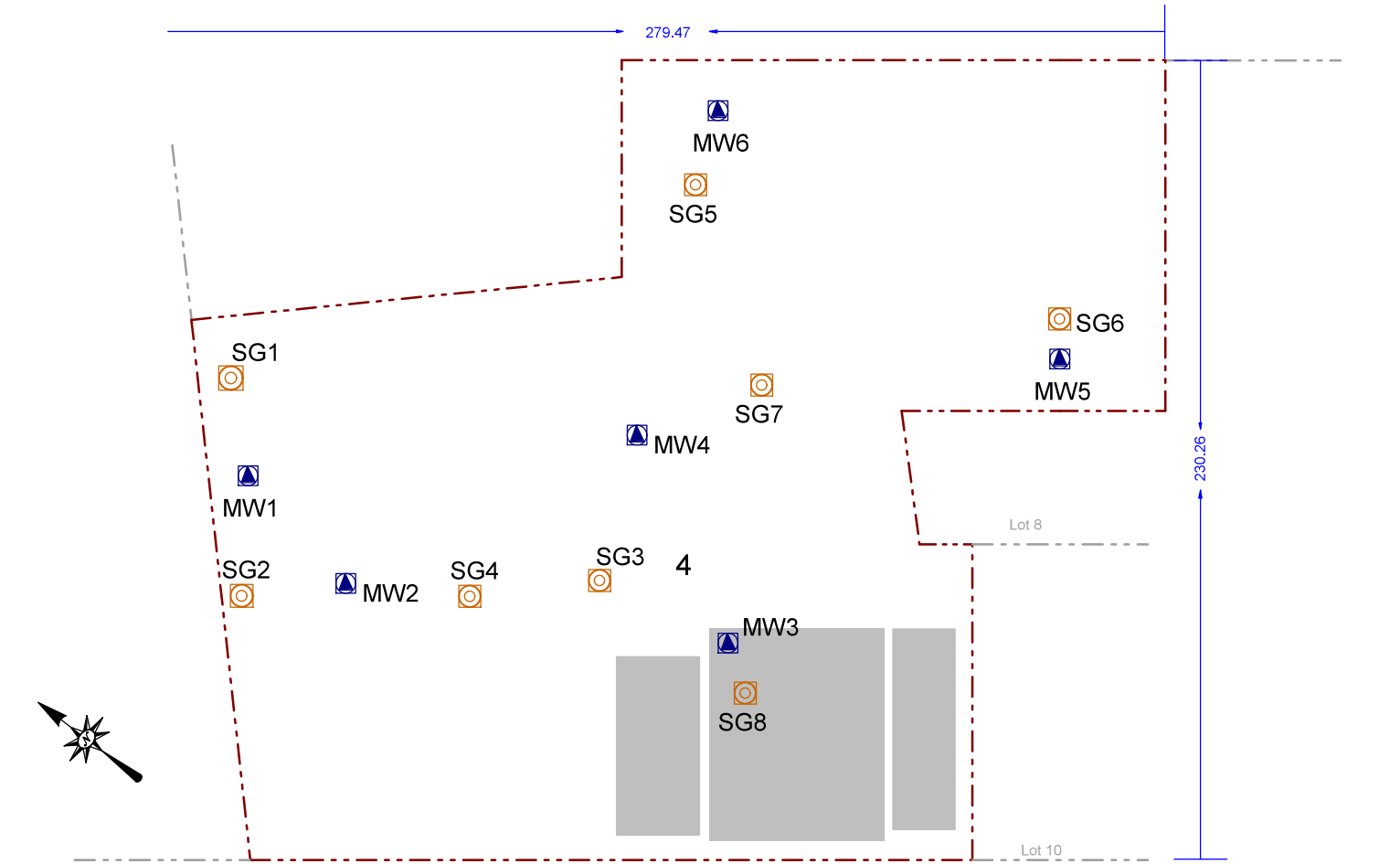
Figure No. 4

Site Name: Former Boyle Auto Wreckers Site

Site Address: 1346 Blondell Avenue, Bronx NY

Drawing Title: Soil Boring Locations



KEY:

- Site Boundary
- MWx Monitoring Well Location
- SGx Soil Gas Location

SCALE:

0 25 50

1 inch = 50 feet

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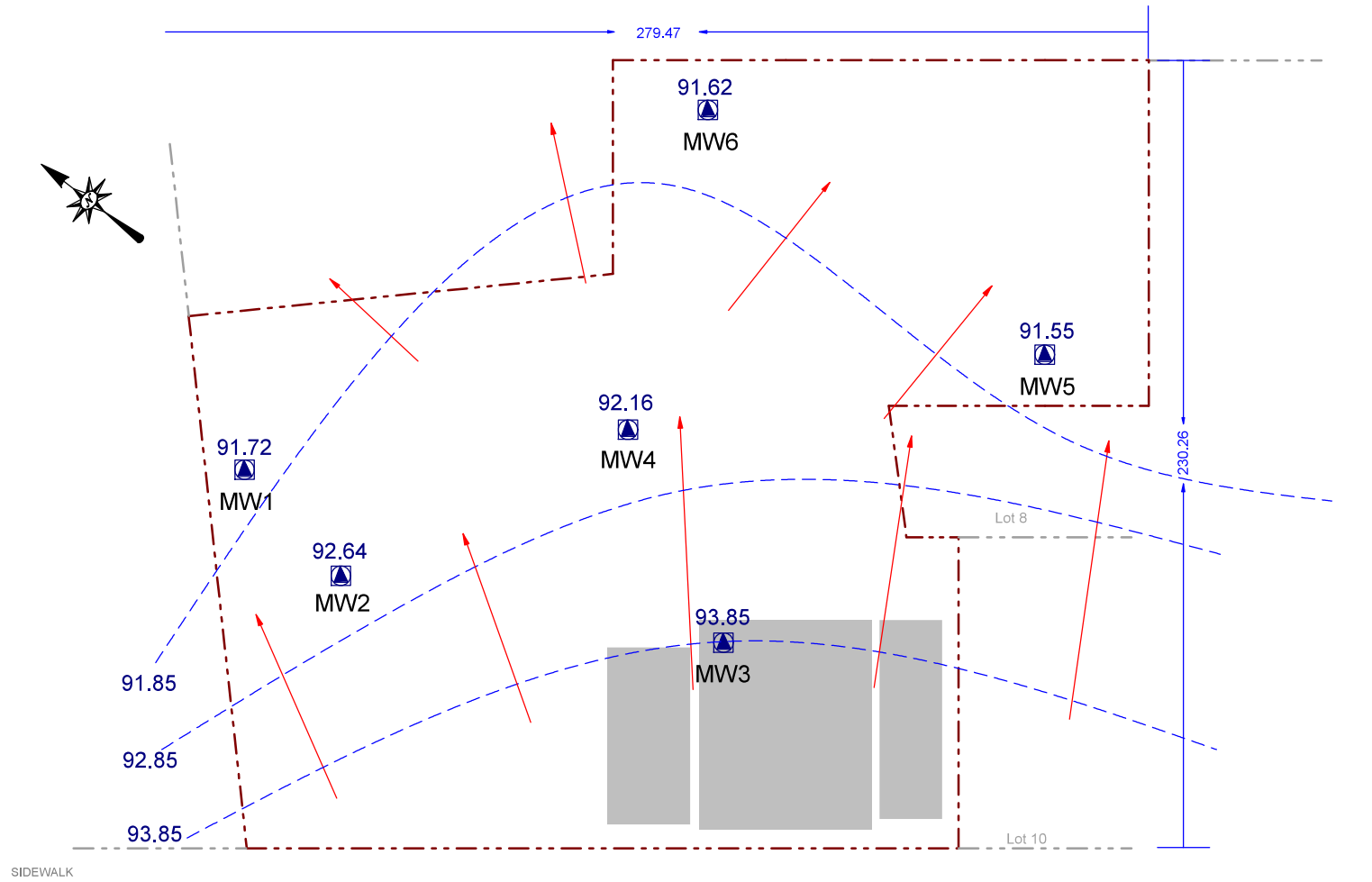
Figure No. 5

Site Name: Former Boyle Auto Wreckers Site

Site Address: 1346 Blondell Avenue, Bronx NY

Drawing Title: Soil Gas and Groundwater Sampling Locations



BLONDELL AVENUE

KEY:

- Site Boundary
- MWx Monitoring Well Location
- Direction of Groundwater Flow

SCALE:

0 25 50

1 inch = 50 feet

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Figure No. 6

Site Name: Former Boyle Auto Wreckers Site

Site Address: 1346 Blondell Avenue, Bronx NY

Drawing Title: Groundwater Contour Map

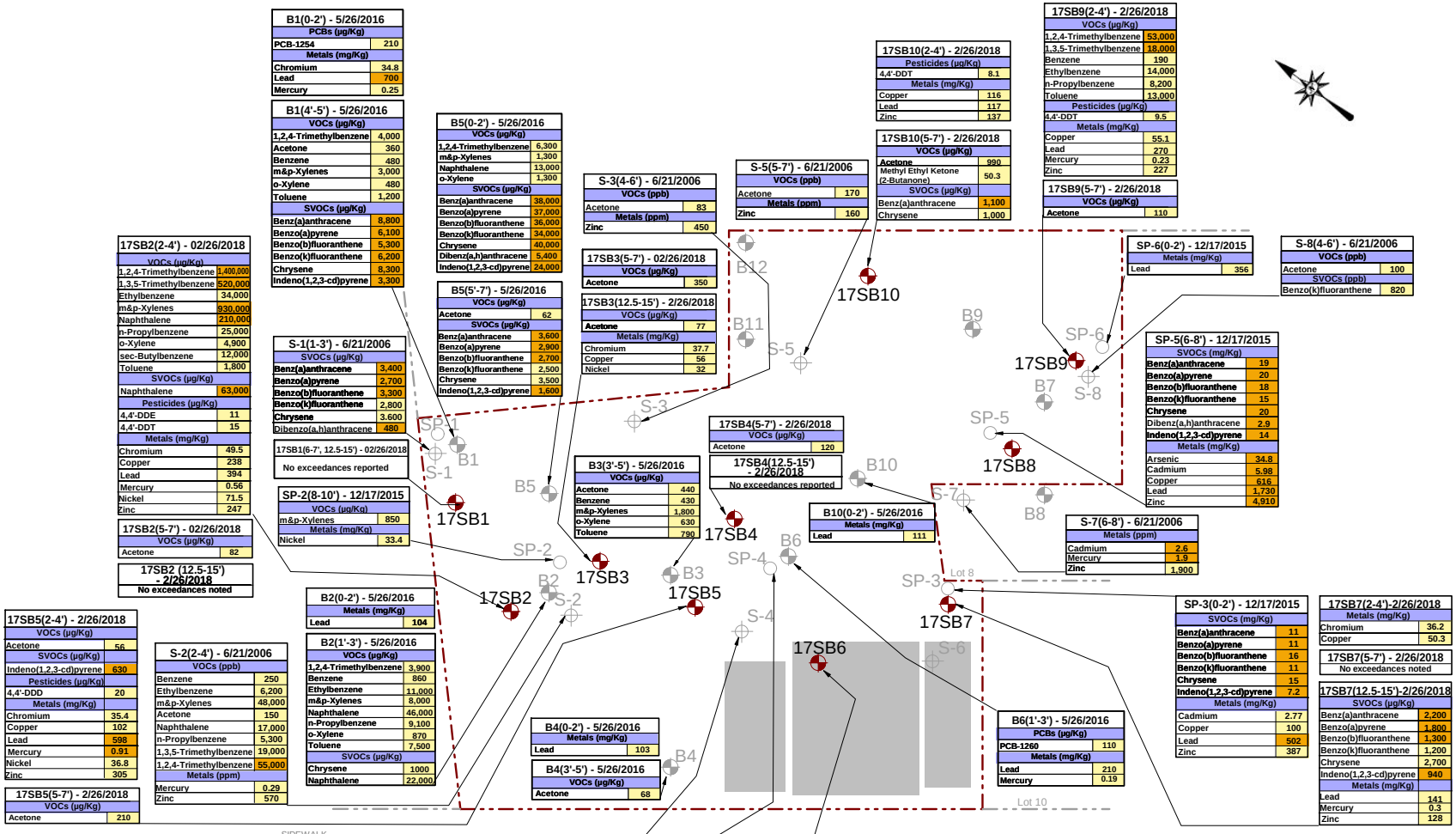

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Figure No. 7

Site Name: Former Boyle Auto Wreckers Site

Site Address: 1346 Blondell Avenue, Bronx NY

Drawing Title: Soil Exceedance Figure

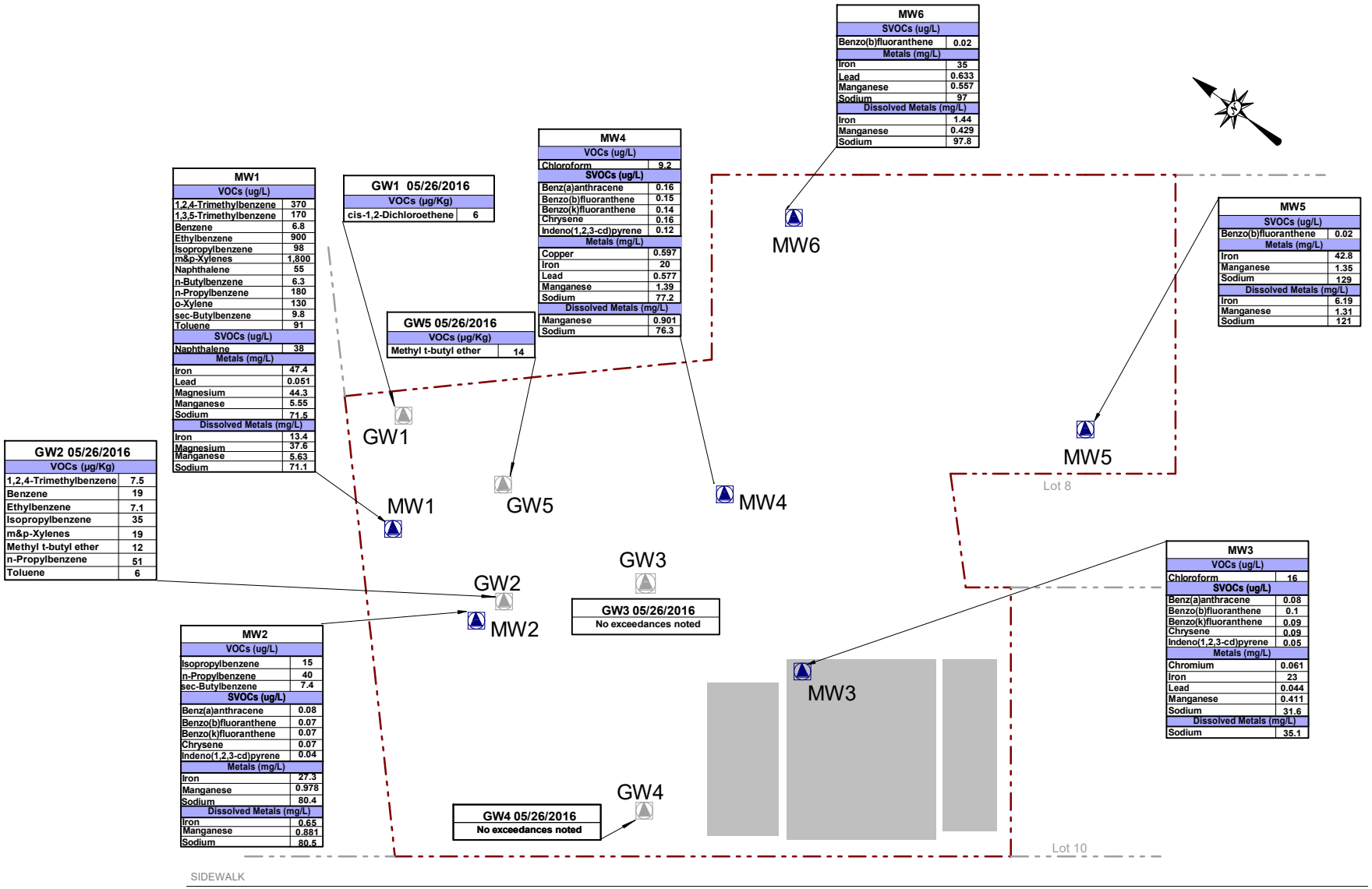

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Figure No. 8

Site Name: Former Boyle Auto Wreckers Site

Site Address: 1346 Blondell Avenue, Bronx NY

Drawing Title: Groundwater Exceedance Map

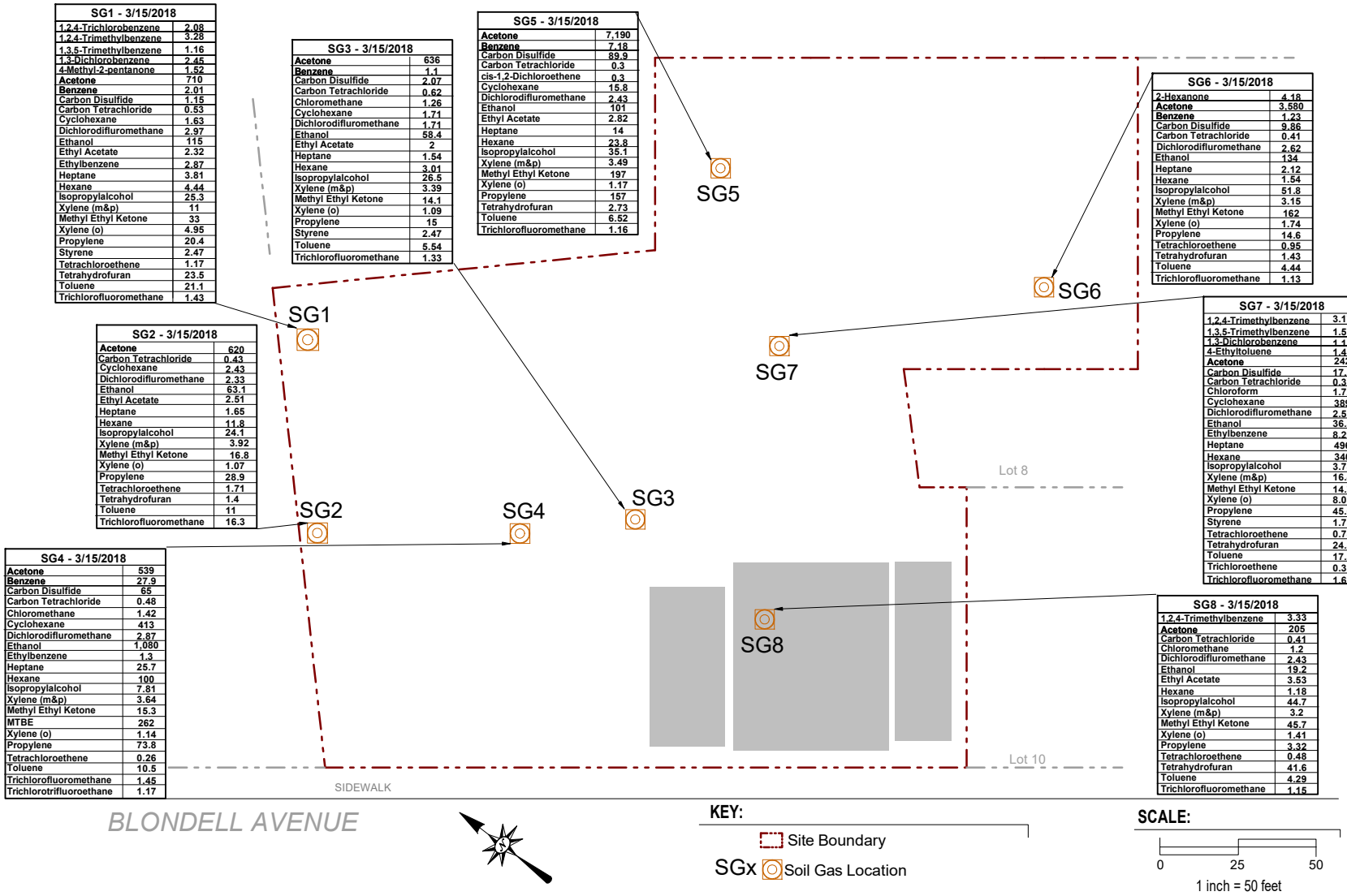

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Figure No. 9

Site Name: Former Boyle Auto Wreckers Site
Site Address: 1346 Blondell Avenue, Bronx NY
Drawing Title: Soil Gas Detections

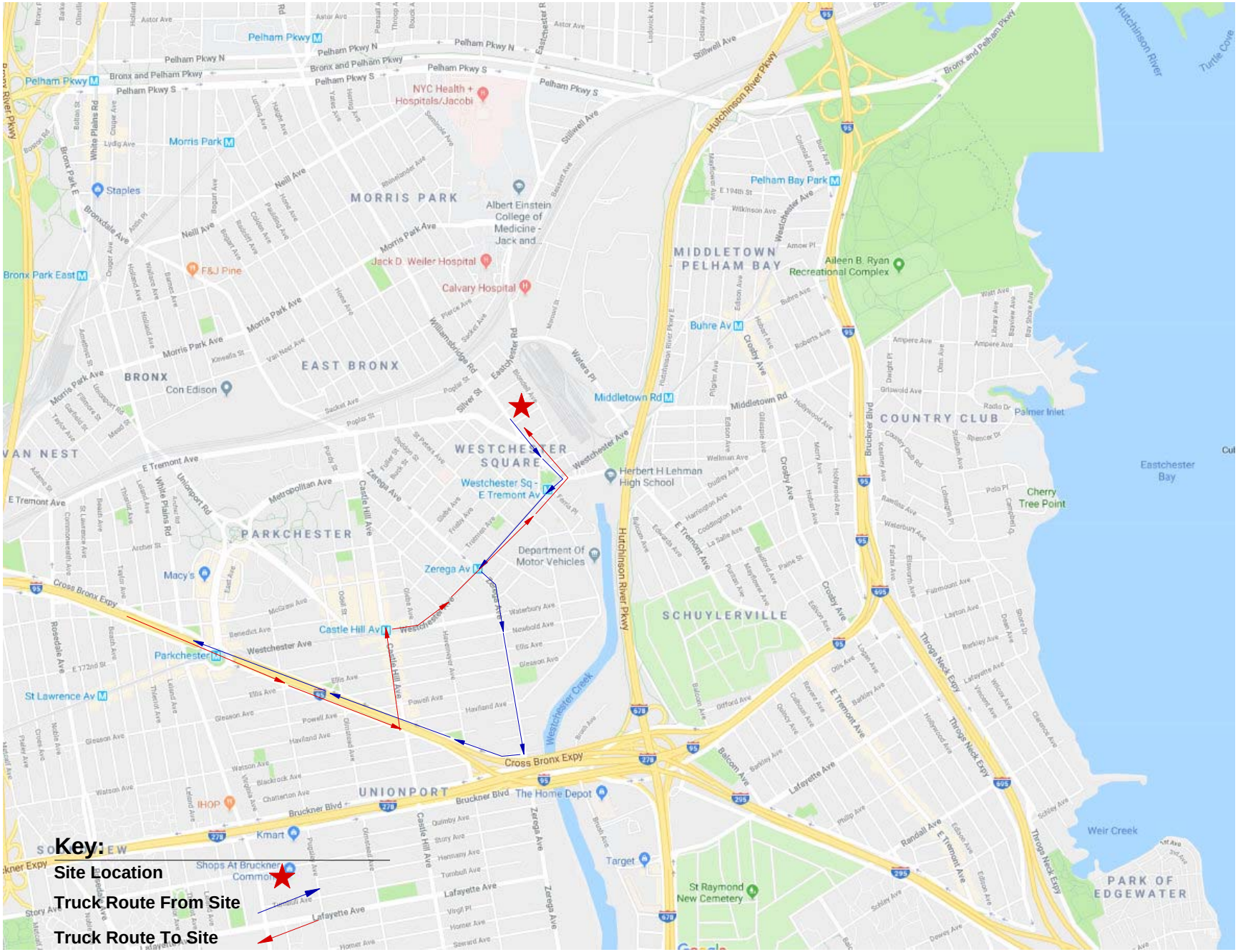

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Figure No. 10

Site Name: FORMER BOYLE AUTO WRECKERS SITE
Site Address: 1346 BLONDELL AVENUE, BRONX, NY
Drawing Title: TRUCK ROUTE

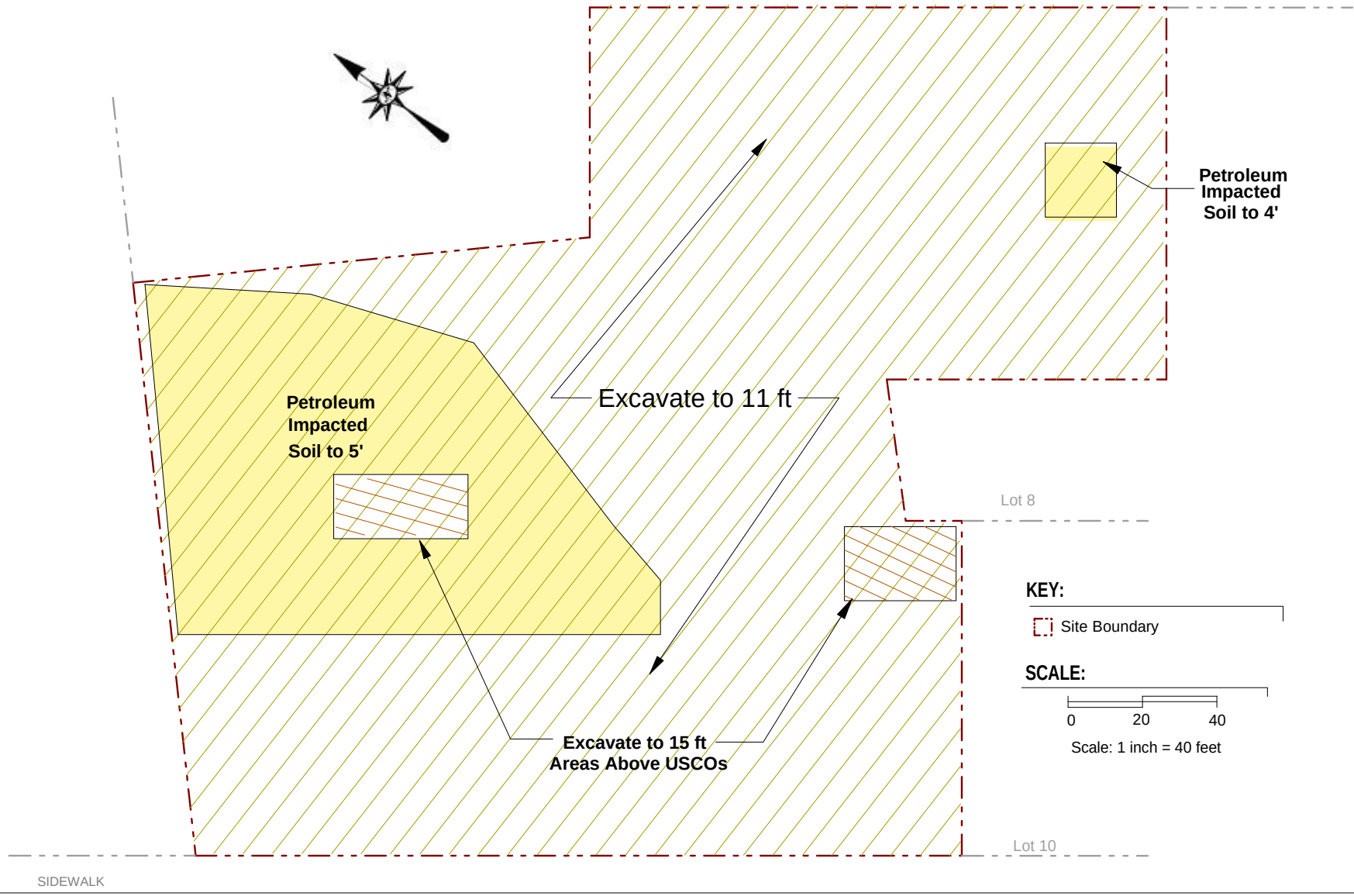

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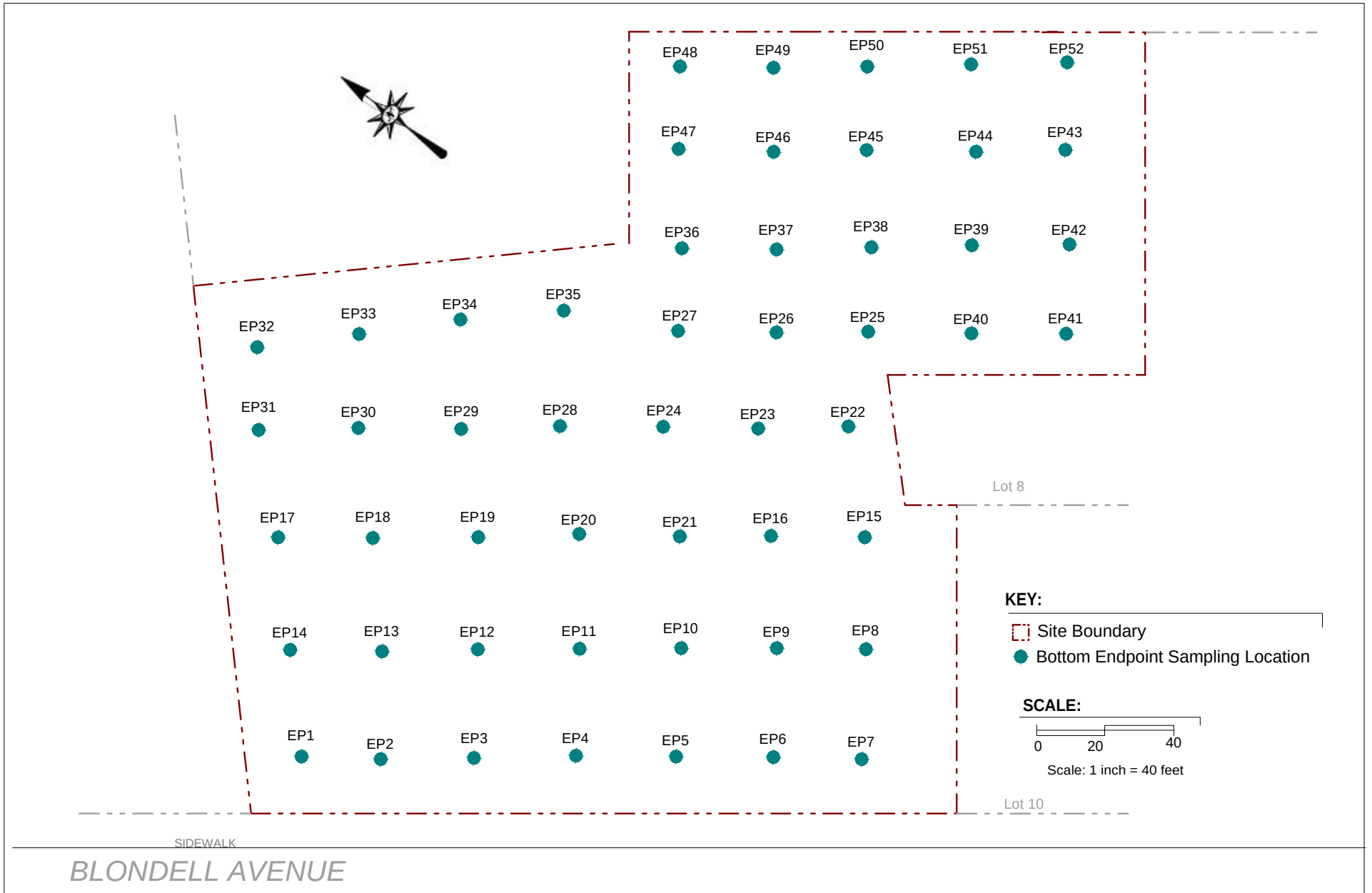
Figure No. **11**

Site Name: Former Boyle Auto Wreckers Site
Site Address: 1346 Blondell Avenue, Bronx NY
Drawing Title: Excavation Plan



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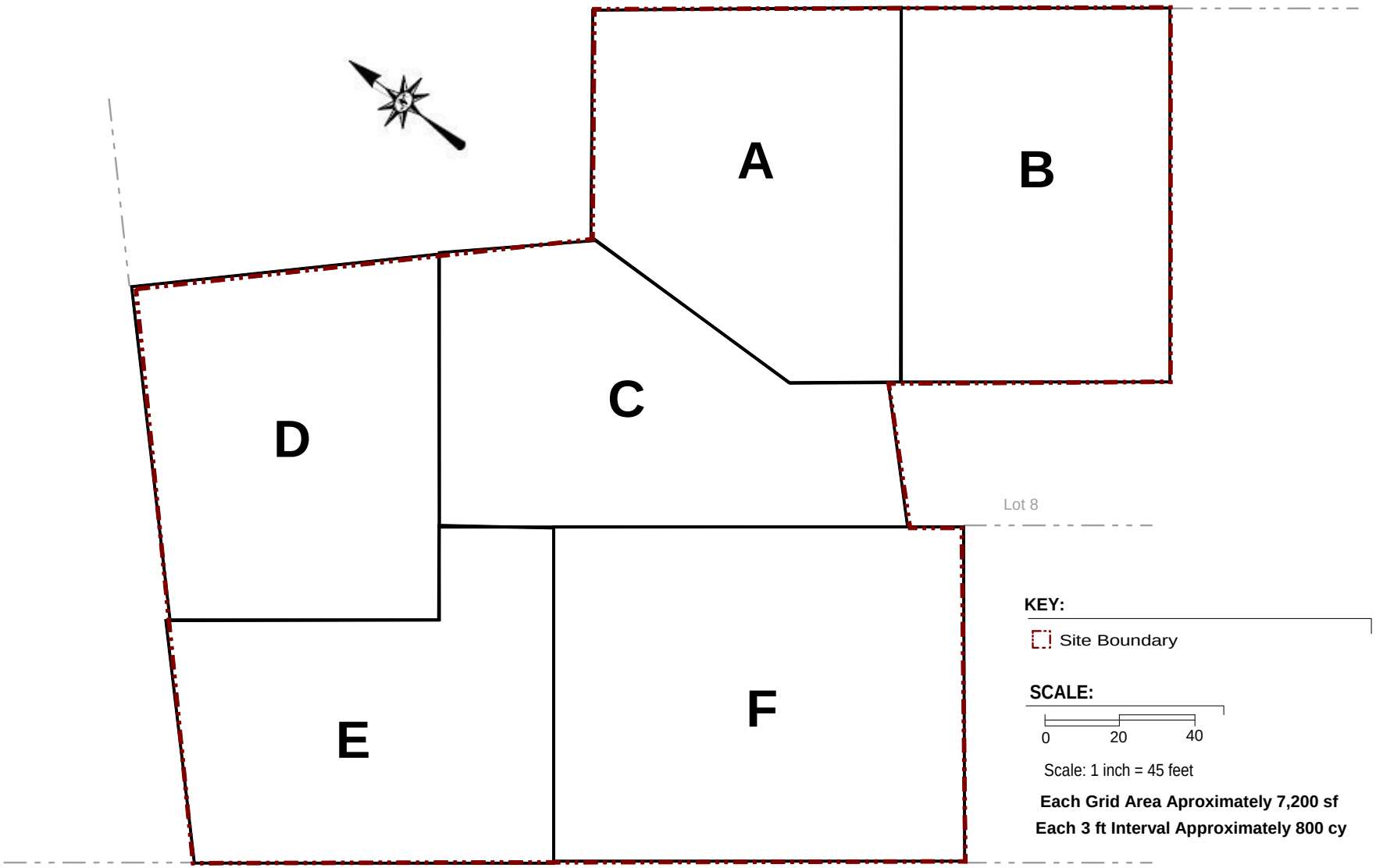
Astoria, NY 11105

Figure No.
12

Site Name: Former Boyle Auto Wreckers Site
Site Address: 1346 Blondell Avenue, Bronx NY
Drawing Title: Endpoint Sampling Map



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Astoria, NY 11105

Figure No.
13

Site Name: FORMER BOYLE AUTO WRECKERS SITE
Site Address: 1346 BLONDELL AVENUE, BRONX NY
Drawing Title: GRID MAP

ATTACHMENT A
Health and Safety Plan

FORMER BOYLE AUTO WRECKERS SITE

1346 BLONDELL AVENUE
BRONX, NEW YORK 10461
Block 4133, Lot 12 and Block 4134, Lots 1, 2, 4, 62, 63 and 70

CONSTRUCTION HEALTH AND SAFETY PLAN

May 2019

Prepared for:
Exact Blondell LLC
477 Madison Avenue, 6th Floor
New York, NY 10022

Prepared by:

EBC
ENVIRONMENTAL BUSINESS CONSULTANTS
1808 Middle Country Road
Ridge, NY 11961

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CONSTRUCTION HEALTH AND SAFETY PLAN
Former Boyle Auto Wreckers Site
1346 Blondell Avenue, Bronx, New York

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CONSTRUCTION HEALTH AND SAFETY PLAN
Former Universal Scrap Metal Processors Corp.
1181 Flushing Avenue, Brooklyn, New York

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 Actions at 1181 Flushing Avenue, 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 thdeir 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 1346 Blondell Avenue, Bronx, New York 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 owner 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.

Work performed under the remedial action will not involve confined space entry since the excavations will be large and sloped back in accordance with NYCDOB shoring requirements and will not have a limited or restricted means for entry or exit.

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.

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- Emergency procedures to be followed in case of fire, explosion and sudden release of hazardous gases.

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 CHASP 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
Ms. Maggie Ellis	Project Manager	1808 Middle Country Rd Ridge, NY 11961	(631) 504-6000
Mr. Charlie Sosik	Site Safety Coordinator	1808 Middle Country Rd Ridge, NY 11961	(631) 504-6000
Mr. Thomas Gall	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.

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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 street address for the Site is 1346 Blondell Avenue, Bronx, NY (Figure 1). The Site is located in the City of New York in the Pelham Bay neighborhood of the Borough of the Bronx. The Site is comprised of seven tax parcels which were recently merged into one lot. The former seven lots are identified as Block 4133, Lot 12 and Block 4134 Lots 1, 2, 4, 62, 63 and 70 totaling 46,360 sq. ft (1.064 acres). The Site consists of approximately 206 feet of street frontage on Blondell Avenue. Currently the property is improved with a 1-story 2,920 square foot (footprint) masonry commercial building constructed in 1920, a 1-3/4-story 684 square foot (footprint) wood frame shed building constructed in 1931 and a 1-1/2 story 490 square foot (footprint) wood frame house constructed in 1930. The buildings are currently unoccupied, but the property has historically been used as an auto wrecking yard, auto repair shop, motorcycle repair shop, auto body shop and as a truck / equipment yard.

2.1 Previous Investigations

Environmental investigations performed at the Site include the following:

- Phase II Subsurface Investigation Report - AKRF, Inc. July 2006
- Phase II Environmental Site Assessment Report - HydroTech Environmental Corp., December 2015
- Subsurface Investigation Data Summary - Environmental Business Consultants, May 2016
- NYSDEC Spill Files – NYSDEC, Multiple Dates

2.1.1 July 2006 - Phase II Subsurface Investigation Report (AKRF)

A Phase II Subsurface Investigation Report was prepared by AKRF Inc. in July, 2006. The report included a summary of a Phase I Environmental Site Assessment which was prepared by AKRF in February 2006.

AKRF identified the following environmental conditions:

- The subject property was listed twice on the closed status New York State Department of Environmental Protection (NYSDEC) spills database in connection with Spill Numbers 9708308 and 9710270. On October 8, 1997, Spill No. 9708308 was opened when an unknown quantity of gasoline and waste oil was reported spilled onto the ground surface. The listing reported that spills from vehicles were a regular occurrence at the site and that tires were burned on a daily basis. This spill was closed in March 1998. Spill No. 9710270 was reported on December 8, 1997 in which an unknown material and quantity was spilled at the property. The spill was closed in July 2003. According to John Mercorella, a representative of the property owner, an oil and gasoline spill had occurred in the northeastern portion of the site several years ago. Based on the details provided, this spill may be associated with the database listed on-site spill reported in October 1997, though this could not be positively confirmed. The surface pavement at the site was observed to be in poor condition and a portion of the site was surfaced with gravel. Surficial oil staining was observed by AKRF on visible exterior portions of the paved and gravel surfaces. These reported spills or releases from vehicles could have affected subsurface soil and groundwater.

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- A 275-gallon storage tank was located in the basement of the northernmost dwelling at the site. Based on observations made during the site visit by AKRF, this tank may be a used oil tank operated by the south-adjacent motorcycle repair shop. A 275-gallon used oil aboveground storage tank was listed on the New York State Department of Environmental Conservation (NYSDEC) Petroleum Bulk Storage (PBS) database for Boyle Auto Wreckers, Inc., a previous tenant of the 1346 Blondell Avenue property. It is possible that this listing represents the 275-gallon aboveground storage tank located in the basement of the residential dwelling. However, AKRF did not have access to the motorcycle repair shop building. Other petroleum storage tanks may be present inside this structure that could be related to the PBS listing for the subject site. In addition, a violation for an unregistered waste oil tank at the site was issued by the NYSDEC, as noted in the December 1997 spill listing for the site.

- The study site was labeled as an "Auto Junk Yard" on historic Sanborn maps from 1977 to 1996. Historic operations as a junk yard may have affected the subsurface soil and/or groundwater at the property.

- Historical land use maps, the regulatory database search, and results of the site reconnaissance indicated that the surrounding area has a long history of auto-related, manufacturing and light industrial operations. Such land use included the presence of historic gasoline filling stations directly across Ponton Avenue to the north and across Blondell Avenue to the southwest. Several fuel oil spills were noted in the NY SPILLS database in the area surrounding the subject site. Known and potential releases from these sites may have affected the local groundwater quality.

The Phase II investigation completed by AKRF included the installation of 8 soil borings and the collection and analysis of 8 soil samples and 5 groundwater samples. Overburden soil consisted entirely of fill material to the groundwater surface which was encountered at a depth of approximately six feet below grade.

AKRF concluded the following:

"Laboratory analytical results indicated that volatile organic compounds (VOCs) were detected in soil samples S-2, S-3, and S-4 that are typically associated with gasoline, including benzene, ethylbenzene, toluene, and xylenes (BTEX), as well as naphthalene and several benzene-related compounds. The laboratory results and the field screening results, which included the detection of petroleum-like odors and elevated photoionization detector (PID) readings, suggest that releases of gasoline and/or other petroleum products in these areas have affected soil and groundwater."

"The results of the analyses for VOCs and SVOCs in groundwater suggest potential gasoline contamination to groundwater in samples collected from borings S-2, S-3, S-4, and to a lesser extent in S-8, where only methyl tert butyl ether (MTBE) was detected. The concentration of gasoline-related contaminants on the northern portion of the site may suggest that contaminated groundwater could have migrated on-site from the historic gasoline station properties to the north identified by AKRF's Phase IESA dated February 2006. Specifically, one of these historic sites was identified directly across Ponton Avenue from the subject site. These historic gasoline

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station properties were located in a presumed upgradient groundwater flow direction. However, similar compounds and petroleum-like odors and elevated PID readings were detected in the soil samples from these soil boring locations indicating that reported and/or unreported on-site petroleum spills may have been the main source of the groundwater impact."

"In addition, the site has a history of petroleum use related to automotive and motorcycle repair operations. The New York State Department of Environmental Conservation (NYSDEC) spill listings for the site note the repeated discharge of gasoline and oil to the ground surface. The detected concentrations of metals in the soil, including those above the TAGM guidelines and established eastern U.S. background levels, may be attributable to the urban fill at the site and not necessarily to environmental contamination from historic on-site operations. However, the elevated lead levels may be related to the past use and release of leaded gasoline or lead-containing batteries. Based on the results, elevated levels of lead may exceed the threshold for characterization as hazardous waste under Title 40 of the Code of Federal Regulations when reanalyzed for Toxicity Characteristic Leaching Procedure (TCLP), an analysis for the characterization of waste for disposal. Such soil may require management as hazardous waste if excavated as part of site development activities."

"Soil excavated as part of any future site development activities at the site should be managed in accordance with all applicable regulations. Soil intended for off-site disposal should be tested in accordance with the requirements of the receiving facility. Transportation of material leaving the site for off-site disposal should be in accordance with federal, state and local requirements covering licensing of haulers and trucks, placarding, truck routes, and manifesting, etc. If dewatering is necessary for construction and development purposes, groundwater may require treatment as part of the dewatering handling and discharge process. Prior to initiating any dewatering activities, a groundwater sample should be analyzed to insure it meets the New York City Department of Environmental Protection (NYCDEP) criteria for effluent to municipal sewers, should these be the selected course of action for development."

2.1.2 December 2015 – Phase II Environmental Site Assessment Report (HydroTech)

A Phase II investigation consisting of six soil borings and the collection and analysis of six soil samples and three groundwater samples.

Based on the results obtained during the investigation, HydroTech concluded the following:

- Petroleum related VOCs were detected in soil samples beneath the northern portion of the Site at concentrations exceeding their respective Unrestricted SCOs and a petroleum odor was also detected in these samples during soil screening;

- SVOCs characterized as PAHs and metals most likely related to urban fill materials were detected in soil throughout the Site at concentrations greater than their respective regulatory standards.

- No VOCs or SVOCs were identified in the groundwater above their respective GQS.

- Three dissolved metals including magnesium, manganese and sodium were identified in the groundwater at concentrations exceeding their respective GQS.

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- The impacts identified during this investigation appear to the effects of the closed NYSDEC spill incident.

2.1.3 May 2016 – Subsurface Investigation Data Summary (EBC)

A supplemental subsurface investigation consisting of 11 borings with analysis of 7 soil and 5 groundwater samples was completed in May 2016.

Laboratory analysis included VOCs, PAHs, pesticides / PCBs and metals for all soil samples and VOCs for the groundwater samples. The results of the investigation identified petroleum contamination (VOCs) in four of seven samples collected with petroleum SVOC contamination reported in one of the four samples with elevated VOCs. Fill material was reported to be present at depths ranging from 2 to 7 ft below the surface. One or more metals and /or SVOCs were reported above restricted residential SCOs in the fill samples.

Groundwater at the Site is present at a depth of approximately 5-6 feet below surface grade. Petroleum VOCs were reported above groundwater standards in one of the samples with Chlorinated VOCs (CVOCs) reported in another sample.

2.1.4 NYSDEC Spill Files

Two NYSDEC spill cases are associated with the property and are identified as Spill Numbers 9708308 and 9710270. Spill Number 9708308 was reported on October 15, 1997. According to the NYSDEC, a former automobile junk yard at the property was spilling oil from used vehicles onto the ground. The NYSDEC investigated the spill incident and did not observe any oil-stained pavement at the property. This Spill case was closed by the NYSDEC on March 3, 1998. Spill Number 9710270 was reported on December 8, 1997. According to the NYSDEC, a former automobile junk yard at the property was burning used automobile tires and spilling oil onto on the ground. The NYSDEC investigated the spill incident and a full site remediation was conducted. This Spill case was closed by the NYSDEC on July 14, 2003. No other spill cases were reported by the NYSDEC.

2.2 Redevelopment Plans

The redevelopment project consists of the construction of a new nine story mixed-use building. The project will include 212 affordable housing apartment units, 22,000 square feet (sf) of retail space and underground parking for 90 cars. Plans include a full height cellar level requiring excavation to a depth of approximately 11 ft below grade. The cellar level will be used for meter rooms and storage space. With groundwater present at 3.3-5.49 feet below grade, dewatering will be required during construction of the building's foundation.

2.3 Description of Remedial Action

Site activities included within the Remedial Action that are included within the scope of this CHASP include the following:

1. Excavation of soil/fill exceeding Track 1 unrestricted use SCOs as listed in Table 1 to depths as great as 11 feet below grade site-wide and to 15 within the petroleum impacted areas;

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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 VOC impacted 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 Track 1 cleanup is not achieved implementation of a Site Management Plan (SMP) for long term maintenance of the Engineering Controls.
8. If Track 1 cleanup is not achieved, an Environmental Easement will be filed against the Site to ensure implementation of the SMP.

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 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.

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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.

3.2.1 Heat Stress

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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.

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

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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

"Urban 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 (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyl's (PCBs), and heavy metals such as arsenic, chromium, lead and mercury.

Based on the findings of the Remedial Investigation and the inherent properties of urban fill, the following compounds are considered for the site as potential contaminants: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, and heavy metals.

Volatile organic compounds reported to be present in soil, soil gas and/or groundwater include the following:

1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2-Chlorotoluene	2-Isopropyltoluene
4-Chlorotoluene	Acetone	Benzene	Carbon Disulfide
Chloroform	Cis-1,2-Dichloroethene	Ethylbenzene	Isopropylbenzene
m&p-Xylenes	Methyl Ethyl Ketone	Methyl t-butyl ether	Methylene chloride
Naphthalene	n-Butylbenzene	n-Propylbenzene	o-Xylene
p-Isopropyltoluene	sec-Butylbenzene	Stryene	tert-Butyl alcohol
tert-Butylbenzene	Tetrachloroethene	Tetrahydrofuran	Toluene
Trichloroethene			

Semi-Volatile organic compounds reported to be present in soil and / or fill materials include the following:

2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene
Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene

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Benzo(k)fluoranthene	Benzyl butyl phthalate	Bis(2-ethylhexyl)phthalate	Chrysene
Dibenz(a,h)anthracene	Dibenzofuran	Fluoranthene	Fluorene
Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene

Pesticides reported to be present in soil and / or fill materials include the following:

4,4'-DDD	4,4'-DDE	4,4'-DDT

PCBs reported to be present in soil and / or fill materials include the following:

PCB-1254	PCB-1260

Metals reported to be present in fill materials include the following:

Aluminum	Arsenic	Barium	Beryllium
Cadmium	Calcium	Chromium	Cobalt
Copper	Iron	Lead	Magnesium
Manganese	Mercury	Nickel	Potassium
Silver	Sodium	Vanadium	Zinc

The primary routes of exposure to these contaminants are inhalation, ingestion and absorption. **Appendix C** includes information sheets for suspected chemicals that may be encountered at the site.

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 office will employ dust monitoring using a particulate monitor (Miniram 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.

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3.3.3 Organic Vapors

Elevated levels of chlorinated VOCs were detected in soil, soil gas and groundwater 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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- chemical resistant coveralls;
- steel-toe and steel-shank workboots;
- chemical resistant overboots or disposable boot covers;
- disposable inner gloves;
- disposable outer gloves;
- hard hat; and,
- ankles/wrists taped.

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.

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Organic Vapors (PID)	LEL %	Responses
0-1 ppm above background	0%	• Continue excavating • Level D protection • Continue monitoring every 10 minutes
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. **It is expected that the entire fenced in area of the Site will be the exclusion zone, with the decontamination zone the Site entrance.** The support zone will be the office trailer.

Tasks requiring OSHA 40-hour Hazardous Waste Operations and Emergency Response Operations training are carried out in the exclusion zone. The exclusion zone is defined by the site safety officer but will typically be a 50-foot area around work activities. 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.

6.2 General Site Work

An excavation contractor with appropriate experience, personnel and training (40 hr OSHA Hazardous Waste Operations and Emergency Response Operations - HAZWOPER) is required to perform the removal of the CVOC and naphthalene impacted soil. After this material is removed the contractor will remove historic fill and uncontaminated soil. The excavation contractor's on-site personnel engaged in historic fill and native soil removal will have a minimum of 24 hour HAZWOPER training.

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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
Montefiore Westchester Square Campus	1-718-430-7300
NYSDEC Spills Division	1-800-457-7362
NYSDEC Division of Env. Remediation	1-718-482-4900
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 — Maggie Ellis (631) 504-6000
- Construction Superintendent — Abe Wurzberger (718) 887-9840 x304
- Site Safety Officer — Thomas Gallo (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.
- 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.

International Chemical Safety Cards

1,2,4-TRIMETHYLBENZENE

ICSC: 1433

Pseudocumene

C_9H_{12}

Molecular mass: 120,2

ICSC # 1433
CAS # 95-63-6
RTECS # DC3325000
UN # 1993
EC # 601-043-00-3
March 06, 2002 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable.	NO open flames, NO sparks, and NO smoking.	Alcohol-resistant foam, dry powder, carbon dioxide.
EXPLOSION	Above 44°C explosive vapour/air mixtures may be formed.	Above 44°C use a closed system, ventilation, and explosion-proof electrical equipment. 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!	
•INHALATION	Confusion. Cough. Dizziness. Drowsiness. Headache. Sore throat. Vomiting.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness. Dry skin.	Protective gloves.	Rinse skin with plenty of water or shower.
•EYES	Redness. Pain.	Safety spectacles.	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.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
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. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Personal protection: filter respirator for organic gases and vapours.	Fireproof. Separated from strong oxidants. Well closed. Keep in a well-ventilated room.	Xn symbol N symbol R: 10-20-36/37/38-51/53 S: 2-26-61 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 1433

International Chemical Safety Cards

1,2,4-TRIMETHYLBENZENE

ICSC: 1433

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on burning producing toxic and irritating fumes Reacts violently with strong oxidants causing fire and explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: (as mixed isomers) 25 ppm as TWA (ACGIH 2004). MAK: (as mixed isomers) 20 ppm 100 mg/m³ Peak limitation category: II(2) Pregnancy risk group: C (DFG 2004). OSHA PEL†: none NIOSH REL: TWA 25 ppm (125 mg/m^3) NIOSH IDLH: N.D. See: IDLH INDEX	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes the skin and the respiratory tract If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the central nervous system **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The liquid defats the skin. Lungs may be affected by repeated or prolonged exposure , resulting in chronic bronchitis The substance may have effects on the central nervous system blood See Notes.
PHYSICAL PROPERTIES	Boiling point: 169°C Melting point: -44°C Relative density (water = 1): 0.88 Solubility in water: very poor Relative vapour density (air = 1): 4.1	Relative density of the vapour/air-mixture at 20°C (air = 1): 1.01 Flash point: 44°C c.c. Auto-ignition temperature: 500°C Explosive limits, vol% in air: 0.9-6.4 Octanol/water partition coefficient as log Pow: 3.8
ENVIRONMENTAL DATA	The substance is toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish. 	

N O T E S

Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is suggested. See also ICSC 1155 1,3,5-Trimethylbenzene (Mesitylene), ICSC 1362 1,2,3-Trimethylbenzene (Hemimellitene), ICSC 1389 Trimethyl benzene (mixed isomers). 1,3,5-Trimethylbenzene (Mesitylene) is classified as a marine pollutant.

Transport Emergency Card: TEC (R)-30GF1-III
NFPA Code: H0; F2; R0;

ADDITIONAL INFORMATION

International Chemical Safety Cards

1,3,5-TRIMETHYLBENZENE

ICSC: 1155

Mesitylene
C_9H_{12}
Molecular mass: 120.2

ICSC # 1155
CAS # 108-67-8
RTECS # OX6825000
UN # 2325
EC # 601-025-00-5
March 06, 2002 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable.	NO open flames, NO sparks, and NO smoking.	Alcohol-resistant foam, dry powder, carbon dioxide.
EXPLOSION	Above 50°C explosive vapour/air mixtures may be formed.	Above 50°C use a closed system, ventilation, and explosion-proof electrical equipment. 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!	
•INHALATION	Confusion. Cough. Dizziness. Drowsiness. Headache. Sore throat. Vomiting.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness. Dry skin.	Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness. Pain.	Safety spectacles.	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.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
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. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. (Extra personal protection: filter respirator for organic gases and vapours.)	Fireproof. Separated from strong oxidants. Well closed. Keep in a well-ventilated room.	Marine pollutant. Xi symbol N symbol R: 10-37-51/53 S: 2-61 UN Hazard Class: 3 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

International Chemical Safety Cards

1,3,5-TRIMETHYLBENZENE

ICSC: 1155

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH CHARACTERISTIC ODOUR. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes on burning producing toxic and irritating fumes. Reacts violently with strong oxidants causing fire and explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV (as mixed isomers): 25 ppm; (ACGIH 2001). MAK (all isomers): 20 ppm; 100 mg/m^3; class II 1 © (2001) OSHA PEL†: none NIOSH REL: TWA 25 ppm (125 mg/m^3) NIOSH IDLH: N.D. See: IDLH INDEX	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster. **EFFECTS OF SHORT-TERM EXPOSURE:** The substance is irritating to the eyes the skin and the respiratory tract If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the central nervous system. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The liquid defats the skin. Lungs may be affected by repeated or prolonged exposure, resulting in chronic bronchitis. The substance may have effects on the central nervous system blood See Notes.
PHYSICAL PROPERTIES	Boiling point: 165°C Melting point: -45°C Relative density (water = 1): 0.86 Solubility in water: very poor Vapour pressure, kPa at 20°C: 0.25	Relative vapour density (air = 1): 4.1 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.01 Flash point: 50°C (c.c.) Auto-ignition temperature: 550°C Octanol/water partition coefficient as log Pow: 3.42
ENVIRONMENTAL DATA	The substance is harmful to aquatic organisms. Bioaccumulation of this chemical may occur in fish. 	

N O T E S

Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is indicated. See ICSC 1433 1,2,4-Trimethylbenzene (Pseudocumene), ICSC 1362 1,2,3-Trimethylbenzene (Hemimellitene), ICSC 1389 Trimethyl benzene (mixed isomers).

Transport Emergency Card: TEC (R)-30S2325
NFPA Code: H0; F2; R0

ADDITIONAL INFORMATION

International Chemical Safety Cards

ETHYLBENZENE

ICSC: 0268

Ethylbenzol
Phenylethane
EB
C_8H_{10} / $C_6H_5C_2H_5$
Molecular mass: 106.2

ICSC # 0268
CAS # 100-41-4
RTECS # DA0700000
UN # 1175
EC # 601-023-00-4
March 13, 1995 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable.	NO open flames, NO sparks, and NO smoking.	Powder, AFFF, foam, carbon dioxide.
EXPLOSION	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		PREVENT GENERATION OF MISTS!	
•**INHALATION**	Cough. Dizziness. Drowsiness. Headache.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•**SKIN**	Dry skin. Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•**EYES**	Redness. Pain. Blurred vision.	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**	(Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Give a slurry of activated charcoal in water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Collect leaking liquid in covered containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Personal protection: A filter respirator for organic gases and vapours.	Fireproof. Separated from strong oxidants.	F symbol Xn symbol R: 11-20 S: 2-16-24/25-29 UN Hazard Class: 3 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0268

International Chemical Safety Cards

ETHYLBENZENE

ICSC: 0268

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** COLOURLESS LIQUID , WITH AROMATIC ODOUR. **PHYSICAL DANGERS:** The vapour mixes well with air, explosive mixtures are easily formed. **CHEMICAL DANGERS:** Reacts with strong oxidants. Attacks plastic and rubber. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 100 ppm as TWA 125 ppm as STEL A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued (ACGIH 2005). MAK: skin absorption (H); Carcinogen category: 3A; (DFG 2004). OSHA PEL†: TWA 100 ppm (435 mg/m^3) NIOSH REL: TWA 100 ppm (435 mg/m^3) ST 125 ppm (545 mg/m^3) NIOSH IDLH: 800 ppm 10%LEL See: 100414	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion. **INHALATION RISK:** A harmful contamination of the air will be reached rather slowly 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 Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. The substance may cause effects on the central nervous system Exposure far above the OEL could cause lowering of consciousness. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact with skin may cause dermatitis.
PHYSICAL PROPERTIES	Boiling point: 136°C Melting point: -95°C Relative density (water = 1): 0.9 Solubility in water, g/100 ml at 20°C: 0.015 Vapour pressure, kPa at 20°C: 0.9 Relative vapour density (air = 1): 3.7	Relative density of the vapour/air-mixture at 20°C (air = 1): 1.02 Flash point: 18°C c.c. Auto-ignition temperature: 432°C Explosive limits, vol% in air: 1.0-6.7 Octanol/water partition coefficient as log Pow: 3.2
ENVIRONMENTAL DATA	The substance is harmful to aquatic organisms. 	

N O T E S

The odour warning when the exposure limit value is exceeded is insufficient.

Transport Emergency Card: TEC (R)-30S1175 or 30GF1-I+II
NFPA Code: H2; F3; R0

ADDITIONAL INFORMATION

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

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

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

ICSC: 0385

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**

International Chemical Safety Cards

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.

International Chemical Safety Cards

BENZO(a)PYRENE

ICSC: 0104

IMPORTANT DATA

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.

NOTES

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

DIBENZO(a,h)ANTHRACENE

ICSC: 0431

1,25,6-Dibenzanthracene
$C_{22}H_{14}$
Molecular mass: 278.4

ICSC # 0431
CAS # 53-70-3
RTECS # HN2625000
EC # 601-041-00-2
October 23, 1995 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray, powder.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN	Redness. Swelling. Itching.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness.	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: P3 filter respirator for toxic particles.	Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0431

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

DIBENZO(a,h)ANTHRACENE

ICSC: 0431

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PHYSICAL STATE; APPEARANCE:
COLOURLESS CRYSTALLINE POWDER.

PHYSICAL DANGERS:

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

R T A N T D A T A	**CHEMICAL DANGERS:** **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established.	of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** The substance may have effects on the skin , resulting in photosensitization. This substance is probably carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 524°C Melting point: 267°C Relative density (water = 1): 1.28	Solubility in water: none Octanol/water partition coefficient as log Pow: 6.5
ENVIRONMENTAL DATA	Bioaccumulation of this chemical may occur in seafood. 	

N O T E S

This 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. DBA is a commonly used name. This substance is one of many polycyclic aromatic hydrocarbons (PAH).

ADDITIONAL INFORMATION

ICSC: 0431 **DIBENZO(a,h)ANTHRACENE**

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

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

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

NAPHTHALENE

ICSC: 0667

Naphthene
$C_{10}H_8$
Molecular mass: 128.18

ICSC # 0667
CAS # 91-20-3
RTECS # QJ0525000
UN # 1334 (solid); 2304 (molten)
EC # 601-052-00-2
April 21, 2005 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 80°C explosive vapour/air mixtures may be formed. 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!	
•INHALATION	Headache. Weakness. Nausea. Vomiting. Sweating. Confusion. Jaundice. Dark urine.	Ventilation (not if powder), local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! (Further see Inhalation).	Protective gloves.	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	Abdominal pain. Diarrhoea. Convulsions. Unconsciousness. (Further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: filter respirator for organic gases and vapours. Do NOT let this chemical enter the environment. Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants, food and feedstuffs Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. Marine pollutant. Xn symbol N symbol R: 22-40-50/53 S: 2-36/37-46-60-61 UN Hazard Class: 4.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0667

International Chemical Safety Cards

NAPHTHALENE

ICSC: 0667

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

PHYSICAL STATE; APPEARANCE:
WHITE SOLID IN VARIOUS FORMS , WITH CHARACTERISTIC ODOUR.

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

CHEMICAL DANGERS:
On combustion, forms irritating and toxic gases. Reacts with strong oxidants

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 10 ppm as TWA 15 ppm as STEL (skin) A4 (not classifiable as a human carcinogen); (ACGIH 2005).
MAK: skin absorption (H);
Carcinogen category: 2; Germ cell mutagen group: 3B; (DFG 2004).
OSHA PEL†: TWA 10 ppm (50 mg/m^3)
NIOSH REL: TWA 10 ppm (50 mg/m^3) ST 15 ppm (75 mg/m^3)
NIOSH IDLH: 250 ppm See: 91203

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

INHALATION RISK:
A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C. See Notes.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the blood , resulting in lesions of blood cells (haemolysis) See Notes. The effects may be delayed. Exposure by ingestion may result in death. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the blood , resulting in chronic haemolytic anaemia. The substance may have effects on the eyes , resulting in the development of cataract. This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 218°C
Sublimation slowly at room temperature
Melting point: 80°C
Density: 1.16
g/cm3
Solubility in water, g/100 ml at 25°C:
none

Vapour pressure, Pa at 25°C: 11
Relative vapour density (air = 1): 4.42
Flash point:
80°C c.c.
Auto-ignition temperature: 540°C
Explosive limits, vol% in air: 0.9-5.9
Octanol/water partition coefficient as log Pow: 3.3

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. The substance may cause long-term effects in the aquatic environment.

N O T E S

Some individuals may be more sensitive to the effect of naphthalene on blood cells.

Transport Emergency Card: TEC (R)-41S1334 (solid); 41GF1-II+III (solid); 41S2304 (molten)
NFPA Code: H2; F2; R0;

ADDITIONAL INFORMATION

IMPORTANT LEGAL NOTICE:

International Chemical Safety Cards

POLYCHLORINATED BIPHENYL (AROCLOR 1254)

ICSC: 0939

Chlorobiphenyl (54% chlorine)
Chlorodiphenyl (54% chlorine)
PCB
Molecular mass: 327 (average)

ICSC # 0939
CAS # 11097-69-1
RTECS # TQ1360000
UN # 2315
EC # 602-039-00-4
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: powder, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT GENERATION OF MISTS! STRICT HYGIENE!	
•INHALATION		Ventilation.	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Dry skin. Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Safety goggles, face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Headache. Numbness.	Do not eat, drink, or smoke during work.	Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Consult an expert! Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. Personal protection: complete protective clothing including self-contained breathing apparatus.	Separated from food and feedstuffs . Cool. Dry. Keep in a well-ventilated room.	Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs. Severe marine pollutant. Note: C Xn symbol N symbol R: 33-50/53 S: 2-35-60-61 UN Hazard Class: 9 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

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

POLYCHLORINATED BIPHENYL (AROCLOR 1254)

ICSC: 0939

IMPORTANT DATA	**PHYSICAL STATE; APPEARANCE:** LIGHT YELLOW VISCOUS LIQUID. **PHYSICAL DANGERS:** **CHEMICAL DANGERS:** The substance decomposes in a fire producing irritating and toxic gases . **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 0.5 mg/m³ as TWA; (skin); A3; (ACGIH 2004). MAK: 0.05 ppm, 0.70 mg/m³; H; Peak limitation category: II(8); Carcinogen category: 3B; Pregnancy risk group: B; (DFG 2004). OSHA PEL: TWA 0.5 mg/m^3 skin NIOSH REL*: Ca TWA 0.001 mg/m^3 See Appendix A *Note: The REL also applies to other PCBs. NIOSH IDLH: Ca 5 mg/m^3 See: IDLH INDEX	**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 contamination of the air will be reached rather slowly on evaporation of this substance at 20° C. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact with skin may cause dermatitis. Chloracne is the most visible effect. The substance may have effects on the liver . Animal tests show that this substance possibly causes toxic effects upon human reproduction.
PHYSICAL PROPERTIES	Relative density (water = 1): 1.5 Solubility in water: none	Vapour pressure, Pa at 25°C: 0.01 Octanol/water partition coefficient as log Pow: 6.30 (estimated)
ENVIRONMENTAL DATA	In the food chain important to humans, bioaccumulation takes place, specifically in aquatic organisms. It is strongly advised not to let the chemical enter into the environment. 	

N O T E S

Changes into a resinous state (pour point) at 10°C. Distillation range: 365°-390°C. Card has been partly updated in October 2004. See sections Occupational Exposure Limits, EU classification, Emergency Response.

Transport Emergency Card: TEC (R)-90GM2-II-L

ADDITIONAL INFORMATION

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

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

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

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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

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M

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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

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

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

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**

Material Safety Data Sheet

Version 4.0
Revision Date 03/12/2010
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	4,4'-DDD PESTANAL,250 MG (2,2-BIS(4-CHL&
Product Number	:	35486
Brand	:	Fluka
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. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Toxic by ingestion, Harmful by skin absorption., Possible carcinogen.

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H301	Toxic if swallowed.
H312	Harmful in contact with skin.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H413	May cause long lasting harmful effects to aquatic life.

Precautionary statement(s)

P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

HMIS Classification

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 1,1-Dichloro-2,2-bis(4-chlorophenyl)ethane
4,4′-DDD
TDE

Formula : $C_{14}H_{10}Cl_4$
Molecular Weight : 320.04 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane			
72-54-8	200-783-0	-	-

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
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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe 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 and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated 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 particle respirator type N100 (US) or type P3 (EN 143) 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
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid

Safety data

pH	no data available
Melting point	94.0 - 96.0 °C (201.2 - 204.8 °F)
Boiling point	193.0 °C (379.4 °F) at 1.3 hPa (1.0 mmHg)
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	< 0.00001 hPa (< 0.00001 mmHg) at 25.0 °C (77.0 °F)
Density	1.38 g/cm3
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 6.02

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - Hamster - > 5,000 mg/kg

TDLo Oral - Human - 428.5 mg/kg
Remarks: Endocrine:Adrenal cortex hypoplasia.

TDLo Oral - rat - 6,000 mg/kg
Remarks: Cardiac:Other changes. Gastrointestinal:Other changes. Kidney, Ureter, Bladder:Changes in both tubules and glomeruli.

TDLo Oral - rat - 14 mg/kg
Remarks: Liver:Changes in liver weight. Endocrine:Estrogenic. Musculoskeletal:Other changes.

TDLo Oral - rat - 2,100 mg/kg
Remarks: Behavioral:Altered sleep time (including change in righting reflex).

LD50 Dermal - rabbit - 1,200 mg/kg
Remarks: Behavioral:Excitement. Behavioral:Convulsions or effect on seizure threshold. Skin irritation

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

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

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

no data available

Specific target organ toxicity - single exposure (GHS)
no data available

Specific target organ toxicity - repeated exposure (GHS)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	Harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

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

Additional Information
RTECS: KI0700000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - other fish - 1.18 - 9 mg/l - 96.0 h
	LC50 - Lepomis macrochirus (Bluegill) - 0.04 - 0.05 mg/l - 96.0 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.06 - 0.09 mg/l - 96.0 h
	LC50 - Pimephales promelas (fathead minnow) - 3.47 - 5.58 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia pulex (Water flea) - 0.01 mg/l - 48 h

Persistence and degradability
no data available

Bioaccumulative potential
Indication of bioaccumulation.

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

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solids, organic, n.o.s. (2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane)
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2811 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane)
Marine pollutant: No

IATA
UN-Number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solid, organic, n.o.s. (2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane)

15. REGULATORY INFORMATION

OSHA Hazards
Toxic by ingestion, Harmful by skin absorption., Possible carcinogen.

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8

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
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8	

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8	

New Jersey Right To Know Components

	CAS-No.	Revision Date
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8	

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. 2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8	

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.

MSDS : 2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene, 99%
CAS : 72-55-9
SYNONYMS : p,p'-DDE ; ethylene,1,1-dichloro-2,2-bis-(p-chlorophenyl)- ; DDT dehydrochloride ; DDE; 1-1'-(Dichloroethenylidene)bis(4-chlorobenzene)

Catalog of Chemical Suppliers, Buyers, Custom Synthesis Companies And Equipment Manufacturers
[2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene, 99% 72-55-9]

Suppliers:

Not Available

Buyers:

Not Available

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
72-55-9	2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene	99	200-784-6

Hazard Symbols: XN
Risk Phrases: 22 33

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW
Harmful if swallowed. Danger of cumulative effects.Cancer suspect agent.Possible risks of irreversible effects.

Potential Health Effects
Eye:
May cause eye irritation.
Skin:
May cause skin irritation.
Ingestion:
May cause irritation of the digestive tract. May be harmful if swallowed. Ingestion of large amounts may cause liver and/or kidney damage.
Inhalation:
May cause respiratory tract irritation.
Chronic:
May cause cancer according to animal studies. Adverse reproductive effects have been reported in animals. Laboratory experiments have resulted in mutagenic effects.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin:
Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion:
If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation:
Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician:
Treat symptomatically and supportively.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Will burn if involved in a fire.
Extinguishing Media:
For large fires, use water spray, fog or regular foam. For small fires, use dry chemical, carbon dioxide, water spray or regular foam. Cool containers with flooding quantities of water until well after fire is out.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:
Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale. Use with adequate ventilation.
Storage:
Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits
CAS# 72-55-9:

Personal Protective Equipment

Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin:
Wear appropriate protective gloves to prevent skin exposure.
Clothing:
Wear appropriate protective clothing to prevent skin exposure.
Respirators:
A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Crystals
Color: white
Odor: None reported.
pH: Not available.
Vapor Pressure: 6.5106 mm Hg @ 20 C
Viscosity: Not available.
Boiling Point: 336 deg C
Freezing/Melting Point: 88.00 - 90.00 deg C
Autoignition Temperature: Not available.
Flash Point: Not available.
Explosion Limits, lower: Not available.
Explosion Limits, upper: Not available.
Decomposition Temperature:
Solubility in water: 0.010 ppm
Specific Gravity/Density:
Molecular Formula: C14H8Cl4
Molecular Weight: 318.02

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable under normal temperatures and pressures.
Conditions to Avoid:
Incompatible materials, dust generation, strong oxidants.
Incompatibilities with Other Materials:
Strong oxidizing agents - strong bases.
Hazardous Decomposition Products:
Hydrogen chloride, carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 72-55-9: KV9450000
LD50/LC50:
CAS# 72-55-9: Oral, mouse: LD50 = 700 mg/kg; Oral, rat: LD50 = 880 mg/kg.
Carcinogenicity:
2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene -
California: carcinogen, initial date 1/1/89

Other:
See actual entry in RTECS for complete information.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Estimated BCF value = 8,300 based on water solubility. Estimated Koc value = 8,300. There was no movement of DDE reported in soil column mobility experiments.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.

**** SECTION 14 - TRANSPORT INFORMATION ****

IATA
Not regulated as a hazardous material.
IMO
Not regulated as a hazardous material.
RID/ADR
Not regulated as a hazardous material.
USA RQ: CAS# 72-55-9: 1 lb final RQ; 0.454 kg final RQ

**** SECTION 15 - REGULATORY INFORMATION ****

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XN
Risk Phrases:
R 22 Harmful if swallowed.
R 33 Danger of cumulative effects.
Safety Phrases:
S 24/25 Avoid contact with skin and eyes.
WGK (Water Danger/Protection)
CAS# 72-55-9: 3
Canada
None of the chemicals in this product are listed on the DSL/NDSL list.
CAS# 72-55-9 is listed on Canada's Ingredient Disclosure List.
US FEDERAL
TSCA
CAS# 72-55-9 is not listed on the TSCA inventory.
It is for research and development use only.

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 9/28/1998 Revision #3 Date: 3/18/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

4-Cyano-4-Phenylpiperidine Hydrochloride, 99% (TLC)	51304-58-6
Methanesulfonamide	3144-09-0
gamma-Octanoic lactone, 98%	104-50-7
Cis,cis,cis,cis-1,2,3,4-cyclopentane- tetracarboxylic dianhydride,	4802-47-5
Tetrachloroethylene Carbonate, 98+%	22432-68-4
Oxamic Acid, 98%	471-47-6
1O,11-Dihydro-5H-Dibenzo(A,D)-Cycloheptene, 98%	833-48-7
Thallium (I) Sulfate, 99.9+%	7446-18-6
N-(2,6-Dimethylphenylcarbamoyl-Methyl)-Iminodiacetic Acid, 99%	59160-29-1
P-(Dimethylamino)cinnamic Acid, 99%	1552-96-1
Biebrich Scarlet, 99% (UV-VIS)	4196-99-0
4-Chlorobenzenediazonium hexafluoro- phosphate	1582-27-0
Ammonium hexachloroiridate(IV), 99.99%	16940-92-4
Methylamine-d2 deuteriochloride, 98+ atom % D	593-51-1
2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene, 99%	72-55-9
Nitro red	56431-61-9
Methyl 2,3-dichlorobenzoate, 98+%	2905-54-6
Isopropyl Bromoacetate, 98% (GC)	29921-57-1
1-Iodo-4-Nitrobenzene, 99%	636-98-6
4-Ethylcyclohexanol, 99% cis/trans mixture	4534-74-1
Fluorescamine	38183-12-9
Tris(2,2,6,6-Tetramethyl-3,5-Heptanedionato)Dysprosium(III), 99+%	15522-69-7
3-Amino-2,2,5,5-Tetramethyl-1-Pyrrolidinyloxy, 99% (Titr.)	34272-83-8
3,4-Dihydroxyphenylacetic Acid,98%	102-32-9

International Chemical Safety Cards

DDT

ICSC: 0034

Dichlorodiphenyltrichloroethane
1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane
2,2-bis(p-Chlorophenyl)-1,1,1-trichloroethane
1,1'-(2,2,2-Trichloroethylidene)bis(4-chlorobenzene)
p,p'-DDT
$C_{14}H_9Cl_5$
Molecular mass: 354.5

ICSC # 0034
CAS # 50-29-3
RTECS # KJ3325000
UN # 2761
EC # 602-045-00-7
April 20, 2004 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames.	Powder, water spray, foam, carbon dioxide.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION	Cough.	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness.	Safety goggles, 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	Tremors. Diarrhoea. Dizziness. Headache. Vomiting. Numbness. Paresthesias. Hyperexcitability. Convulsions.	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
Do NOT let this chemical enter the environment. Sweep spilled substance into sealable non-metallic containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: P3 filter respirator for toxic particles.	Provision to contain effluent from fire extinguishing. Separated from iron, aluminum and its salts, food and feedstuffs See Chemical Dangers.	Do not transport with food and feedstuffs. Severe marine pollutant. T symbol N symbol R: 25-40-48/25-50/53 S: 1/2-22-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

International Chemical Safety Cards

DDT

ICSC: 0034

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

PHYSICAL STATE; APPEARANCE:
COLOURLESS CRYSTALS WHITE POWDER.
TECHNICAL PRODUCT IS WAXY SOLID.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
On combustion, forms toxic and corrosive fumesincludinghydrogen chloride. Reacts with aluminium and iron.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 1 mg/m³ as TWA A3 (ACGIH 2004).
MAK: 1 mg/m³ H
Peak limitation category: II(8)
(DFG 2003).
OSHA PEL: TWA 1 mg/m^3 skin
NIOSH REL: Ca TWA 0.5 mg/m^3 See Appendix A
NIOSH IDLH: Ca 500 mg/m^3 See: 50293

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

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

EFFECTS OF SHORT-TERM EXPOSURE:
May cause mechanical irritation. The substance may cause effects on the central nervous system , resulting in convulsions and respiratory depression Exposure at high levels may result in death. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the central nervous system and liver. This substance is possibly carcinogenic to humans. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point: 260°C
Melting point: 109°C
Density: 1.6
g/cm3

Solubility in water: poor
Octanol/water partition coefficient as log Pow: 6.36

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. This substance may be hazardous to the environment; special attention should be given to birds. Bioaccumulation of this chemical may occur along the food chain, for example in milk and aquatic organisms. 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

Depending on the degree of exposure, periodic medical examination is indicated. Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. Consult national legislation. Agritan, Azotox, Anofex, Ixodex, Gesapon, Gesarex, Gesarol, Guesapon, Clofenotane, Zeidane, Dicophane, Neocid are trade names.

Transport Emergency Card: TEC (R)-61GT7-III

ADDITIONAL INFORMATION

ICSC: 0034 **DDT**

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.)? _____

_____

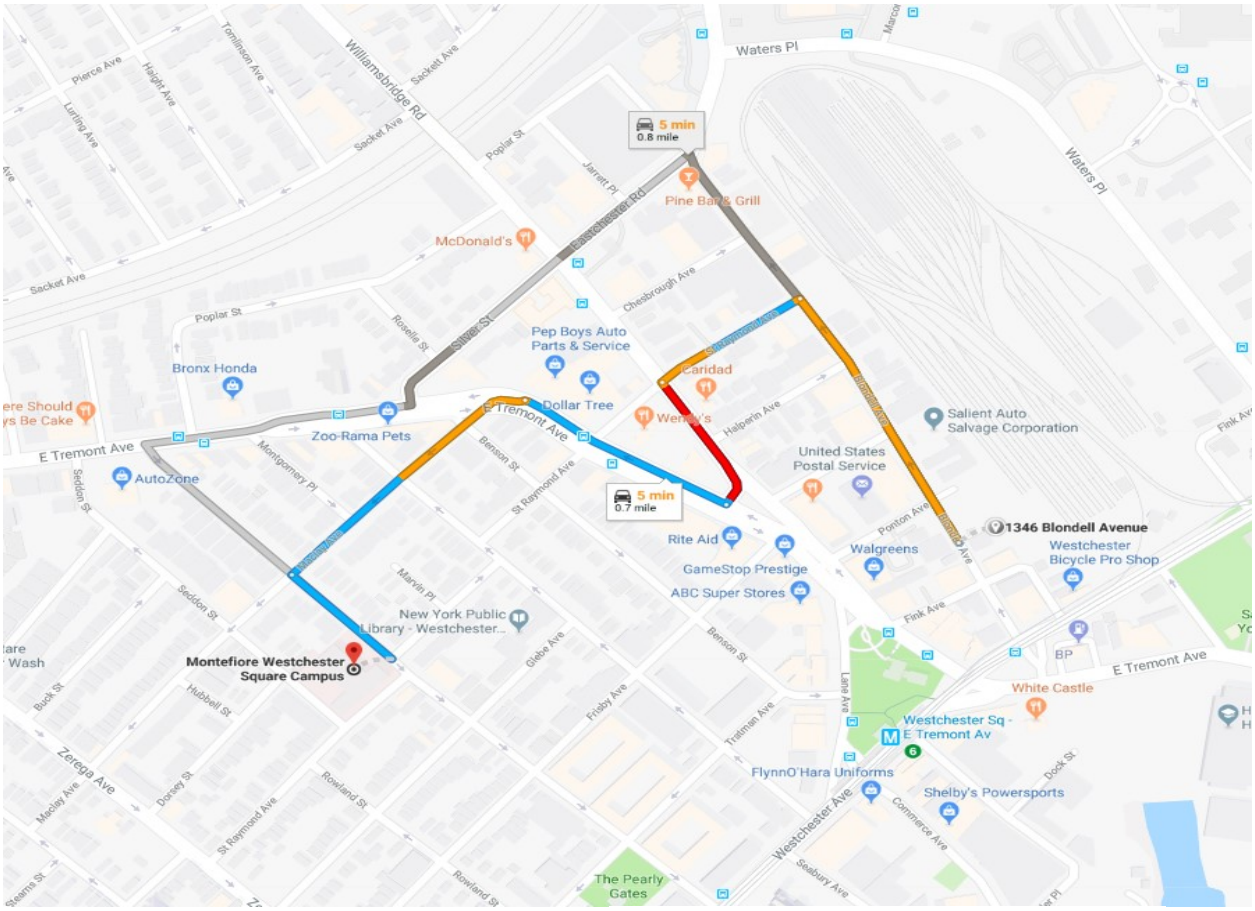
(If not, it is the EMPLOYEE'S sole responsibility to process his/her claim through his/her Health and Welfare Fund.)

INDICATE STREET NAMES, DESCRIPTION OF VEHICLES, AND NORTH ARROW

HOSPITAL INFORMATION AND MAP

The hospital nearest the site is:

Montefiore Westchester Square Campus
2475 St Raymond Avenue, Bronx, NY 10461
718-430-7300
0.7 Miles – About 5 Minutes



1346 Blondell Ave
Bronx, NY 10461

Head northwest on Blondell Ave toward Ponton Ave
0.2 mi

Turn left onto St Raymond Ave
479 ft

Turn left onto Williamsbridge Rd
479 ft

Turn right onto E Tremont Ave
Pass by Wendy's (on the right)
0.1 mi

Keep left to continue on Maclay Ave
0.2 mi

Turn left onto St Peters Ave
397 ft

Westchester Square Medical Center
2475 St Raymond Ave, Bronx, NY 10461

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

ATTACHMENT B
Quality Assurance Project Plan

QUALITY ASSURANCE PROJECT PLAN
FORMER BOYLE AUTO WRECKERS SITE.
1346 Blondell Avenue, Bronx, NY

Prepared on behalf of:

Exact Capital Group LLC
477 Madison Avenue, 6th Floor
NY, NY 10022

May 2019

Prepared by:

EBC
ENVIRONMENTAL BUSINESS CONSULTANTS
1808 MIDDLE COUNTRY ROAD
RIDGE, NY 11961

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QUALITY ASSURANCE PROJECT PLAN
FORMER BOYLE AUTO WRECKERS SITE.
1346 Blondell Avenue, Bronx, 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. As Project Director Mr. Sosik will also 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.

Charles Sosik 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 drilling 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	Thomas Gallo, EBC
Project Manager	Implementation of the RI according to the RIWP.	Maggie Ellis, 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

EBC ENVIRONMENTAL BUSINESS CONSULTANTS
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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 that is certified in the appropriate categories. Data generated from the laboratory will be used to evaluate contaminants such as chlorinated and other volatile organic compounds (VOCs) in soil, soil gas and groundwater. 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 required quantification limits as specified in NYSDEC Analytical Services Protocol (NYSDEC ASP, 07/2005) and useful for comparison with clean-up objectives. 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.

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 me related samples. II is carried through the

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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. 10% of the samples of each matrix should be sampled and anlayzed as Duplicates.

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
SR = sample results
SA = spike added from spiking mix

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2.4 Precision

Precision is defined as the measurement of agreement of a set of replicate results among themselves without a 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 Category B 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
8. Blank results (field, trip, and method).
9. Internal standard area and RT summary.

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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

2.9 Sample Handling and Decontamination Procedures

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 4ºC.

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. No field filtering will be conducted; any required filtration will be completed by the laboratory.

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 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 and duplicate samples will be collected at a rate of one per ten samples submitted to the laboratory.

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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 in soil / groundwater by USEPA Method 8260C, SVOCs in soil / groundwater by USEPA Method 8270D, Target Analyte List (TAL) Metals 6010 in soil and groundwater, pesticides / PCBs by USEPA Method 8081B/8082A and VOCs in air by USEPA Method TO15 (Table 2). 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. Note that if waste characterization samples are analyzed they will be in results only format and will not be evaluated in the DUSR.

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. Note that waste characterization samples, if analyzed, will be in results only format and will not be evaluated in the DUSR.

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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).

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	52	1 per 900 square feet of excavation base	Endpoint Verification of 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
Soil	Excavated Petroleum Impacted Soil	1	1 per 800 cy	Waste Characterization for disposal if not stockpiled on site	VOCs EPA Method 8260B, PAHs EPA Method 8270, RCRA metals, pesticides and PCBs by EPA 8081/8082, other as per disposal facility	0	0	0	0
Soil	Excavated Historic Fill Material	19	1 per 800 cy	Waste Characterization for disposal if not stockpiled on site	VOCs EPA Method 8260B, PAHs EPA Method 8270, RCRA metals, pesticides and PCBs by EPA 8081/8082, other as per disposal facility	0	0	0	0
Soil	Excavated Uncontaminated Native Soil	21	7 Grabs for 1st 1,000 cy, 2 for each additional 1,000 cy As per CP51	Clean Verification for disposal if not stockpiled.	VOCs EPA Method 8260B	0	0	0	0
Soil	Excavated Uncontaminated Native Soil	9	2 Composites for 1st 1,000 cy, 1 for each additional 1,000 cy As per CP51	Clean Verification for disposal if not stockpiled.	SVOCs, pesticides/and PCBs by EPA 8081/8082, and RCRA metals.	0	0	0	0

TABLE 2
SAMPLE COLLECTION AND ANALYSIS PROTOCOLS

Sample Type	Matrix	Sampling Device	Parameter	Sample Container	Sample Preservation	Analytical Method#	CRQL / MDLH	Holding Time
Grab	Soil	Scoop Direct into Jar	VOCs	(1) 2 oz Jar	Cool to 4º C	EPA Method 8260C (test method 5035A)	Compound specific (1-5 ug/kg)	14 days
Grab	Soil	Scoop Direct into Jar	SVOCs	(1) 8 oz jar	Cool to 4º C	EPA Method 8270D	Compound specific (1-5 ug/kg)	14 day ext/40 days
Grab	Soil	Scoop Direct into Jar	Pest/PCBs	from 8oz jar above	Cool to 4º C	EPA Method 8081B/8082A	Compound specific (1-5 ug/kg)	14 day ext/40 days
Grab	Soil	Scoop Direct into Jar	Metals	from 8oz jar above	Cool to 4º C	TAL Metals 6010	Compound specific (01-1 mg/kg)	6 months

Notes:
All holding times listed are from Verified Time of Sample Receipt (VTSR) unless noted otherwise. * Holding time listed is from time of sample collection.
The number in parentheses in the "Sample Container" column denotes the number of containers needed.
Triple volume required when collected MS/MSD samples
The number of trip blanks are estimated.
CRQL / MDL = Contract Required Quantitation Limit / Method Detection Limit
.

ATTACHMENT C
Community Air Monitoring Plan

COMMUNITY AIR MONITORING PLAN

FORMER BOYLE AUTO WRECKERS SITE
1346 BLONDELL AVENUE,
BRONX, NY

MAY - 2019

Prepared on behalf of:

Exact Capital Group LLC
477 Madison Ave, 6th Floor
NY, NY 10022

Prepared by:

EBC
ENVIRONMENTAL BUSINESS CONSULTANTS
1808 MIDDLE COUNTRY ROAD
RIDGE, NY 11961

COMMUNITY AIR MONITORING PLAN
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APPENDICES

1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) has been prepared for the drilling and sampling activities to be performed under a Remedial Investigation Work Plan (RIWP) at the Former Boyle Auto Wreckers Site. 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 drilling and sampling activities that have the potential to generate airborne particulate matter and volatile organic compounds (VOCs). These activities include drilling and soil and groundwater sampling. 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) Technical and Guidance Memorandum (TAGM) #4031 - Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites: 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 VOCs and semi-volatile organic compounds (SVOCS) are the constituents of concern at the Site along with metals in historic fill. The appropriate method to monitor air for these constituents during investigation activities is through real-time VOC and air particulate (dust) monitoring.

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 periodically in series during the site work. When the drilling area is within 20 feet of potentially exposed populations or occupied structures, 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 or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present.

The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should 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.

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.

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 D
Citizen Participation Plan

New York State Department of Environmental Conservation

Brownfield Cleanup Program

Citizen Participation Plan

for

FORMER BOYLE AUTO WRECKERS INC.

Blondell Equities LLC
477 Madison Avenue, 6th Floor
New York, NY 10022

October 2017

Contents

*** * * * ***

Note: The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the site's investigation and cleanup process.

Applicant: **Blondell Equities LLC**
Site Name: Former Boyle Auto Wreckers, Inc. **("Site")**
Site Address: **1346 Blondell Avenue**
Site County: **Bronx**
Site Number: **C203089**

1. What is New York's Brownfield Cleanup Program?

New York's Brownfield Cleanup Program (BCP) works with private developers to encourage the voluntary cleanup of contaminated properties known as "brownfields" so that they can be reused and developed. These uses include recreation, housing, and business.

A *brownfield* is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal, and financial burdens on a community. If a brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants that conduct brownfield site investigation and cleanup activities. An Applicant is a person who has requested to participate in the BCP and has been accepted by NYSDEC. The BCP contains investigation and cleanup requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at: http://www.dec.ny.gov/chemical/8450.html.

2. Citizen Participation Activities

Why NYSDEC Involves the Public and Why It Is Important

NYSDEC involves the public to improve the process of investigating and cleaning up contaminated sites, and to enable citizens to participate more fully in decisions that affect their health, environment, and social well being. NYSDEC provides opportunities for citizen involvement and encourages early two-way communication with citizens before decision makers form or adopt final positions.

Involving citizens affected and interest in site investigation and cleanup programs is important for many reasons. These include:

- Promoting the development of timely, effective site investigation and cleanup programs that protect public health and the environment;

- Improving public access to, and understanding of, issues and information related to a particular site and that Site's investigation and cleanup process;

- Providing citizens with early and continuing opportunities to participate in NYSDEC's site investigation and cleanup process;

- Ensuring that NYSDEC makes site investigation and cleanup decisions that benefit from input that reflects the interests and perspectives found within the affected community; and

- Encouraging dialogue to promote the exchange of information among the affected/interested public, State agencies, and other interested parties that strengthens trust among the parties, increases understanding of site and community issues and concerns, and improves decision making.

This Citizen Participation (CP) Plan provides information about how NYSDEC will inform and involve the public during the investigation and cleanup of the Site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Project Contacts

Appendix A identifies NYSDEC project contact(s) to whom the public should address questions or request information about the Site's investigation and cleanup program. The public's suggestions about this CP Plan and the CP program for the Site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Locations of Reports and Information

The locations of the reports and information related to the Site's investigation and cleanup program also are identified in Appendix A. These locations provide convenient access to important project documents for public review and comment. Some documents may be placed on the NYSDEC website. If this occurs, NYSDEC will inform the public in fact sheets distributed about the Site and by other means, as appropriate.

Site Contact List

Appendix B contains the Site contact list. This list has been developed to keep the community informed about, and involved in, the Site's investigation and cleanup process. The Site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming activities at the Site (such as fieldwork), as well as availability of project documents and announcements about public comment periods.

The Site contact list includes, at a minimum:

- Chief executive officer and planning board chairperson of each county, city, town and village in which the Site is located;
- Residents, owners, and occupants of the Site and properties adjacent to the Site;
- The public water supplier which services the area in which the Site is located;

- Any person who has requested to be placed on the Site contact list;
- The administrator of any school or day care facility located on or near the Site for purposes of posting and/or dissemination of information at the facility; and
- Location(s) of reports and information.

The Site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the Site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix A. Other additions to the Site contact list may be made at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

CP Activities

The table at the end of this section identifies the CP activities, at a minimum, that have been and will be conducted during the Site's investigation and cleanup program. The flowchart in Appendix D shows how these CP activities integrate with the Site investigation and cleanup process. The public is informed about these CP activities through fact sheets and notices distributed at significant points during the program. Elements of the investigation and cleanup process that match up with the CP activities are explained briefly in Section 5.

- **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and clean up a site.

- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a site's investigation and cleanup.

- **Document repositories** allow the public to access and review project documents including investigation and cleanup work plans and final reports.

The public is encouraged to contact project staff at any time during the Site's investigation and cleanup process with questions, comments, or requests for information. This CP Plan may be revised due to changes in major issues of public concern identified in Section 3 or in the nature and scope of investigation and cleanup activities. Modifications may include additions to the Site contact list and changes in planned citizen participation activities.

Technical Assistance Grant

NYSDEC must determine if the Site poses a significant threat to public health or the environment. This determination generally is made using information developed during the investigation of the Site, as described in Section 5.

If the Site is determined to be a significant threat, a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret

and understand existing environmental information about the nature and extent of contamination related to the Site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the Site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the Site.

For more information about TAGs, go online at http://www.dec.ny.gov/regulations/2590.html.

Note: The table identifying the citizen participation activities related to the Site's investigation and cleanup program follows on the next page:

Citizen Participation Requirements (Activities)	Timing of CP Activity(ies)
Application Process:	
• Prepare Site contact list • Establish document repositories	At time of preparation of application to participate in the BCP.
• Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day public comment period • Publish above ENB content in local newspaper • Mail above ENB content to site contact list • Conduct 30-day public comment period	When NYSDEC determines that BCP application is complete. The 30-day public comment period begins on date of publication of notice in ENB. End date of public comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice, and notice to the site contact list should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement:	
• Prepare Citizen Participation (CP) Plan	Before start of Remedial Investigation
Before NYSDEC Approves Remedial Investigation (RI) Work Plan:	
• Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan • Conduct 30-day public comment period	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, public comment periods will be combined and public notice will include fact sheet. Thirty-day public comment period begins/ends as per dates identified in fact sheet.
After Applicant Completes Remedial Investigation:	
• Distribute fact sheet to site contact list that describes RI results	Before NYSDEC approves RI Report
Before NYSDEC Approves Remedial Work Plan (RWP):	
• Distribute fact sheet to site contact list about proposed RWP and announcing 45-day public comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager) • Conduct 45-day public comment period	Before NYSDEC approves RWP. Forty-five day public comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45-day public comment period.
Before Applicant Starts Cleanup Action:	
• Distribute fact sheet to site contact list that describes upcoming cleanup action	Before the start of cleanup action.
After Applicant Completes Cleanup Action:	
• Distribute fact sheet to site contact list that announces that cleanup action has been completed and that summarizes the Final Engineering Report • Distribute fact sheet to site contact list announcing issuance of Certificate of Completion (COC)	At the time NYSDEC approves Final Engineering Report. These two fact sheets are combined if possible if there is not a delay in issuing the COC.

3. Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern that relate to the Site. Additional major issues of public concern may be identified during the course of the Site's investigation and cleanup process.

The major issues of concern to the public will be potential impacts of nuisance odors and dust during the removal of affected soil at the Site. Another example of a major issue of public concern would be the impact of increased truck traffic on the surrounding neighborhood. Construction safety issues will also be addressed.

This work will be performed in accordance with procedures which will be specified under a detailed Remedial Program which considers and takes preventive measures for exposures to future residents of the property and those on adjacent properties during construction. Detailed plans to monitor the potential for exposure including a Health and Safety Plan (HASP) and a Community Air Monitoring Plan (CAMP) are required components of the remedial program. Implementation of these plans will be under the direct oversight of the NYSDEC and the New York State Department of Health (NYSDOH).

These plans will specify the following worker and community health and safety activities during remedial activity at the Site:

- On-site air monitoring for worker protection;
- Perimeter air monitoring for community protection;
- The use of odor, vapor, and dust controls, such as water or foam sprays, as needed;
- Monitoring and control of soil, sediments, and water generated during remediation; and
- Truck routes which avoid residential streets.

The HASP and the CAMP will be prepared as part of the Remedial Action Work Plan (RAWP) and will be available for public review at the document repository as identified in Appendix A (page 11).

Furthermore, the Applicant has prepared a Scoping Sheet for Major Issues of Public Concern which will assist them in identifying any concerns. Experience from similar projects, 311 complaints and other construction projects in the area will help in identifying such issues.

4. Site Information

Appendix C contains a map identifying the location of the Site.

Site Description

The Site to be remediated and redeveloped is located in the Pelham Bay neighborhood of Bronx County and is comprised of one tax parcel totaling 21,000 square feet (0.48 acres). The Site is comprised of seven tax parcels which were recently merged into a single lot (Block 4134, Lot 1) as a prerequisite to Site development. The former lots are identified as Block 4133, Lot 12, Block 4134

Lots 1, 2, 4, 62, 63 and 70. The Site is located in the City of New York and Borough of the Bronx. The lot has approximately 800 ft of street frontage on Cooper Avenue, and 210 feet of street frontage on Blondell Avenue.

The Site is currently improved with one, 1-story 2,920 sf masonry commercial building; one, 1 ¾-story 684 sf wood frame shed building; and one, 1 ½-story 490 sf wood frame house. These three buildings are all currently vacant and are located on the southwestern portion of the Site. The remainder of the Site is vacant, with the eastern portion being used for parking.

The elevation of the Site is 7 feet above the National Geodetic Vertical Datum (NGVD). The area topography gradually slopes to the east. The depth to groundwater beneath the Site is approximately 6 feet below grade. Groundwater flow is reportedly to the southeast.

The land use in the immediate vicinity of the Site includes a NYC Transit Authority rail yard and related facilities to the east, commercial properties to the north and west consisting primarily of auto repair shops and warehouse buildings, and residential and commercial office buildings to the south.

The area surrounding the property is highly urbanized and is primarily industrial/commercial in accordance with the M1-1 zoning which surrounds the Site. The proposed project is compatible with the surrounding land use and will be in compliance with current zoning.

History of Site Use, Investigation, and Cleanup
The Site is currently owned by Blondell Equities LLC. The property is currently partially occupied.

The Site was originally developed with several small residential homes in the late 1800's. It was converted to commercial use around 1929-1930 when the current commercial building was constructed. Use as an automobile junk yard and equipment storage were identified from 1966 through 2013 according to Sanborn Fire Insurance maps, aerial photographs, and city directory listings. Other uses which overlapped this period included an instrument company (1971-1983), a contracting company (1965-2000), a boiler plate erecting company (1976), a carting company (2013) and a motorcycle repair shop (2005-2015).

Three environmental investigations have been performed at the Site, and are summarized below:

July 2006 - Phase II Subsurface Investigation Report (AKRF)
A Phase II Subsurface Investigation Report was prepared by AKRF Inc. in July 2006. The report included a summary of a Phase I Environmental Site Assessment which was prepared by AKRF in February 2006.

AKRF identified the following environmental conditions:

- "The subject property was listed twice on the closed status New York State Department of Environmental Conservation (NYSDEC) spills database. On October 8, 1997, an unknown quantity of gasoline and waste oil was reported spilled onto the ground surface. The listing reported that spills from vehicles were a regular occurrence at the site and that tires were burned on a daily basis. This spill was closed in March 1998. A spill was reported on

December 8, 1997 in which an unknown material and quantity was spilled at the property. The spill was closed in July 2003. According to John Mercorella, a representative of the property owner, an oil and gasoline spill had occurred in the northeastern portion of the site several years ago. Based on the details provided, this spill may be associated with the database listed on-site spill reported in October 1997, though this could not be positively confirmed. The surface pavement at the site was observed to be in poor condition and a portion of the site was surfaced with gravel. Surficial oil staining was observed by AKRF on visible exterior portions of the paved and gravel surfaces. These reported spills or releases from vehicles could have affected subsurface soil and groundwater."

- "A 275-gallon storage tank was located in the basement of the northernmost dwelling at the site. Based on observations made during the site visit by AKRF, this tank may be a used oil tank operated by the south-adjacent motorcycle repair shop. A 275-gallon used oil aboveground storage tank was listed on the New York State Department of Environmental Conservation (NYSDEC) Petroleum Bulk Storage (PBS) database for Boyle Auto Wreckers, Inc., a previous tenant of the 1346 Blondell Avenue property. It is possible that this listing represents the 275-gallon aboveground storage tank located in the basement of the residential dwelling. However, AKRF did not have access to the motorcycle repair shop building. Other petroleum storage tanks may be present inside this structure that could be related to the PBS listing for the subject site. In addition, a violation for an unregistered waste oil tank at the site was issued by the NYSDEC, as noted in the December 1997 spill listing for the site."

- "The study site was labeled as an “Auto Junk Yard” on historic Sanborn maps from 1977 to 1996. Historic operations as a junk yard may have affected the subsurface soil and/or groundwater at the property."

- "Historical land use maps, the regulatory database search, and results of the site reconnaissance indicated that the surrounding area has a long history of auto-related, manufacturing and light industrial operations. Such land use included the presence of historic gasoline filling stations directly across Ponton Avenue to the north and across Blondell Avenue to the southwest. Several fuel oil spills were noted in the NY SPILLS database in the area surrounding the subject site. Known and potential releases from these sites may have affected the local groundwater quality."

The Phase II investigation completed by AKRF included the installation of 8 soil borings and the collection and analysis of 8 soil samples and 5 groundwater samples. Overburden soil consisted entirely of fill material to the groundwater surface which was encountered at a depth of approximately six feet below grade.

AKRF concluded the following:

- "Laboratory analytical results indicated that volatile organic compounds (VOCs) were detected in soil samples S-2, S-3, and S-4 that are typically associated with gasoline, including benzene, ethylbenzene, toluene, and xylenes (BTEX), as well as naphthalene and several benzene-related compounds. The laboratory results and the field screening results, which included the detection of petroleum-like odors and elevated photoionization detector

(PID) readings, suggest that releases of gasoline and/or other petroleum products in these areas have affected soil and groundwater."

- "The results of the analyses for VOCs and SVOCs in groundwater suggest potential gasoline contamination to groundwater in samples collected from borings S-2, S-3, S-4, and to a lesser extent in S-8, where only methyl tert butyl ether (MTBE) was detected. The concentration of gasoline-related contaminants on the northern portion of the site may suggest that contaminated groundwater could have migrated on-site from the historic gasoline station properties to the north identified by AKRF's Phase IESA dated February 2006. Specifically, one of these historic sites was identified directly across Ponton Avenue from the subject site. These historic gasoline station properties were located in a presumed upgradient groundwater flow direction. However, similar compounds and petroleum-like odors and elevated PID readings were detected in the soil samples from these soil boring locations indicating that reported and/or unreported on-site petroleum spills may have been the main source of the groundwater impact."

- "In addition, the site has a history of petroleum use related to automotive and motorcycle repair operations. The New York State Department of Environmental Conservation (NYSDEC) spill listings for the site note the repeated discharge of gasoline and oil to the ground surface. The detected concentrations of metals in the soil, including those above the TAGM guidelines and established eastern U.S. background levels, may be attributable to the urban fill at the site and not necessarily to environmental contamination from historic on-site operations. However, the elevated lead levels may be related to the past use and release of leaded gasoline or lead-containing batteries. Based on the results, elevated levels of lead may exceed the threshold for characterization as hazardous waste under Title 40 of the Code of Federal Regulations when reanalyzed for Toxicity Characteristic Leaching Procedure (TCLP), an analysis for the characterization of waste for disposal. Such soil may require management as hazardous waste if excavated as part of site development activities."

- "Soil excavated as part of any future site development activities at the site should be managed in accordance with all applicable regulations. Soil intended for off-site disposal should be tested in accordance with the requirements of the receiving facility. Transportation of material leaving the site for off-site disposal should be in accordance with federal, state and local requirements covering licensing of haulers and trucks, placarding, truck routes, and manifesting, etc. If dewatering is necessary for construction and development purposes, groundwater may require treatment as part of the dewatering handling and discharge process. Prior to initiating any dewatering activities, a groundwater sample should be analyzed to insure it meets the New York City Department of Environmental Protection (NYCDEP) criteria for effluent to municipal sewers, should these be the selected course of action for development."

December 2015 – Phase II Environmental Site Assessment Report (HydroTech)
HydroTech conducted a Phase II investigation which consisted of six soil borings and the collection and analysis of six soil samples and three groundwater samples.

Based on the results obtained during the investigation, HydroTech concluded the following:

- Petroleum related VOCs were detected in soil samples beneath the northern portion of the Site at concentrations exceeding their respective Unrestricted SCOs and a petroleum odor was also detected in these samples during soil screening;

- SVOCs characterized as PAHs and metals most likely related to urban fill materials were detected in soil throughout the Site at concentrations greater than their respective regulatory standards.

- No VOCs or SVOCs were identified in the groundwater above their respective GQS.

- Three dissolved metals including magnesium, manganese and sodium were identified in the groundwater at concentrations exceeding their respective GQS.

- The impacts identified during this investigation appear to the effects of the closed NYSDEC spill incident.

May 2016 – Subsurface Investigation Data Summary (EBC)
A supplemental subsurface investigation consisting of 11 borings with analysis of 7 soil and 5 groundwater samples was completed in May 2016.

Laboratory analysis included VOCs, PAHs, pesticides / PCBs and metals for all soil samples and VOCs for the groundwater samples. The results of the investigation identified petroleum contamination (VOCs) in four of seven samples collected with petroleum SVOC contamination reported in one of the four samples with elevated VOCs. Fill material was reported to be present at depths ranging from 2 to 7 ft below the surface. One or more metals and /or SVOCs were reported above restricted residential SCOs in the fill samples.

Groundwater at the Site is present at a depth of approximately 5-6 feet below surface grade. Petroleum VOCs were reported above groundwater standards in one of the samples with Chlorinated VOCs (CVOCs) reported in another sample.

5. Investigation and Cleanup Process

Application

The Applicant has applied for acceptance into New York's Brownfield Cleanup Program (BCP) as a Volunteer. This means that the Applicant was not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the Site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination on-site, and must conduct a qualitative exposure assessment, (a process that characterizes the actual or potential exposures of people, fish and wildlife to contaminants on the Site and to contamination that has migrated from the Site).

The Applicant intends to redevelop the Site with a new nine story mixed-use building. The project will include 212 affordable housing apartment units, 22,000 square feet (sf) of retail space and

underground parking for 90 cars. The developer is currently in the process of rezoning the property from M1-1 light manufacturing to R7A residential with a C2-4 commercial overlay. One hundred percent of the lot would be excavated to a depth of approximately 11 feet for the cellar level of the proposed building. With groundwater present at 6 feet below grade, dewatering will not be required during construction of the building's foundation.

To achieve this goal, the Applicant will conduct investigation and cleanup activities at the Site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement (BCA) executed by NYSDEC and the Applicant sets forth the responsibilities of each party in conducting these activities at the Site.

Investigation

The Applicant completed a Remedial Investigation before it applied to the BCP. The Applicant has submitted a Remedial Investigation Work Plan to the NYSDEC for review. The NYSDEC will use the information in the investigation report to determine if the Site poses a significant threat to public health or the environment. If the Site is a significant threat, it must be cleaned up using a remedy selected by NYSDEC from an analysis of alternatives prepared by the Applicant and approved by NYSDEC. If the Site does not pose a significant threat, the Applicant may select the remedy from the approved analysis of alternatives.

Remedy Selection

The Applicant has recommended in its investigation report that action needs to be taken to address Site contamination and provided a cleanup plan, which will officially be called a Remedial Investigation Work Plan, to the NYSDEC for approval. The Remedial Investigation Work Plan describes the Applicant’s proposed remedy for addressing contamination related to the Site.

After reviewing the Remedial Investigation Work Plan, the NYSDEC will announce the availability of the proposed plan for public review during a 45-day public comment period.

Cleanup Action

NYSDEC will consider public comments, and revise the draft cleanup plan if necessary, before approving the proposed remedy. The New York State Department of Health (NYSDOH) must concur with the proposed remedy. After approval, the proposed remedy becomes the selected remedy.

The Applicant may then design and perform the cleanup action to address the Site contamination. NYSDEC and NYSDOH oversee the activities. When the Applicant completes cleanup activities, it will prepare a Final Engineering Report (FER) that certifies that cleanup requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the cleanup is protective of public health and the environment for the intended use of the Site.

Certificate of Completion

When NYSDEC is satisfied that cleanup requirements have been achieved or will be achieved for the Site, it will approve the FER. NYSDEC then will issue a COC to the Applicant. The COC states that cleanup goals have been achieved, and relieves the Applicant from future liability for site-related contamination, subject to certain conditions. The Applicant would be eligible to redevelop the Site after it receives a COC.

Site Management

Site management is the last phase of the Site cleanup program. This phase begins when the COC is issued. Site management may be conducted by the Applicant under NYSDEC oversight, if contamination will remain in place. Site management incorporates any institutional and engineering controls required to ensure that the remedy implemented for the Site remains protective of public health and the environment. All significant activities are detailed in a Site Management Plan (SMP). An institutional control is a non-physical restriction on use of the Site, such as a deed restriction that would prevent or restrict certain uses of the property. An institutional control may be used when the cleanup action leaves some contamination that makes the Site suitable for some, but not all uses. An engineering control is a physical barrier or method to manage contamination. Examples include: caps, covers, barriers, fences, and treatment of water supplies.

Site management also may include the operation and maintenance of a component of the remedy, such as a system that is pumping and treating groundwater. Site management continues until NYSDEC determines that it is no longer needed.

Appendix A -
Project Contacts and Locations of Reports and Information

Project Contacts

For information about the site's investigation and cleanup program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

To be named
New York State Department of Environmental Conservation
Division of Environmental Remediation
Address:
Tel:
Email:

Thomas Panzone
Regional Citizen Participation Specialist
NYSDEC Region 2
Office of Communications Services
47-40 21st Street
Long Island City, NY 11101-5407
Tel: (718) 482-4953
Email: thomas.panzone(@dec.state.ny.gov

New York State Department of Health (NYSDOH):
To be named
New York State Department of Health
Bureau of Environmental Exposure Investigation
Empire State Plaza – Corning Tower Room 1787
Albany, New York 12237
Tel: (518) 402-7860
Email:

Locations of Reports and Information

The facilities identified below are being used to provide the public with convenient access to important project documents:

New York Public Library - Pelham Bay Branch
3060 Middletown Road
Bronx, NY 10461

Hours:

Monday	10:00 pm – 7:00 pm
Tuesday	10:00 pm – 7:00 pm
Wednesday	10:00 pm – 7:00 pm
Thursday	10:00 pm – 7:00 pm
Friday	10:00 am – 5:00 pm
Saturday	10:00 am – 5:00 pm
Sunday	Closed

Bronx 11 Community District
1741 Colden Avenue
Bronx, NY 10462

Hours:

Monday	9:00 pm – 5:00 pm
Tuesday	9:00 pm – 5:00 pm
Wednesday	9:00 pm – 5:00 pm
Thursday	9:00 pm – 5:00 pm
Friday	9:00 am – 5:00 pm
Saturday	Closed
Sunday	Closed

Appendix B - Site Contact List

Local Government Contacts:

City of New York
Hon. William de Blasio
Mayor of New York City
City Hall
New York, NY 10007

Mr. Ruben Diaz, Jr.
Bronx Borough President
851 Grand Concourse, Suite 301
Bronx, New York 10451

Mr. Anthony Vitaliano
Chair, Bronx Community Board 11
1741 Colden Avenue
Bronx, NY 10462

Mr. Jeremy Warneke
District Manager, Bronx Community Board 11
1741 Colden Avenue
Bronx, NY 10462

Mr. James Vacca
New York City Council Member – District 13
3040 East Tremont Ave. Room 104
Bronx, New York 10461

Mr. Carl Weisbrod
Chair of City Planning (Zoning)
22 Reade St.
Third Floor
New York, NY 10007

Ms. Carol Samol
Director, NYC Planning Commission – Bronx Office
1 Fordham Plz.
Bronx, New York 10458

Ms. Constance Moran
New York City Department of Transportation
Bronx Borough Commissioner
55 Water Street, 9th Floor
New York, NY 10041

Bronx County Clerk's Office
Mr. Luis M. Diaz, County Clerk
851 Grand Concourse, Room 118
Bronx, New York 10451

Hon. Letitia James
Public Advocate
1 Centre Street, 15th Floor
New York, NY 10007

Hon. Scott M. Stringer
Office of the Comptroller
1 Centre Street
New York, NY 10007

Mr. John Wuthenow
Office of Environmental Planning & Assessment
NYC Dept. of Environmental Protection
96-05 Horace Harding Expressway
Flushing, NY 11373

Mr. Daniel Walsh
NYC Department of Environmental Remediation
100 Gold Street, 2nd Floor
New York, NY 10038

New York State
Senator Jeffrey D. Klein
Senatorial District: 34
1250 Waters Place, Suite 1202
Bronx, NY 10461

Assemblyman Michael Benedetto
82nd Assembly District
3602 E. Tremont Ave. Suite 201
Bronx, NY 10465

Federal
Hon. Charles Schumer
US Senator
757 Third Avenue, Suite 17-02
New York, NY 10017

Hon. Kirsten Gillibrand
US Senator
780 Third Avenue, Suite 2601
New York, NY 10017

Rep. José E. Serrano
Congressional District: 15
1231 Lafayette Avenue, 4th Floor
Bronx, New York 10474

Adjacent Property Owner / Occupant Contacts

Contact information for the identified owners, as listed in the New York City ACRIS Database, are as follows:

North

1. Occupant / Operator
Dom's Auto Body
1364 Blondell Avenue
Bronx, NY 10461

2. Owner
Messuri, Rita
20 Orchard Rd.
Katonah, NY 10536

3. Occupant / Operator
M&J Innovations
1369 Blondell Avenue
Bronx, NY 10461

4. Owner
JJA Holding Corp.
P.O. Box 817
Yonkers, NY 10704

West

5. Occupant / Operator
Platinum Autoworks Inc.
1345 Blondell Ave B
Bronx, NY 10461

6. Occupant / Operator
A&A Auto Body of the Bronx
1341 Blondell Avenue
Bronx, NY 10461

7. Owner
Antonio Assalone
1341 Blondell Ave.

Bronx, NY 10461

8. Occupant / Operator
1337 Blondell Avenue
Bronx, NY 10461

9. Occupant / Operator
Platinum Plus Cars
2633 Fink Avenue
Bronx, NY 10461

10. Occupant / Operator
Miranda Auto Repair Inc
2631 Fink Avenue
Bronx, NY 10461

11. Owner
West Square Realty
1250 Waters Place, Ph 1
Bronx, NY 10461

South

12. Occupant / Operator
Kokonuts Nightclub
1332 Blondell Avenue
Bronx, NY 10461

13. Occupant / Operator
Side Street Catering
1332 Blondell Avenue
Bronx, NY 10461

14. Owner
Ramos, Arthur
1332 Blondell Ave.
Bronx, NY 10461

15. Occupant / Operator
HCS Tax Services
1314 Blondell Avenue
Bronx, NY 10461

16. Owner
1314 Blondell Avenue Corp.
1314 Blondell Ave.
Bronx, NY 10461

17. Owner / Operator
Elsaja Cooper LLC
1306 Cooper Avenue
Bronx, NY 10461

East

18. Owner / Operator
New York City Transit

4.3 Local News Media

Bronx Times
900 E. 132nd Street
Bronx, NY 10454

New York Times
620 Eighth Ave.
New York, NY 10018

New York Daily News
450 W. 33 Street
New York, NY 10001

New York Post
1211 Avenue of the Americas
New York, NY 10036-8790

4.4 Public Water Supplier

New York City Department of Environmental Protection
Bureau of Water Supply
1250 Broadway - 8th Floor
Manhattan, NY 10001

4.5 Requested Contacts

No requests have been made at this time.

4.6 Schools and Daycare Facilities

The following Schools and Daycare facilities were identified within a one-quarter mile radius of the project Site:

1. P.S 721 Steven McSweeney School
2697 Westchester Avenue
Bronx, NY 10461

Frank Degennaro, Principal

2. Herbert H. Lehman High School
3000 E Tremont Avenue
Bronx, NY 10461
John Powers, Principal

3. Renaissance High School For Musical Theater & Technology
3000 E Tremont Avenue
Bronx, NY 10461
Maria Herrera, Principal

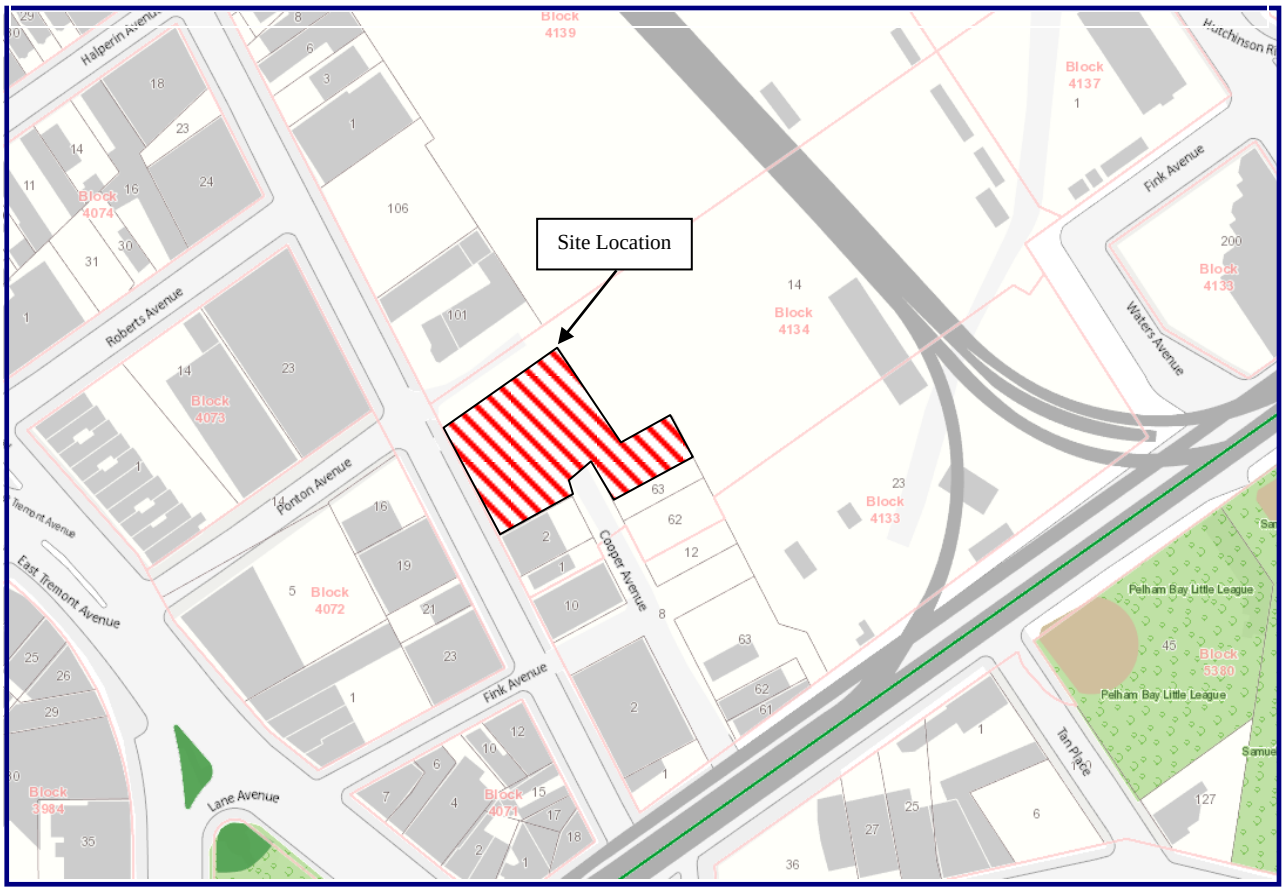
4. The Bronx River High School
3000 E Tremont Avenue
Bronx, NY 10461
Greg Fucheck, Principal

5. Westchester Square Academy
3000 E Tremont Avenue
Bronx, NY 10461
Sara Dingledy, Principal

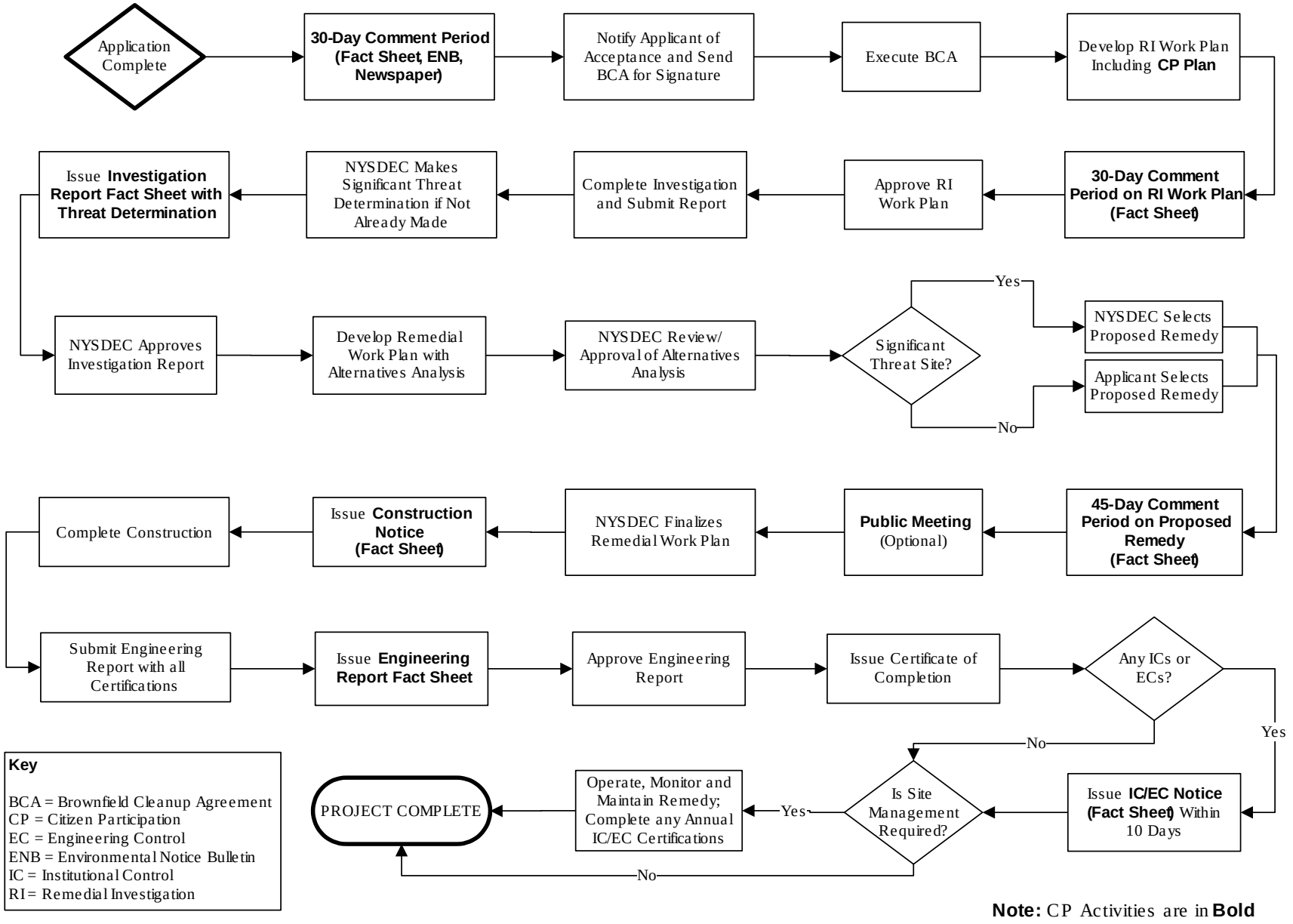
6. Pelham Lab High School
3000 E Tremont Avenue
Bronx, NY 10461
Jason Wagner, Principal

7. Lewis and Clark School
2555 Tratman Avenue
Bronx, NY 10461
Kuvana Jones, Principal

Appendix C - Site Location Map



Appendix D– Brownfield Cleanup Program Process



Note: CP Activities are in **Bold**

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)

EBC

ENVIRONMENTAL BUSINESS CONSULTANTS

Maggie Ellis, Project Manager

Professional Experience
EBC: July 2017
Prior: 2 years

Education
Bachelor of Arts in Environmental Studies, George Washington University at Washington, D.C.

Areas of Expertise
- Phase I Property Assessments / Transaction Screens
- Phase II Investigations, including Indoor Air Quality, Soil, and Groundwater
- Remedial Investigations
- Management of Site Investigations/Remedial Oversight of NYC E-Designation Sites
- Remedial Investigation Work Plans, Remedial Investigation Reports, Remedial Action Work Plans

Professional Certification
- OSHA 40-hr HAZWOPER
- OSHA 10-hr Construction Health and Safety

PROFILE

Ms. Ellis has 4 years experience as an environmental consultant and has worked on a wide range of environmental projects. Major responsibilities include Phase I and II Environmental Site Assessments and Investigations for commercial, industrial and residential properties within New York and New Jersey. Additional responsibilities include Remedial Investigation Work Plans, Remedial Investigation Reports, and Remedial Action Work Plans.

Ms. Ellis' field experience includes environmental sampling (groundwater, soil, surface water, air, soil gas), the oversight of soil boring and well installations, managing remediation on Site, tank removals, and spill management and closure. Ms. Ellis has prepared reports for both regulatory and client use.

PREVIOUS EXPERIENCE

Advantage Environmental Consultants, Conshohocken, PA – Environmental Scientist, 2015-2017

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ENVIRONMENTAL BUSINESS CONSULTANTS

Thomas Gallo, Field Manager / Project Manager

Professional Experience
EBC: July 2015

Education
Bachelor of Arts, Geology, State University of New York at Potsdam, NY

Areas of Expertise
- Phase I Property Assessments
- Phase II Subsurface Investigations
- Indoor Air Quality (IAQ) Investigations
- NYSDEC Spill Site Investigations
- Asbestos Surveys
- Hazardous Materials Assessments
- Remedial Investigation Work Plans, Remedial Investigation Reports, Remedial Action Work Plans
- Remedial Oversight of NYC E-Designation Sites

Professional Certification
- OSHA 40-hr HAZWOPER
- NYS Asbestos Inspector
- OSHA 10-hr Construction Health and Safety

PROFILE

Mr. Gallo has 4 years' experience as an environmental consultant and has worked on and managed a wide range of environmental projects. Major responsibilities include Phase I and Phase II Site Assessments and Investigations for commercial, industrial, and residential properties in New York and New Jersey. Additional responsibilities include Remedial Investigation Work Plans, Remedial Investigation Reports, and Remedial Investigation Work Plans.

Mr. Gallos' field experience includes environmental sampling (groundwater, soil, surface water, air, soil gas), the oversight of soil boring and well installations, managing remediation on Site, tank removals, and spill management and closure. Mr. Gallo has prepared reports for both regulatory and client use.

AMC Engineering, PLLC
18-36 42nd Street
Astoria, NY 11105
718-545-0474
Fax 516-706-3214

Andrew Sung

RELEVANT EXPERIENCE

AMC Engineering, PLLC *– Environmental Engineer* October 2014 – Present

- Designed and assembled documentation for environmental regulatory compliance permits, such as construction groundwater dewatering, dry cleaners installation, and autobody spray booth installation.
- Generated reports for the State (NYS DEC) and City (NYS DEP) pertaining to environmental findings and remediation, such as Remedial Investigation Reports, Remedial Action Reports, Final Engineering Reports, and Site Management Plans.
- Generated reports for clients pertaining to soil removal and disposal, such as Materials Handling Plans and Excavated Materials Disposal Plans
- Performed fieldwork in the following areas: soil waste characterization sampling, in-situ chemical injections, groundwater sampling, silica dust and air sampling, community air monitoring for trucking and soil excavation, and environmental inspections for: vapor barriers, sub-slab depressurization systems, and erosion & sediment control (SWPPP inspections)
- Supervised new hires, training them in CAD design activities, report writing, and field activities.

- Coordinated and scheduled drilling activities with clients and drillers (C Squared Environmental Corporation)
- Filled in as driller's apprentice on an as-needed basis for C Squared Environmental Corporation
    - Performed soil borings, monitoring wells installation, in-situ chemical injections, and soil-gas vapor implants installations

CERTIFICATIONS / TRAINING / LICENSES

- OSHA 40 HOUR HAZWOPER (and 8-hour refreshers) October 2014 – Present
- OSHA 10 HOUR CONSTRUCTION March 2015 – Present
- CERTIFICATE OF EROSION & SEDIMENT CONTROL TRAINING October 2014 – October 2017
- MTA NYC TRANSIT TRACK SAFETY CERTIFICATION March 2016 – March 2018
- ENGINEER IN TRAINING (EIT) [ID: 14-944-15] March 2014 – Present

TECHNICAL SKILLS

- *Computer Software*: TurboCAD, Microsoft Office—Word, Excel, PowerPoint
- *Programming*: C/C++, Wolfram Mathematica, Matrix Laboratory (MATLAB)

EDUCATION

Stony Brook University – SUNY: *B.E Chemical and Molecular Engineering* Graduated: May 2014

- Recipient of: Weinig Foundation Scholarship, and Presidential Scholarship
- University Scholar (Fall 2010 – May 2014)

PROFESSIONAL AFFILIATIONS

American Institute of Chemical Engineers (AIChE), *Metro New York Section* June 2013 – Present

- **Chapter Treasurer** September 2016 - Present
- **Student Outreach Coordinator** September 2015 – Present

EBC

ENVIRONMENTAL BUSINESS CONSULTANTS

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

ATTACHMENT F
Estimated Remedial Costs

Former Boyle Auto Wreckers Site
1346 Blondell Avenue
Bronx, NY

Summary of Project Costs

TASK - ENVIRONMENTAL REMEDIATION	NYS Brownfields Cleanup Program Costs by Task Track 1	Track 2
Excavation and Disposal	$ 1,292,193.60	$ 1,292,193.60
Waste Charaterization	$ 26,825.00	$ 26,825.00
Endpoint analyis, DUSR, EDDs	$ 40,550.00	$ 40,550.00
Air Monitoring and Field Oversight	$ 156,400.00	$ 156,400.00
Project Management	$ 59,850.00	$ 59,850.00
Dewatering Permits and Treatment System	$ 367,750.00	$ 367,750.00
Status Reports	$ 3,000.00	$ 3,000.00
Environmental Easement Package	-	$ 12,500.00
Site Management Plan	-	$ 11,500.00
Final Engineering Report	$ 18,950.00	$ 18,950.00
Subtotal	$ 1,965,518.60	$ 1,989,518.60
15% Contigency	$ 294,827.79	$ 298,427.79
Total	**$ 2,260,346.39**	**$ 2,287,946.39**